The Quebec City Conference 2013

PPF

Participant's Guide

Including important background information on each sessions

Public Policy Forum on Venture Capital and Innovation

Quebec City, December 3 and 4, 2013

Save the date: October 21 to 24, 2014

MESSAGE FROM THE QUEBEC CITY CONFERENCE PRESIDENT

It is our great pleasure to welcome you to the Quebec City Conference's ("QCC") Public Policy Forum on Venture Capital and Innovation ("PPF").

We are offering this year a renewed and enhanced format for the PPF as the QCC now focuses exclusively on "content oriented" forums. The Forum will be held on one and a half days, include two separate tracks on the evening of the first day that will each end with a reception and conclude with a networking lunch with the participants of another forum of the QCC, the Institutional Investors Roundtable (IIR).

None of this would be possible without our wonderful sponsors, volunteers and organizers and everyone else who has worked so hard to make this Conference a success. We can never thank you enough.

We would like to thank, in particular, the governments that supported the Public Policy Forum, financially and logistically. We salute the government of France, through Bpifrance, and the US Department of Commerce, which joined the governments of Canada, Quebec, Ontario and British Columbia as partners in this project. They came together based on the conviction that joining forces, resources and expertise is the right strategy to maximize value for each participant. We believe that this generous and visionary precedent will also benefit other jurisdictions faced with a common challenge of creating wealth through innovation.

We hope all of you enjoy and benefit from your participation at this renewed PPF, while seeing old friends and developing new and lasting relationships

Sincerely,

Christian Racicot

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Résumés

Gilles Duruflé

Executive Vice President
The Quebec City Conference
President
Public Policy Forum on Venture Capital

Gilles Duruflé is presently Executive Vice President of the Quebec City Conference and President of the Public Policy Forum. He is also an independent consultant advising venture capital and private equity funds, institutional investors and governments.

He was until 2004 Senior Partner at CDP Capital Technology Ventures, the venture capital subsidiary ot the Caisse de dépôt et placement du Québec, in charge of the Funds of funds portfolio, investing in North American and European VC funds.

He was previously Head of strategic studies at the Caisse de dépôt et placement du Québec. From 1979 to 1991, he worked as Senior Partner in strategic consulting firms in the CDC Group (Caisse des dépôts et consignations, Paris) in Europe and North America.

He is a Vice President of the Canadian Venture Capital Association (CVCA) and sits on the International Private Equity Valuation (IPEV) Board.

M. Duruflé obtained his Masters in Philosophy from the CERP (Paris), his Ph.D. in Mathematics from the Paris VI University and the Diploma of the Centre d'Études des Programme Économiques (Ministry of Finance, Paris). He is a CFA and has published numerous books and articles on various subjects related to economics and finance.

Yigal Erlich

Chair
Public Policy Forum on Venture Capital
Founder, Chairman and Managing Partner
The Yozma Group

Mr. Yigal Erlich is the founding father of the Israeli venture capital industry and one of the most prominent figures in the Israeli high-tech arena in the past 15 years.

At the beginning of the 1990s, Mr. Erlich identified a market failure and a huge need in to establish for the first time a professionally-managed venture capital industry that will fund the exponential growth of high tech ventures coming out of.

In late 1992, Mr. Erlich convinced the Israeli government to allocate $100 million for his venture capital vision. Within a period of three years, Erlich, along with the other members of the core team at Yozma, established ten venture funds. These ten funds, which include Gemini, JPV, Nitzanim (Concord), Polaris (Pitango), STAR, Walden and Vertex, are the backbone of the vibrant and sophisticated venture capital market that has today.

Mr. Yigal Erlich is the founder of the Israel Venture Association and served as its first Chairman. Between 1984 and 1992, Mr. Erlich served as the Chief Scientist of the Ministry of Industry and Trade. During his eight-year tenure as Chief Scientist, Mr. Erlich commanded an annual budget of $200 million, primarily directed at research and development projects of high-technology companies. In addition, Mr. Erlich initiated the Generic Technology program which fostered cooperation on long-term R&D activities through the creation of consortia of companies with research institutes and universities worldwide.

Mr. Erlich also started the Technology Incubator Program that led to the creation of 24 Incubation Centers throughout. Mr. Erlich was instrumental in the establishment of several bi-national industrial and technology R&D cooperation agreements with US and other countries. Mr. Erlich was the Chairman of the Executive Committee of the US-Israel Bi-national Industrial Research and Development Foundation (BIRD), and a Director of the Dead Sea Works, Israel Chemicals, Israel Oil Refineries, Hadassah's commercialization company - Hadassit, and the Technion Research and Development Co. Ltd; he is a director in RVC (Russian Venture Company).

Mr. Erlich holds B.Sc. and M.Sc. in Chemistry and an MBA from the Hebrew University of Jerusalem.

Introduction by the President & Chairman of the Public Policy Forum on Venture Capital and Innovation

Innovation is the main driver of growth in modern economies. An outgrowth of the Quebec City Conference that aims to be the Davos of the international community of private long-term investors, the PPF is concerned with the innovation ecosystem along with its best practices and success factors from an investment and public policy perspective.

2013 Program Highlights

One of the main themes of the 2013 edition of the PPF will be on how accelerators, seed investors, matching and crowdfunding platforms are changing the seed funding game for emerging technology companies, the opportunities and challenges this creates for the various players of the financing chain and potential implications for policy designers. This theme will be developed during plenary sessions and at the UNconference that will be one of the separate tracks of the PPF at the end of the afternoon and in the evening of the first day.

Another track will focus on tech transfer and seed funding models in life sciences in the context of pharmaceutical companies and VC funds looking for new types of partnerships.

Other topics addressed during plenary sessions will include:

- Institutional investors' perspectives on the financing of innovation;
- Recent international developments regarding government tools to support the financing chain: VC funds of funds and tax credits to individual investors;
- A Harvard business case on AngelList.

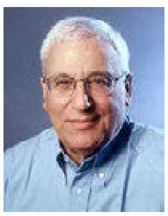
Year after year, a community is building around the PPF and this has led to a request for more interaction among participants and richer content. In order to meet this request and as the Quebec City Conference now focuses exclusively on content oriented forums, the PPF's format has been renewed: it will be held over one and a half days, include in the afternoon of the first day two separate tracks that will end with a reception. Finally, it will conclude with a networking lunch with the participants from the Institutional Investors Forum (IIR).

Our speakers and panellists, as well as our audience, are composed of public policy makers and industry leading GPs, LPs, academics and other industry experts from four continents who all have interest and high level experience in advocating, designing and implementing public policies in support of a buoyant venture capital ecosystem to finance emerging technology companies. This should set the stage for what we hope will be intense discussions and high quality networking.

We would like to thank all those who contributed to this Forum: Professor Josh Lerner, our special advisor who had to cancel his presence this year for personal reasons, Professor Thomas Hellmann who fortunately will be able to step in to replace him, our Advisory and Organizing Committees, as well as the directors of the Québec City Conference who have enthusiastically supported this endeavour.

A special “thank you” goes to the Governments of Quebec, Canada, Ontario, British-Columbia, France through Bpifrance and the US Department of Commerce, which partnered with the Québec City Conference to develop this Forum and have provided a great deal of financial and technical support.

We hope you will find the documents contained in this Participant’s Guide interesting and wish you a very successful Forum.



Yigal Erlich
Chairman
Public Policy Forum on Venture Capital and Innovation
Founder, Chairman and Managing Partner
The Yozma Group

Gilles Duruflé

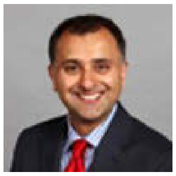
Gilles Duruflé
Executive Vice President
The Quebec City Conference
President
Public Policy Forum on Venture Capital and Innovation

Advisory Committee

SPECIAL ADVISOR

Josh Lerner
Jacob H. Schiff Professor of Investment Banking
Harvard Business School

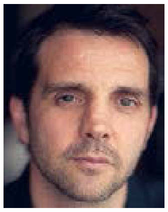
ADVISORS



Ajay Agrawal
Peter Munk Professor of Entrepreneurship
Rotman School of Management
University of Toronto

Thomas Hellmann
B.I. Ghert Family Foundation Professor in Finance and Policy
Sauder School of Business
University of British Columbia

Chris Arsenault
Managing Partner
iNovia Capital



John Stokes
Partner
Real Ventures

Organizing Committee

PRESIDENT

Gilles Duruflé
Executive Vice President
The Quebec City Conference
President
Public Policy Forum on Venture Capital

MEMBERS

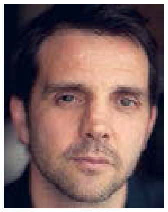
Chris Arsenault
Managing Partner
iNovia Capital

Cédric Bisson
Venture Partner
Teralys Capital

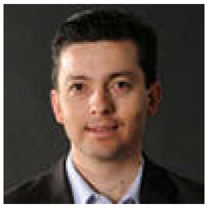
Chris Coburn
Vice President Research, Venture and Licensing
Partners Healthcare

Jerel Davis
Operating Principal
Versant Ventures

Raphael Hofstein
President and CEO
MaRS Innovation



John Stokes
Partner
Real Ventures



Rogelio de los Santos
Managing partner and founder
Alta Ventures

PROGRAM

TUESDAY, DECEMBER 3 – PPF DAY 1 - ESPACE 400e

Time	Event	Venue
7:00 am	The PPF will not be held at Fairmont Le Château Frontenac (the hotel) but at the Espace 400e which is about 5 minutes away by car and 15 minutes walking. On both days shuttles will pick up participants at Fairmont Le Château Frontenac every 10 minutes starting at 7:00 am. Gathering will take place in the lobby of the hotel.	*Fairmont Le Château Frontenac*
7:15 am	**BREAKFAST AND REGISTRATION**	*Espace 400e*
8:30 am	**WELCOME**	*Espace 400e*

Mr. **Steve Hurwitz**
Co-Founder
The Quebec City Conference

Mr. **Yigal Erlich**
Founder, Chairman and Managing Partner
The Yozma Group
Chair
Public Policy Forum on Venture Capital

INTRODUCTION

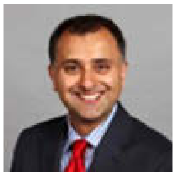
Dr. **Gilles Duruflé**
President
Public Policy Forum on Venture Capital

Time	Event	Venue
8:50 am	**KEYNOTE PRESENTATION : “The changing landscape of entrepreneurial risk capital: origins and implications”**	*Espace 400e*

Dr. **Thomas Hellmann**
B.I. Ghert Family Foundation Professor in Finance and Policy
Sauder School of Business
University of British Columbia

TUESDAY, DECEMBER 3 – PPF DAY 1 - ESPACE 400e

Time	Event	Venue
9:25 am	**PRESENTATION : "Some simple economics of crowdfunding"**	*Espace 400e*



Dr. **Ajay Agrawal**
Peter Munk Professor of Entrepreneurship
Rotman School of Management
University of Toronto

Time	Event	Venue
9:45 am	**FIRESIDE CHAT : An entrepreneur who successfully launched her company through crowfunding and a partner of the first VC fund to raise capital under the JOBS Act**	*Espace 400e*

Ms. **Ariel Garten**
CEO
InteraXon (Canada)

Mr. **David Teten**
Partner
FF Venture Capital (USA)

Moderator

Mr. **Chris Arsenault**
Managing Partner
iNovia Capital (Canada)

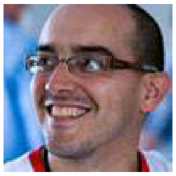
Time	Event	Venue
10:15 am	**NETWORKING BREAK**	*Espace 400e*

TUESDAY, DECEMBER 3 – PPF DAY 1 - ESPACE 400e

Time	Event	Venue
10:45 am	**FIRST PANEL : "Crowdfunding's potential impact on the financing of high growth SMEs – opportunities, risks and challenges for policy makers"**	*Espace 400e*

Panelists

Mr. **Douglas Ellenoff**
Ellenoff, Grossman & Schole LLP (USA)

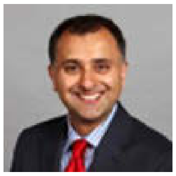


Mr. **Dave McClure**
Founding Partner
500 Startups (USA)

Mr. **Alex Mittal**
Co-founder and CEO
Funders Club (USA)

Ms. **Priya Ramdas**
Assistant Director
Alternative and Innovative Finance
Department of Business, Innovation & Skills (UK)

Moderator



Dr. **Ajay Agrawal**
Peter Munk Professor of Entrepreneurship
Rotman School of Management
University of Toronto

12:00 pm	**NETWORKING LUNCH** **Address by Mr. Nicolas Marceau, Quebec Minister of Finance and the Economy**	*Espace 400e*

TUESDAY, DECEMBER 3 – PPF DAY 1 - ESPACE 400^{e}

Time	Event	Venue
1:45 pm	**HARVARD BUSINESS CASE : AngelList** **Moderator**  Dr. **Thomas Hellmann** *B.I. Ghert Family Foundation Professor in Finance and Policy* Sauder School of Business University of British Columbia	*Espace 400^{e}*
2:45 pm	**NETWORKING BREAK**	*Espace 400^{e}*
3:00 pm	**SECOND PANEL :"Institutional investors' views on the financing of innovation"** **Panelists**  Mr. **Jagdeep Bachher** *Executive Vice President Venture and Innovation* AIMCO (Canada)  Mr. **Frank Landsberger** *Senior Managing Director* INKEF (Netherlands)  Mr. **Peter Pereira Gray** *Managing Director Investment Division* The Wellcome Trust (UK) **Moderator**  Ms. **Ann Leamon** *Former Teaching Fellow* Harvard Business School (USA)	*Espace 400^{e}*
4:00 pm	**END OF THE PLENARY SESSIONS – NETWORKING BREAK**	*Espace 400^{e}*

TUESDAY, DECEMBER 3 – PPF DAY 1 – 4:30 pm to 9:00 pm

Time	Event	Venue
UNCONFERENCE TRACK – ESPACE DALHOUSIE		
Linking entrepreneurs, accelerators, seed funds and crowdfunding platforms with investors and policy designers		
4:30 pm	In a different setting that will mix the PPF audience with entrepreneurs and business angels – accelerators, seed funds and platform managers will have an opportunity to briefly pitch their respective models to the audience including discussing why these models should succeed in attracting best entrepreneurs and investors and how they will contribute to the building of the ecosystem. See detailed agenda.	*Espace Dalhousie*
7:00 pm – 9:00 pm	**UNCOCKTAIL** – Food will be served	*Espace Dalhousie*
LIFE SCIENCES TRACK – ESPACE 400E		
Tech transfer and seed funding models in life sciences in the context of the changes in R&D strategies of pharmaceutical companies		
4:30 pm	A parallel track will be organized around tech transfer and seed funding models in life sciences in the context of (i) pharmaceutical companies looking for new types of partnerships with universities and VC funds and (ii) VC funds developing new models for seeding their deal flow. This track will be structured as a series of short panels/discussions on specific issues, involving as many participants as possible in order for participants to get to know one another and have a better understanding of their working models. It will end with a cocktail and dinner. See detailed agenda.	*Espace 400e*
7:00 pm – 9:00 pm	**COCKTAIL RECEPTION** – Food will be served	*Espace 400e*
11:00 pm – 1:00 am	**AFTER HOURS NETWORKING OPEN TO GIF AND PPF PARTICIPANTS** Private After dinner drinks available	*Salon Rose Fairmont Le Château Frontenac*

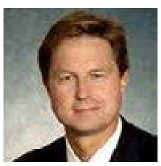
WEDNESDAY, DECEMBER 4 – PPF DAY 2 - ESPACE 400^e

Time	Event	Venue
7:30 am	**BREAKFAST**	*Espace 400^e*
8:30 am	**KEYNOTE PRESENTATION : “Divergent views on the role of government in entrepreneurial finance”**	*Espace 400^e*

Dr. **Thomas Hellmann**
B.I. Ghert Family Foundation Professor in Finance and Policy
Sauder School of Business
University of British Columbia

Time	Event	Venue
9:00 am	**THIRD PANEL : “Government equity financing programs to support the venture capital ecosystem”**	*Espace 400^e*

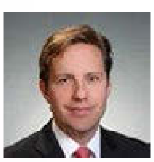
Panelists



Mr. **Samuel Duboc**
Senior Advisor Venture Capital
Finance Canada

Mr. **John Holloway**
Director Transaction & Relationship Management
European Investment Fund (Luxembourg)

Mr. **Philippe Mutricy**
Chief Economist
Bpifrance (France)



Mr. **David Zug**
Vice President
HarbourVest (USA)

Moderator

Mr. **Stephen Hurwitz**
Co-Founder
The Quebec City Conference

WEDNESDAY, DECEMBER 4 – PPF DAY 2 - ESPACE 400e

Time	Event	Venue
10:00 am	**NETWORKING BREAK**	*Espace 400e*
10:20 am	**FOURTH PANEL : "Public policies to support business angels' investment"**	*Espace 400e*

Panelists

Ms. **Franceska Banga**
CEO
New Zealand Venture Fund (NZ)

Mr. **Zach Brandon**
President
Greater Madison Chamber of Commerce and former
Vice Chair Public Policy
Angel Capital Association (USA)

Ms. **Priya Ramdas**
Assistant Director
Alternative and Innovative Finance
Department of Business, Innovation & Skills (UK)

Mr. **Mike Satterfield**
General Partner
Yaletown Capital (Canada)

Moderator

Dr. **Thomas Hellmann**
B.I. Ghert Family Foundation Professor in Finance and Policy
Sauder School of Business
University of British Columbia

WEDNESDAY, DECEMBER 4 – PPF DAY 2 - ESPACE 400e

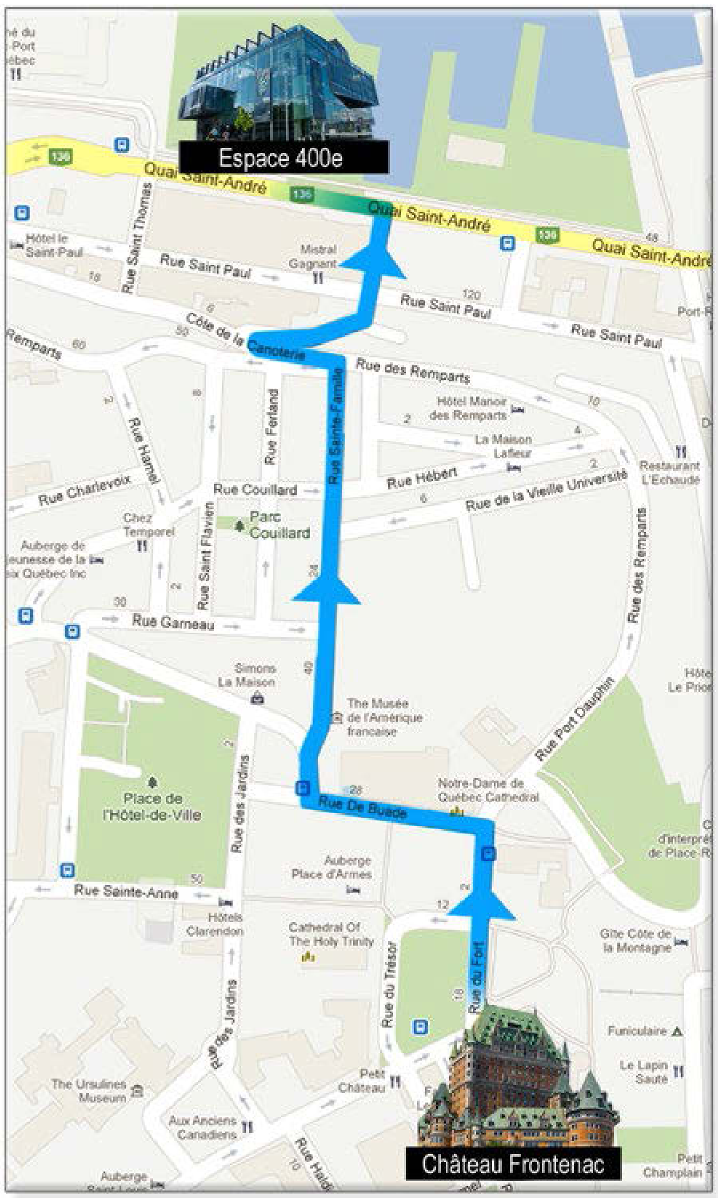
Time	Event	Venue
11:20 am – 11:25 am	**CONCLUSION**  Dr. **Gilles Duruflé** *President* Public Policy Forum on Venture Capital	*Espace 400e*
11:45 am – 2:00 pm	**NETWORKING LUNCH WITH THE IRR** **Joint International Buffet with Institutional Investors Roundtable (IIR)**	*Fairmont Le Château Frontenac*

PPF & Life Sciences Track Location

The PPF will be held at Espace 400^{e} which is about 5 minutes away by car and 15 minute walking. Espace 400^{e} was built for the celebration of the 400th anniversary of Quebec City's foundation.

Shuttles will pick up participants at Fairmont Le Château Frontenac every 10 minutes starting at 7:00 am. Gathering will take place in the lobby of the hotel.

Map and itinerary

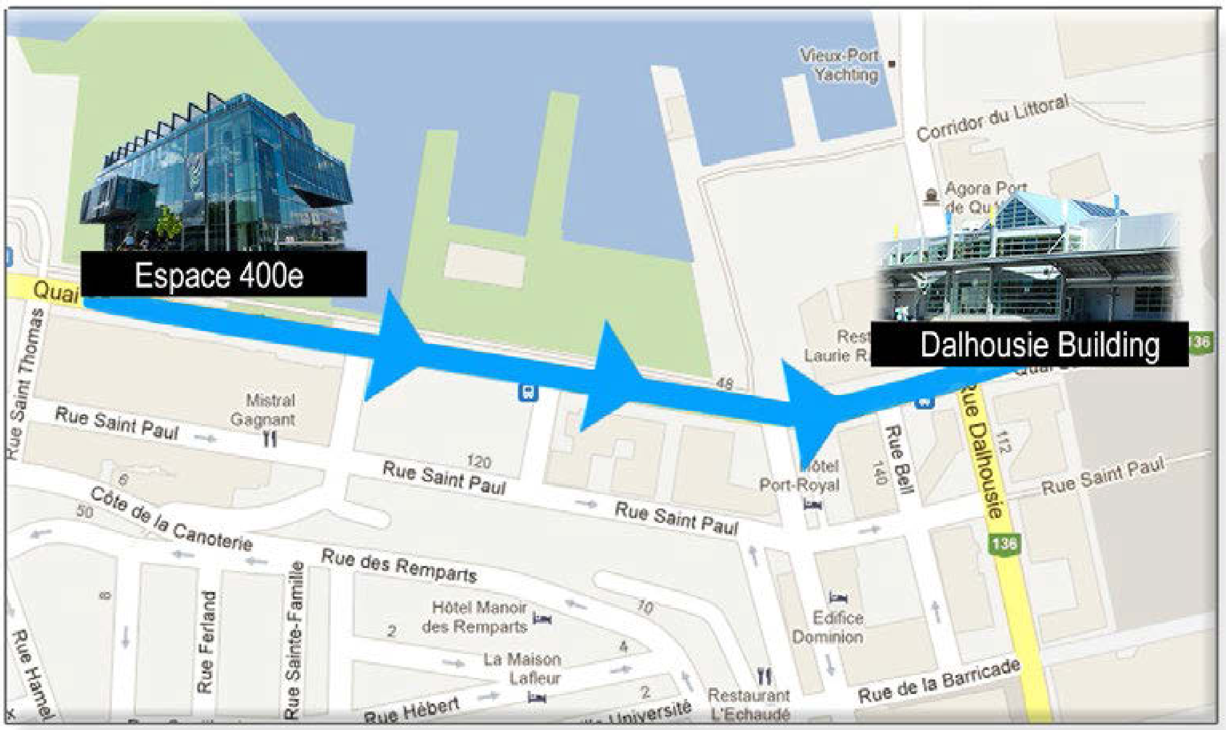


UNconference Location

The UNconference will be held at Espace Dalhousie (Dalhousie Building) which is about 5 minutes walking from Espace 400e.

Shuttles will pick up participants at Espace 400e starting at 4:00 pm.

Map and itinerary



Dec. 3 – Morning Session

KEYNOTE PRESENTATION

"The changing landscape of entrepreneurial risk capital: origins and implications"

Keynote Speaker

Dr. **Thomas Hellmann**
B.I. Ghert Family Foundation Professor in Finance and Policy
Sauder School of Business
University of British Columbia

Dr. Thomas Hellmann is the B.I. Ghert Family Foundation Professor in Finance and Policy at the Sauder School of Business at the University of British Columbia. He holds a BA from the London School of Economics and a PhD from Stanford University. He is the director of the W. Maurice Young Entrepreneurship and Venture Capital Research Centre at UBC. Prior to joining UBC, he spent ten years as an Assistant Professor at the Graduate School of Business, Stanford University. He teaches executive, MBA and undergraduate courses in the areas of venture capital, entrepreneurship and strategic management. His research interests are venture capital, entrepreneurship, innovation, strategic management and public policy. He is also the founder of the NBER Entrepreneurship Research Boot Camp, which teaches the frontiers of entrepreneurship economics and entrepreneurial finance to PhD students. Recently he wrote a report about the role of government in venture capital for the World Economic Forum in Davos. He also led the evaluation report of the venture capital program in British Columbia. His academic writings have been published in many leading economics, finance and management journals. He has also written numerous case studies on entrepreneurship and venture capital, and led the development of a library of case studies focused on high technology companies in British Columbia. Currently he is writing a textbook on venture capital and private equity.

PRESENTATION

"Some simple economics of crowdfunding"

Speaker

Dr. **Ajay Agrawal**
Peter Munk Professor of Entrepreneurship
Rotman School of Management
University of Toronto

Ajay Agrawal is the Peter Munk Professor of Entrepreneurship at the University of Toronto's Rotman School of Management, Research Associate at the National Bureau of Economic Research in Cambridge, MA, Co-Founder of The Next 36, and Founder of the Creative Destruction Lab at the University of Toronto. Professor Agrawal teaches courses on business strategy, innovation, and entrepreneurship. He was recognized as "Professor of the Year" by the past seven consecutive graduating MBA classes. Professor Agrawal conducts research on the economics of innovation and creativity. He has presented this work at a variety of institutions including Harvard, MIT, Stanford, Berkeley, London Business School, Wharton, London School of Economics, Industry Canada and the Federal Reserve Bank. Professor Agrawal advises firms and governments in fields related to innovation and strategy and has testified as an expert witness.

➢ "Some simple economics of crowdfunding", Ajay K. Agrawal, Christian Catalini, Avi Goldfarb, NBER Working Paper Series, n° 19133, June 2013 p. 29

FIRESIDE CHAT

An entrepreneur who successfully launched her company through crowfunding and a partner of the first VC fund to raise capital under the JOBS Act

Moderator: Mr. **Chris Arsenault**
Managing Partner
iNovia Capital

Panelists:

Ms. **Ariel Garten**
CEO
InteraXon (Canada)

Mr. **David Teten**
Partner
FF Venture Capital (USA)

Panel's background information:

- "InteraXon looking for crowdfunding for Muse, a brainwave-sensor headband", Phys.org, October 24, 2012 — p. 77
- "A big boost to brain sensing technology strikes a chord with global investors", InterAxon press release, August 15,2013 — p. 78
- "Pioneering a New Frontier for Venture Capital", FF Ventures Blog — p. 79
- "ff Venture Capital Is First VC Fund To Raise Capital Under The JOBS Act", Forbes, October 15, 2013 — p. 81
- "The first VC firm to 'generally solicit'", CNN Money, October 11, 2013 — p. 83

Panelists

Ms. **Ariel Garten**
CEO
InteraXon (Canada)

Ariel Garten, Founder and Chief Executive Officer, InteraXon Inc. If there ever was a gap between science, art, business and technology, Ariel has closed it. Her work converts the workings of the mind into tangible solutions. Ariel has researched at the Krembil Neuroscience Institute studying hippocampal neurogenesis, displayed work at the Art Gallery of Ontario, DeLeon White Gallery and opened Toronto Fashion Week. The intersections of these diverse interests have culminated into various lectures with topics such as “The Neuroscience of Aesthetics” and “The Neuroscience of Conflict”, featured on TVO's Big Ideas. Referred to as the “Brain Guru”, Ariel has also run a successful real estate business, spent time as the designer of a Canadian fashion boutique, and is a practicing psychotherapist. In 2007, Ariel co-founded InteraXon, one of the world's leading companies creating brainwave controlled products and experiences. InteraXon debuted with the creation of "Bright Ideas", Ontario's feature showcase at the Vancouver 2012 Winter Olympics, where visitors in Vancouver got to control the lights on the CN Tower, Niagara Falls and the Canadian Parliament buildings, with their minds, from across the country. Ariel and her team are merging technology, neuroscience, art and design. Muse, InteraXon’s brain-sensing headband, just one example of this innovation, allows consumers to interact with their smart phone and tablet using the power of their mind. Ariel and Muse are regularly lauded in global media- CNN, CNET, CNBC, Reuters, Tech Crunch, Wall Street Journal Tech for creating what Huffington Post calls "the beautiful headband that will make you smarter". Ariel regularly lectures at MIT, Singularity University and FutureMed. Her lecture on Ted.com has over 250,000 views and she gave this year's opening keynote at Le Web, Europe's biggest tech conference. Ariel is lauded for her style and inspiration as much as her role at the helm of a technology company that is bringing the future to life.

Mr. **David Teten**
Partner
FF Venture Capital (USA)

David Teten (teten.com) is a Partner with ff Venture Capital and Founder and Chairman of Harvard Business School Alumni Angels of Greater New York. ff VC has made over 180 investments in over 70 companies since 1999. HBS Alumni Angels of NY is the second-largest angel network in New York. David led the first-ever study of best practices of venture capital and private equity funds in originating new deals and the first-ever study of VCs in creating portfolio company value. David is a frequent keynote speaker at conferences for investors, entrepreneurs, and executives. He has received the highest ratings of any speaker at three different conferences. He has published in Harvard Business Review, Institutional Investor, the Journal of Private Equity, etc., and is the lead author of The Virtual Handshake: Opening Doors and Closing Deals Online. He holds a Harvard MBA and Yale BA, both with honors.

Moderator

Mr. **Chris Arsenault**
Managing Partner
iNovia Capital (Canada)

Chris Arsenault is Managing Partner at iNovia Capital and has been an early stage investor and entrepreneur for the last two decades. Chris currently serves as a director or observer on the boards of Fixmo, Gamerizon, Localmind, Luxury Retreats, Reflex Photonics, Well.ca and Woozworld. Chris is an active board member of the Canadian Venture Capital Association (CVCA), is Co-Chair of the Canadian Innovation Exchange (CIX) and is active Charter Member of Silicon Valley based C100 (the Top Canadians in the Valley organization). Before joining the firm in 2002, Chris founded, co-founded or funded a number of Software, Mobile and Consumer Internet technology start-up companies, including 2 spin-offs of telecom giants Microcell and Teleglobe. Chris is also proud to have been instrumental in the creation of the ENABLIS Entrepreneurial Network (a $30 million G8-sponsored venture capital seed fund). Chris' entrepreneurial and investment experience includes a number of notable exits that generated large shareholder returns, such as Airborne Entertainment, Corpernic.com, Wanted Technologies, i5 Inc., up2 Inc. and SIT Inc. His work in the mid 90's as founder and CEO of SIT provided him with the opportunity to play an important part in the initial growth of the Internet. As one of Netscape's first Development Partners, Integrator and International reseller, SIT's security products and dial-up technology eventually grew to become an integral part of Netscape's deployment. Chris believes that Entrepreneurship is a "state of mind", and thus part of one's core. It may be sleeping (waiting to be activated, nurtured or mentored), but it can't be taught or infused into a person. Entrepreneurship is not a profession; an entrepreneur has unique character traits that enable him/her to do amazing and impossible things.

FIRST PANEL

"Crowdfunding's potential impact on the financing of high growth SMEs – opportunities, risks and challenges for policy makers"

Moderator:

Dr. **Ajay Agrawal**
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Panelists:

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Ellenoff, Grossman & Schole LLP (USA)

Mr. **Dave McClure**
Founding Partner
500 Startups (USA)

Mr. **Alex Mittal**
Co-founder and CEO
Funders Club (USA)

Ms. **Priya Ramdas**
Assistant Director
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Department of Business, Innovation & Skills (UK)

Panelists

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Douglas S. Ellenoff, a member of the Firm since its founding in 1992, is a corporate and securities attorney with a specialty in business transactions and corporate financings. Mr. Ellenoff has represented public companies in connection with their initial public offerings, secondary public offerings, regulatory compliance as well as general corporate governance matters. During his career, he has represented numerous broker-dealers, venture capital investor groups and many corporations involved in the capital formation process. Recognized as a thought leader and expert on the nuanced legalities of the JOBS Act, Mr. Ellenoff, speaks prolifically at conferences and events. He's been a key representative and advocate for the industry and has actively engaged with the SEC to discuss many aspects of the proposed new law. Ellenoff Grossman & Schole is the leading law firm serving the security crowdfunding industry. The Firm has sponsored conferences, webinars and has been invited to speak at different events on the topic. Mr. Ellenoff has met with the SEC several times to discuss many aspects of the new law, how the industry currently operates and how both the SEC and FINRA will register and regulate the portals. EG&S is actively engaged with clients in the crowdfunding industry, including funding portals, broker-dealers, technology solution providers, software developers, investors and entrepreneurs.

Mr. **Dave McClure**
Founding Partner
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Dave uses his uncanny ability to function without sleep and frequent flyer miles to discover amazing geeks and entrepreneurs in Silicon Valley and around the world. Dave's ominous past includes work at Founders Fund, Facebook fBFund, PayPal, Mint.com, and SimplyHired. Hillbilly VC & Mad Dancing Skillz. As a 500 Startups Mentor, Dave guides our companies with Consumer, Customer Acquisition, Finance, Financial Services, Fundraising, International, Marketing, Product Management, SMBs, and Social expertise.

Panelists

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Co-founder and CEO
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Mr. Mittal is the co-founder & CEO of FundersClub, the world's first online VC firm. Before FundersClub, Mr. Mittal was the founding CEO of Innova Dynamics, a VC-backed touchscreen hardware company, leading the company from university laboratory to commercialization, securing design-in collaborations with today's major consumer electronics companies. Previously, he was the founding CTO of Crederity, a VC-backed identity and credential verification enterprise software company, and co-founded and led Penn Engineers without Borders, a non-profit that has provided running water to thousands of people worldwide. Mr. Mittal currently serves on the Board of Directors of three companies, holds degrees in economics and engineering from Wharton and the University of Pennsylvania, and is an alumni of Y Combinator. He was recently named an advisor to First Round Capital's Dorm Room Fund, and is a columnist for Inc. Additionally, Mr. Mittal has been featured in Forbes 30 under 30 in Tech, in BusinessWeek as one of America's Best Young Entrepreneurs, and in Silicon Valley's 40 under 40. Prior to his time as an entrepreneur, Mr. Mittal was active in science research, presenting at the 2002 Nobel Prize Ceremonies, and MIT Lincoln Laboratory named an asteroid after him for his work.

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Moderator

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SOME SIMPLE ECONOMICS OF CROWDFUNDING

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Some Simple Economics of Crowdfunding
Ajay K. Agrawal, Christian Catalini, and Avi Goldfarb
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ABSTRACT

It is not surprising that the financing of early-stage creative projects and ventures is typically geographically localized since these types of funding decisions are usually predicated on personal relationships and due diligence requiring face-to-face interactions in response to high levels of risk, uncertainty, and information asymmetry. So, to economists, the recent rise of crowdfunding - raising capital from many people through an online platform - which offers little opportunity for careful due diligence and involves not only friends and family but also many strangers from near and far, is initially startling. On the eve of launching equity-based crowdfunding, a new market for early-stage finance in the U.S., we provide a preliminary exploration of its underlying economics. We highlight the extent to which economic theory, in particular transaction costs, reputation, and market design, can explain the rise of non-equity crowdfunding and offer a framework for speculating on how equity-based crowdfunding may unfold. We conclude by articulating open questions related to how crowdfunding may affect social welfare and the rate and direction of innovation.

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1 Introduction

After raising \$375k (all amounts in USD) in seed funding from several high-profile Silicon Valley angel investors for an innovative e-paper display "Pebble" watch that enables users to interact with their Android or iOS device through a wrist interface, inventor-entrepreneur Eric Migicovsky required an additional \$100k for tooling equipment to move from his prototype to a small production run. Despite having production experience with a previous watch he created for the Blackberry, experience raising seed capital, pedigree through his affiliation with a high-profile incubator (Y-Combinator), and being located in a region with a high concentration of angel investors, he could not find a willing backer. On April 11, 2012, he turned to crowdfunding, with the goal of raising capital in small amounts from many people through the Kickstarter online platform. He thus launched a campaign to raise \$100k, promising contributors a watch for every \$120 (approximately) they pledged. To his surprise, he raised the required capital in two hours. After 37 days, he closed his campaign, having raised more than \$10M from 68,929 people and committed to producing 85,000 watches with expected delivery by September that year.

Around the same time, on April 5, 2012, President Obama signed into law the Jumpstart Our Business Startups (JOBS) Act. In contrast to the already existing crowdfunding platforms that enable individuals to raise funds as donations or in return for rewards (similar to pre-sales of new products in some cases), a key provision of the JOBS Act legalizes crowdfunding for equity by relaxing various restrictions concerning the sale of securities.[1] However, the primary purpose of the Securities Act of 1933, which is the basis for most of the regulations in question, is to protect investors. Thus, relaxing these restrictions raises the concern that crowdfunding will expose investors to risk from fraud or incompetence (Hazen,

[1] For example, the law relaxes restrictions on general solicitation of securities, eases SEC reporting requirements, and raises from 500 to 2,000 the number of shareholders a company may have and still remain private.

2012; Griffin, 2012). In the case of the Pebble, for example, despite disappointed and vocal funders, the holiday season came and went without a single unit shipped or even produced. Although the well-intentioned inventor posted regular updates on his progress as he sourced components from vendors around the globe and set up a production facility in China, he was not able to fill all of his crowdfunded orders until May 2013.[2] Anticipating these types of problems (and worse), the JOBS Act stipulated that equity crowdfunding required rules be set by the Securities and Exchange Commission (SEC), which were anticipated for January 2013 but are still in progress as of this writing.

These two events in April 2012, the signing of the JOBS Act and the financing of the Pebble, legislated and demonstrated an innovation in the market for early-stage finance that could have significant economic consequences. Although the years of preamble leading to these events occurred primarily outside of mainstream attention, both events, particularly the former, raised general awareness of and interest in the potential of crowdfunding (Figure 1). Furthermore, although not mainstream and not equity-based, the early years of crowdfunding provide preliminary insight into the behavior of creators and funders. (For simplicity, we group entrepreneurs, artists, and others who initiate projects or ventures under the label "creators." We group investors, pre-buyers, and donors under the label "funders.")

Crowdfunding developed primarily in the arts and creativity-based industries (e.g., recorded music, film, video games). Likely due to indirect network effects and similar to other online markets (e.g., eBay), crowdfunding has historically been dominated by a single platform (to creators, the value of a platform increases with the number of funders, and to funders, the value of a platform increases with the number of creators and other funders). Originally, that was Sellaband, a music-only platform founded in 2006 and based in Amsterdam, and subsequently it was Kickstarter, a broader creative projects platform founded in 2009 and

[2] 70,000 Pebbles were shipped as of May 2013, leaving 15,000 still to be delivered. http://allthingsd.com/20130516/now-fully-kickstartered-pebble-raises-15m-in-venture-capital-from-crv/

based in New York (we plot the growth of Kickstarter in Figure 2). Neither platform allows creators to issue equity for funding, although Sellaband did facilitate revenue sharing with funders during its first three years of operation. Still, data collected from funding activities on these platforms may provide clues to the types of user behavior that will emerge in equity-based crowdfunding.

In particular, early research on non-equity crowdfunding indicates that:

1. **Funding is not geographically constrained** - When Sellaband offered royalty sharing to investors, more than 86% of the funds came from individuals who were more than 60 miles away from the entrepreneur, and the average distance between creators and investors was approximately 3,000 miles (Agrawal, Catalini, and Goldfarb, 2011).

2. **Funding is highly skewed** - On the same platform, whereas 61% of all creators did not raise any money, 0.7% of them accounted for more than 73% of the funds raised between 2006 and 2009 (Agrawal, Catalini, and Goldfarb, 2011). Similarly, outcomes are highly skewed on Kickstarter, even conditioning the sample on successfully funded projects: 1% (10%) of projects account for 36% (63%) of funds (Agrawal, Catalini, and Goldfarb, 2013).

3. **Funding propensity increases with accumulated capital and may lead to herding** - The propensity of individual funders to invest in a project increases rapidly with accumulated capital. On Sellaband, in a given week, funders were more than twice as likely to invest in creators who reached 80% of their funding goal, relative to those who had raised only 20% of it (Agrawal, Catalini, and Goldfarb, 2011). The acceleration is particularly strong towards the end of the fundraising campaign, similar to online lending platforms (Zhang and Liu, 2012), and raises concerns of herding behavior. At the same time, projects that are eventually successful might slow down in the middle of the process because of a bystander effect - a reduction in the propensity

to fund by new individuals because of the perception that the target will be reached regardless (Kuppuswamy and Bayus, 2013).

4. **Friends and family funding plays a key role in the early stages of fundraising** - Friends and family disproportionately invest early in the funding cycle, generating a signal for later funders through accumulated capital. The asymmetry between friends and family and others in terms of funding behavior is strongest for the first investment decision but subsequently fades as funders are able to monitor the creator's progress directly on the crowdfunding platform (Agrawal, Catalini, and Goldfarb, 2011).

5. **Funding follows existing agglomeration** - Despite the decoupling of funding and location, funds from crowdfunding disproportionately flow to the same regions as traditional sources of finance (Agrawal, Catalini, and Goldfarb, 2013), perhaps due to the location of human capital, complementary assets, and access to capital for follow-on financing.

6. **Funders and creators are initially overoptimistic about outcomes** - On Sellaband, after a first wave of funded artists failed to deliver a tangible return on investment, funders revised their expectations downwards.[3] Similarly, Kickstarter recently faced pressures to adjust its guidelines after a number of high-profile projects encountered delays or failed to deliver on their initial promises. In the technology and design categories on Kickstarter, estimates suggest that more than 50% of products are delivered late (Mollick, 2013).

7. **Crowdfunding capital may substitute for traditional sources of financing** - Capital from crowdfunding may substitute for alternative sources such as home-equity loans. As house prices rise in a specific geographic region, making it easier

[3]Even artists with a tangible track record, such as Public Enemy, found it increasingly difficult to raise funds. http://techcrunch.com/2010/10/28/public-enemy-just-raised-75k-on-sellaband/

for entrepreneurs to use home-equity loans as a source of financing, the number of entrepreneurs who turn to crowdfunding decreases (Agrawal, Catalini, and Goldfarb, 2013).

Economic theory helps to explain these findings and, more generally, the recent rise in crowdfunding activity. Why was crowdfunding for early-stage creative projects not a meaningful method of finance before the commercialization of the internet? First, matching funders with creators is now more efficient and effective due to lower search costs online. Second, risk exposure is reduced because funding in small increments is economically feasible online. Finally, low communication costs facilitate better (though far from perfect) information gathering and progress monitoring for distant funders and also better enable funders to participate in the development of the idea.

These non-equity-based crowdfunding characteristics also apply in the equity setting. However, there are many important differences. Unlike non-equity crowdfunders who make funding decisions based on their own interest in the offering, an equity funder must also assess the expected demand from others. To the extent that creators are able to raise capital and demonstrate demand through non-equity crowdfunding (e.g., "pre-sales"), thus avoiding dilution, and then raise later-stage capital from established investors with status, reputation, a valuable network, and an ability to engage in follow-on financing rounds, creators with high-quality inventions may have little incentive to employ equity crowdfunding. Furthermore, traditional equity investors may be able to offer capital at a lower price than equity crowdfunding because they are able to conduct face-to-face due diligence and thus are better able to assess risk and return. Indeed, after demonstrating customer demand in a non-equity crowdfunding setting, the creator of the Pebble chose to raise his next round of $15m from traditional equity investors through conventional channels.[4]

[4]This series A round was led by Charles River Ventures. http://techcrunch.com/2013/05/16/pebble-nabs-15m-in-funding-outs-pebblekit-sdk-and-pebble-sports-api-to-spur-smartwatch-app-development/

In general, the most critical differences between equity and non-equity crowdfunding will arise due to the amplification of information asymmetries. Whereas the asymmetry problem currently concerns the feasibility of and the creator's ability to deliver the product, in the equity setting the asymmetry problem includes the above as well as the creator's ability to generate equity value by building a company rather than just delivering a product. In the absence of strict governance, reporting, accounting, and other requirements common in publicly traded securities markets, crowdfunders are subject to an unusually high degree of risk. Will risk levels be so high that either the market fails (low volume of trading) or social welfare is reduced due to excessive harm to funders?

Because equity crowdfunding is not yet established, we lack the data to answer this question.[5] Instead, we outline a framework for addressing it. We begin by identifying the primary actors in this market (creators, funders, platforms) and describe their primary incentives and disincentives for engaging in it. Then, focusing on the disincentives, we describe potential sources of market failure (adverse selection, moral hazard, collective action). Next, we characterize various market design features that may diminish disincentives and thus reduce the potential for market failure (reputation signaling, rules and regulation, crowd due diligence, provision point mechanism). Finally, we circle back to the open questions of the potential effects of crowdfunding on social welfare and the rate and direction of innovation. However, we begin with a characterization of the polarized debate about the potential for crowdfunding between experts in the popular press.

[5]There are, however, several existing platforms, such as AngelList in cooperation with SecondMarket, that enable equity crowdfunding, but only for accredited investors. At present, the scale of their online, platform-based investment activities seems limited, but appears to be growing quickly.

2 Competing Views in the Popular Press on Equity-Based Crowdfunding

Many business experts have weighed in on the potential benefits of crowdfunding. For example, they have opined on its potential to increase the total capital allocated to innovation, fund good ideas that might otherwise be undercapitalized, generate jobs, and evolve through experimentation:

> *"Fred Wilson, a prominent venture capitalist, calculates that if Americans used just 1% of their investable assets to crowdfund business they would release a $300 billion surge of capital."* - The Economist[6]

> *"Crowdfunding has the potential to revolutionize the financing of small business, transforming millions of users of social media such as Facebook into overnight venture capitalists, and giving life to valuable business ideas that might otherwise go unfunded."* - The Wall Street Journal[7]

> *"Besides, isn't this the type of innovation we should be encouraging? Unlike exotic derivatives and super-fast trading algorithms, crowdfunding generates capital for job-creating small businesses."* - The New York Times[8]

> *"Robert Litan of the Kauffman Foundation, a think-tank, believes venture-capital firms would boost crowdfunding if, say, they lent their reputations to young firms and promised to invest later if they met certain targets. With so much promising*

[6] http://www.economist.com/node/21556973

[7] http://online.wsj.com/article/SB10001424127887323468604578251913868617572.html

[8] http://www.nytimes.com/2011/09/26/opinion/a-proposal-to-allow-small-private-companies-to-get-investors-online.html

experimentation in the works, Mr. Litan says, let's just hope the SEC doesn't kill it off before it gets started." - The Economist[9]

At the same time, other experts have taken positions at the opposite end of the spectrum, focusing on legitimate concerns such as the potential for fraud, unrealistic investor expectations, the opportunity cost of lost expert advice, and inexperienced creators:

"...crowdfunding could become an efficient, online means for defrauding the investing public." - Wired[10]

"The honeymoon period that we are experiencing around crowdfunding is beginning to come to a close, said Wil Schroter, co-founder and chief executive of FundablePeople realize there is real risk involved in investing in anything early-stage, whether it's an idea, a charity or a product, and they're starting to understand they aren't buying off of Amazon." - The New York Times[11]

"While founders raising cash from a big pool of small amounts of money are benefiting from quick access and the boost of popular interest, they are also forgoing some of the advice and experience of more traditional angel or venture-capital investors." - The Financial Times[12]

"Anecdotal reports abound of flawed products (try Googling "jellyfish death trap"), overambitious creators who can't pull off what they promised, and epic delays. A CNNMoney investigation found that 84% of Kickstarter's 50 top-funded projects

[9] http://www.economist.com/node/21556973
[10] http://www.wired.com/business/2011/12/crowdfunding-big-thing-fraud/
[11] http://www.nytimes.com/2012/09/18/technology/success-of-crowdfunding-puts-pressure-on-entrepreneurs.html
[12] http://www.ft.com/cms/s/0/42ee668c-302c-11e2-891b-00144feabdc0.html

missed their estimated delivery dates." - CNNMoney[13]

Given the polarized debate on the benefits and costs of crowdfunding, it is perhaps surprising that the JOBS Act passed with unusually broad bipartisan support. However, the concerns expressed here may partly explain the SEC delay on setting the rules. We turn next to economic theory and evidence from research in different, but related, online markets to construct a framework for speculating on which market design features may be most important for reducing the likelihood of failure in the market for equity crowdfunding.

3 Incentives

There are three primary actors in crowdfunding: 1) creators, 2) funders, and 3) platforms. We summarize the incentives for each in terms of their motivations for engaging in crowdfunding. We then examine their disincentives.

3.1 Creator Incentives

Creators may choose to raise capital through crowdfunding rather than a traditional channel due to two primary incentives: 1) a lower cost of capital, and 2) access to more information. We describe each below.

3.1.1 Lower cost of capital

Creators typically access capital for early-stage ventures from sources such as personal savings, home-equity loans, personal credit cards, friends and family members, angel investors, and venture capitalists. Under certain conditions, crowdfunding may enable creators to access capital at a lower cost than traditional sources for three reasons:

[13] http://money.cnn.com/2012/12/18/technology/innovation/kickstarter-ship-delay/

1. **Better matches**: Creators match with those individuals who have the highest willingness to pay for equity in their venture (or for early access to their new product, etc.) where the search for such matches occurs across a global rather than local pool of potential funders. Thus, as opposed to traditional offline mechanisms for financing early-stage creative ventures, access to capital is not so strongly influenced by the creator's location. Indeed, in Agrawal, Catalini, and Goldfarb (2011), we report that on Sellaband, more than 86% of the funds came from individuals who were more than 60 miles away from the creator, and the average distance between creators and funders was approximately 3,000 miles.

2. **Bundling**: Non-equity-based crowdfunding demonstrates that under certain conditions funders value early access to products, recognition for discovering innovations, participating in a new venture's community of supporters, and other non-pecuniary rewards in return for financial backing. To the extent that platforms facilitate a hybrid approach and allow creators to bundle the sale of equity with other rewards they wish to offer (e.g., early access to products, limited-edition products, recognition), creators may be able to lower their cost of capital by "selling" goods that are otherwise difficult to trade in traditional markets for early-stage capital.

3. **Information**: To the extent that crowdfunding generates more information than traditional sources of early-stage capital (e.g., interest from other investors, ideas for product modifications and extensions from potential users), this information may increase funders' willingness to pay, thus lowering the cost of capital. For example, despite the negative reaction Pebble creator Eric Migicovsky received from traditional early-stage investors, the information conveyed via the crowdfunding community's strong response to his product validated his hypothesis that a wearable device with that particular design and set of features would have broad appeal. This information likely lowered his

cost of capital. However, in principle, the same effect could be achieved without crowdfunding by pre-selling the invention and then presenting the sales information when raising capital through traditional channels. Furthermore, if the additional information is negative relative to expectations, then this may work in the opposite direction and increase the cost of capital.

Finally, if crowdfunding increases competition in the supply of early-stage capital, then it may drive down the cost of capital across other channels for early-stage funding.

3.1.2 More information

In addition to the effect that more information may have on the cost of capital, it may also have other benefits for creators. For example, in the hybrid context where funders are also able to obtain early access to the product, crowdfunding serves as a particularly informative type of marketing research, which is often modeled as reducing the variance of post-launch demand (Lauga and Ofek, 2009). Like marketing research, crowdfunding that allows pre-buying provides an informative signal of post-launch demand. Unlike most marketing research, crowdfunding can include advanced selling, which provides incentive-compatible demand signals, thereby substantially increasing the quality of the signal (Ding, 2007). Thus, crowdfunding reduces the noise associated with assessing demand prior to the launch of a fundamentally new product. This can lead to an increase in the number of products launched and to a higher rate of success among launched products (Lauga and Ofek, 2009).

In addition to a market signal concerning the demand for a product (either real demand as reflected through pre-sales or predicted demand as reflected through equity sales), crowdfunding provides creators a mechanism through which they may receive input on their product or business plan from users and investors. This may facilitate the early development of an ecosystem around the product. In the case of the Pebble watch, for example, users have proposed software applications that they or others could write to take advantage of the unique features of the device, expanding the possibilities for it and increasing its value for new potential users. For instance, one person suggests:

> *"Pebble would be a perfect device for coxes and coaches in rowing. I've seen many a cox risk his iPhone by taking it out to time races and such, and sooner or later there's a water issue. It's a rough and wet environment out there. Very hard on phones, but perfect for Pebble! Pebble would be able to connect to a hidden and protected iPhone, relaying stroke rate, timings, and even (if the messaging limitations could be circumvented somehow) delivering instructions from a coach on shore."*

Similarly, the community of potential users also weighed in on other product features, such as the need to include support for Bluetooth 4.0. The creator responds:

> *"Dear Kickstarter backers... Today, we'd like to announce that your enthusiasm has helped convince us to move the entire Pebble roadmap forward and bring you a brand new feature. Bluetooth 4.0 - inside every Pebble! All Pebble watches will support Bluetooth 2.1 (as before) as well as Bluetooth 4.0 (Low Energy)."*

Although the benefits of user-driven innovation are well documented (von Hippel, 1998; Baldwin, Hienerth, and von Hippel, 2006; Chatterji and Fabrizio, 2011), crowdfunding platforms allow creators to engage potential users in the ideation and design of a product even before it has been produced. However, although this information may be valuable to the creators since it may help them develop products that better match the needs of future users, it is an open question whether the feedback from funders is informative about the wider market.

3.2 Funder Incentives

Heterogeneous in their motivations, funders engage in crowdfunding for at least five distinct incentives. These incentives include:

1. **Access to investment opportunities**: This applies to equity crowdfunding only. Traditional mechanisms for funding early-stage ventures typically restrict funders to local investment opportunities. Furthermore, regulations have until recently restricted most non-family and friend investment opportunities to accredited investors. Gubler (2013) describes crowdfunding as "giving ordinary investors the opportunity to get in on the ground floor of the next big idea."

2. **Early access to new products**: To the extent that hybrid crowdfunding models enable creators to bundle equity with early access, pre-buying may play an even greater role in the crowdfunding process. Non-equity crowdfunding demonstrates a perhaps surprising level of demand for early access to new products by unknown creators. The Pebble watch is again illustrative. There may be benefits to enabling product enthusiasts to be early shareholders since this would align their incentives with their means to enhance the value of the company.

3. **Community participation**: For many funders, investing on a crowdfunding platform is an inherently social activity, and they commit capital partly to obtain preferential access to the creator (e.g., updates, direct communication), which they value. They also derive consumption value from the feeling of being part of the entrepreneurial initiative (Schwienbacher and Larralde, 2010) and among a select group of early adopters.[14] Relatedly, some funders seem motivated to provide funding in return for recognition from the creator within the community.

[14] *"If I like the personality of the team, I may donate even if I don't intend to use the product myself. By donating to Fara I was able to live vicariously through the dev team."* http://www.wired.com/gamelife/2012/02/kickstarter-blindside/

4. **Support for a product, service, or idea**: Philanthropy plays a surprisingly significant role on the major crowdfunding platforms (e.g., Kickstarter, Indiegogo). Some funders support projects, including for-profit projects, without receiving a tangible reward and also do not participate in the associated online community. It is an open question whether this behavior will persist in the equity crowdfunding setting, but given the focus on new ventures with new products, it may.

5. **Formalization of contracts**: As in other settings, early investors on crowdfunding platforms are often family and friends who invest to support the entrepreneur (Agrawal, Catalini, and Goldfarb, 2011). Crowdfunding platforms act as an intermediary and formalize what would otherwise be informal finance. In this way, they improve on the financial contracts between family and friends by balancing the benefits and costs of social relationships (Lee and Persson, 2012). Whereas family and friends can use social pressure to incentivize the entrepreneur, their presence also discourages ex-ante risk-taking in the absence of a formal contract, since failure could also negatively impact the social relationship.

3.3 Platform Incentives

Crowdfunding platforms are predominantly for-profit businesses. Most employ a revenue model based on a transaction fee for successful projects, typically 4-5% of the total funding amount. As such, their objective is to maximize the number and size of successful projects. This requires attracting a large community of funders and creators as well as designing the market to attract high-quality projects, reduce fraud, and facilitate efficient matching between ideas and capital (e.g., by increasing the degree of disclosure by the entrepreneurs and allowing for effective search on the side of the funders). Crowdfunding platforms also have an incentive to attract projects that can generate a disproportionate share of media attention, because they both expand the existing community of funders (further increasing network effects) and allow the platform to expand into new categories (Kain, 2012).[15]

3.4 Disincentives for Creators

Although the incentives to use crowdfunding are compelling for some creators, crowdfunding also presents certain challenges. Perhaps the greatest of these is the disclosure requirement. Other sources of funding, like home-equity loans, friends and family members, and angel investors, allow creators to keep their innovation secret from the general public, including competitors, prior to selling their product or service. However, crowdfunding requires creators to disclose their innovations in a public forum. The disincentive is strongest for those creators who are most worried about imitation, especially during the period between raising capital and launching their product, when the difference between crowdfunding and other sources of capital in terms of disclosure risk is most severe.

In addition to the risk of disclosing too much information to competitors, this requirement may have negative repercussions on intellectual property protection (patentability) and on bargaining with potential suppliers. For example:

> *"Quest did not have contracts already in place before he went on Kickstarter - a novice mistake. Once the Hanfree was funded, Quest says, he began contracting with accessories manufacturers in China, Singapore, and Los Angeles. But because those manufacturers were able to see precisely how much money Quest had raised on Kickstarter, Quest says they gained too much leverage in negotiations, chipping away at the product's margins. It soon became too expensive to create the product with the funds raised."* (Markowitz, 2013)

The disclosure risk is accentuated in the equity crowdfunding setting since creators must

[15] AngelList does not have an explicit revenue model at the time of this writing. Recognizing the critical role of network effects in this setting, the company appears focused on building its user base at present.

disclose their plans for the company (e.g., strategy, key employees, customers, costs) in addition to their new product or service.

A second challenge comes from the opportunity cost of raising capital from "the crowd" rather than professional investors. Angel investors and VCs, for example, often bring additional value to the company, such as industry knowledge, relationships, and status (Hsu, 2004). Not only are non-professional crowdfunders less likely to bring these benefits, they are also less likely to make the effort to confer these benefits to the creator (if they could) because the returns for doing so are much lower given their typically much smaller level of investment.

Investor management presents another challenge. Because crowdfunders generally fund in smaller amounts than, say, angel investors, more investors are required to raise a given amount of capital. Investor management therefore may be significantly more costly due to the sheer number of funders who need to be managed. The process can be particularly daunting as the number of investors rises. In the case of the Pebble watch, as of March 2013, the team had delivered 34 detailed updates about the software and manufacturing of the product and received about 14,000 comments from the Kickstarter community.[16] Moreover, whenever a project fails to meet a deadline or expectations, funders typically demand increasing levels of attention. Although such interaction allows creators to collect feedback, it also diverts resources and time from execution. Max Salzberg, who unexpectedly raised $200K on Kickstarter (from a $10K initial target) to develop an open-source alternative to Facebook, described his team's experience as *"so consumed with things like answering e-mails and making T-shirts for their contributors that they had little time to build the software"* (Wortham, 2012).

Furthermore, since creators have no control over who funds their projects, they have no way to prevent funders with differing visions and strong personalities from joining and

[16] http://www.kickstarter.com/projects/597507018/pebble-e-paper-watch-for-iphone-and-android/posts

adversely affecting the community's dialogue.[17] Furthermore, in the case of equity crowdfunding, creators may find it difficult to raise follow-on financing with an "unorthodox cap table" that includes a large number of dispersed small investors. However, platforms will likely recognize this risk and structure investments in such a way as to minimize this problem (e.g., aggregate investors in a GP/LP-type structure). In the case of AngelList, for example, investments are *"pooled into a fund created and managed by SecondMarket which, in turn, invests in the startup. Only the fund is listed on the startup's cap table - the individual investors in the fund are not."*[18]

In summary, creators who incur greater-than-average costs from disclosure and/or derive greater-than-average benefit from professional investors above and beyond access to their capital will be less likely to seek capital through crowdfunding.

3.5 Disincentives for Funders

Funders face three primary disincentives: creator incompetence, fraud, and project risk. All three are exacerbated by the particularly high degree of information asymmetry associated with equity-based crowdfunding in an environment with minimal oversight and regulation (i.e., funders have much less information than creators). We describe each below.

1. **Creator Incompetence** - To date, funders on crowdfunding platforms have been relatively optimistic about the ability of creators to deliver on their promises. As more projects successfully raise capital and then fail to meet milestones, platforms have realized that it is in their interest to recalibrate the expectations of the community and have thus increased disclosure requirements for creators.[19] However, creators often have

[17] *"Aside from raising the money, it really is an exercise in engaging with your fans and having a conversation with them and getting them involved."* http://www.npr.org/blogs/therecord/2012/11/23/165658174/how-much-does-crowdfunding-cost-musicians

[18] https://angel.co/help/invest

[19] http://www.kickstarter.com/blog/is-lateness-failure and http://www.kickstarter.com/blog/kickstarter-is-not-a-store

little experience in building a product and dealing with logistics and suppliers. Projects that exceed their funding goal by large amounts often deliver late (if at all), since they are unable to adjust to demand (Pepitone, 2012). Delays can be substantial: In a study of the design and technology categories on Kickstarter, out of 247 successful projects that promised to deliver goods, more than 50% were delayed, and the average delay was more than two months (Mollick, 2012). The issue is so prevalent that Kickstarter recently started to tighten its requirements and reject an increasing number of projects, in particular if they involve a hardware component (Hurst, 2012). This change has prompted an increasing degree of platform shopping, with some of the more uncertain projects landing on other platforms.

2. **Fraud** - Inexperienced and overly optimistic investors may not only channel capital towards bad projects but also subject themselves to outright fraud. It is relatively easy to use false information to craft fraudulent pages that look like authentic fundraising campaigns. While platforms try to filter out such cases of manipulation, crowdfunding may become an appealing target for professional criminals. Furthermore, because investments are small, the risk is exacerbated by weak individual-level incentives to perform due diligence. To the extent that the cost of performing due diligence is high and the individual benefit low, the crowdfunding community may systematically underinvest in due diligence; instead, funders may free-ride on the investment decisions of others, which is feasible to do since funding information is public and funders usually cannot be excluded. Moreover, relative to platforms such as eBay and Airbnb, where sellers have an incentive to build a reputation to signal against fraud, the lack of repeated interaction over a short period of time increases the potential for fraud.

3. **Project Risk** - Early-stage projects and ventures are inherently risky. In other words, there is a significant chance of failure. Many sources of potential failure exist above

and beyond creator incompetence and fraud. Although funders are able to incorporate risk into their investment decisions, information asymmetry (i.e., creators have more information about risks than funders) may significantly increase the cost of these risks to investors.

The disclosure risk faced by creators and all three risks faced by funders are predicated on information asymmetry between creators and funders. In the next section, we describe how information asymmetry may lead to market failure and thus stifle the potential of crowdfunding to improve social welfare through gains from trade between creators and funders. Then, in the following section, we discuss potential solutions to these market failures.

4 Market Failure

Creators almost always have more information than funders about their projects or ventures. However, the information asymmetry problem is exacerbated in the case of early-stage ventures raising capital in a lightly regulated environment where funders are remote and have limited opportunity to perform due diligence in person with the creator. This leads to the three problems for funders described in the prior section (incompetence, fraud, project risk). These problems potentially lead, in turn, to market failure. In other words, value-creating transactions between creators and funders (capital in exchange for equity or other rewards) are not completed due to the information problem.

For example, on a crowdfunding platform, it is particularly difficult for funders to assess the true ability of the creator or the underlying quality of the project or venture. Funders may discount the value of ventures on the platform as a result. If so, then high-quality ventures will avoid raising capital on the platform because they cannot achieve a "fair" price for their equity in that forum. In turn, the platform tends towards a suboptimal equilibrium where only low-quality ventures use it for funding. In other words, the market fails to facilitate welfare-enhancing transactions between high-quality creators and funders. This is a form of adverse selection.

Furthermore, the imbalance between the two sides of the market is not limited to ex-ante information about creator and idea quality but is also due to the funders' ex-post inability to induce effort on the side of the creator. Historically, the "crowdfunding contract" is based on goodwill and offers limited tools to funders once they commit their capital (that is, when the fundraising is closed). The creator may behave in a short-term opportunistic manner and not exert the level of effort that was implied at the outset. This is a form of moral hazard. The most extreme example of this is outright fraud. Anticipating the potential for this type of behavior, funders may be deterred from allocating capital in this setting, leading to market failure.

Finally, the market may fail due to a collective action problem. Since funding information is public and investment levels are low, which limits the potential upside benefits from investing, funders may free-ride on the due diligence efforts of others by waiting to observe their funding decisions. To the extent that all funders take this approach, the market will fail as everyone waits and nobody invests.

5 Market Design

The rules, technical features, and cultural norms established by individual platforms, along with overall industry regulations, will shape the behavior of creators and funders and ultimately determine the extent to which the market for crowdfunding operates efficiently or succumbs to market failures. Here, we describe four broad categories of market design mechanisms that have been deployed in non-equity crowdfunding or other online market settings and may be effective in reducing information-related market failures in equity crowdfunding: 1) reputation signaling, 2) rules and regulation, 3) crowd due diligence, and 4) provision point mechanism. The first three potentially reduce the information asymmetry between creators and funders (helping overcome both adverse selection and moral hazard), and the fourth may diminish the collective action problem. We describe each below.

5.1 Reputation signaling

Traditional markets for the financing of early-stage creative projects or ventures rely heavily on due diligence predicated on face-to-face interactions and personal relationships. In the crowdfunding setting, creators disclose as much information as they wish and then rely on an ethos of "trust me." Market design may influence the efficacy of a "trust me" environment by facilitating markets for reputation. In other words, in crowdfunding markets, as in many other online markets, reputation and trust are particularly important. Cabral (2012, p. 344) emphasizes the important role of reputation as a mechanism for establishing trust to address the risk of fraud in online transactions: *"While there are various mechanisms to deal with fraud, reputation is one of the best candidates - and arguably one of the more effective ones."* Designers of online markets have developed many mechanisms for establishing trust through reputation. Broadly, these can be divided into three types of tools: 1) quality signals, 2) feedback systems, and 3) trustworthy intermediaries.

1. **Quality signals** - First, and perhaps most simply, participants in online marketplaces can provide credible signals of quality by leveraging brand reputation. Waldfogel and Chen (2006) demonstrate the importance of brands in signaling quality in online marketplaces. Importantly, they show that as information becomes more accessible, the importance of brands diminishes. Lewis (2011) further examines the role of information access and shows that the voluntary disclosure of private information increases the prices of used cars on eBay. There are other ways to signal quality, even if product information cannot be credibly communicated. For example, Roberts (2011) shows that

warrantees provide a credible quality signal, and Elfenbein, Fisman, and McManus (2012) show that tying charitable donations to online auctions seems to provide an informative quality signal. Patents may also serve as a signal of quality (Häussler, Harhoff and Müller, 2012), in particular during earlier stages of financing and when information asymmetry is likely to be high (Hsu and Ziedonis, 2013). Similarly, VCs often consider previous successful experiences by the entrepreneur, senior executives on the founding team, and founders with doctoral degrees as useful signals of quality (Hsu, 2007). Finally, in the crowdfunding context, the level of education (e.g., share of executives with an MBA degree), has been shown to be positively correlated with successful fundraising (Ahlers et al, 2012).

2. **Feedback systems** - Many online marketplaces provide users a mechanism for submitting feedback that contributes to building a reputation for individual buyers and sellers. The most basic versions of these mechanisms simply report sales information. Tucker and Zhang (2012) demonstrate that reporting sales information has important effects on choices. It gives a signal similar to the social network mechanism currently emphasized in crowdfunding. More sophisticated mechanisms rely on ratings systems to provide reputation information. This literature emphasizes the eBay ratings system, but the ideas are more widely applicable (Cabral, 2012). The idea behind this mechanism is to allow market participants to rate their experience after a transaction. For example, eBay's current mechanism has buyers rating sellers. If sellers generally provide a high-quality experience, then their ratings will be good. New buyers will see the high ratings, place further trust in the seller, and be willing to pay a higher price. A long literature demonstrates the importance of seller (and buyer) ratings to outcomes on eBay and other platforms (reviewed in Cabral, 2012 and Cabral and Hortacsu, 2010). However, creators on crowdfunding platforms are less likely to repeatedly raise capital over short periods of time, reducing the frequency with which the com-

munity can rate them. To avoid this problem and still derive value from an online reputation system, a potential solution is for creators to divide larger projects into smaller milestones (not unlike staged financing in traditional settings, used to reduce funder risk).

3. **Trustworthy intermediaries** - Third-party intermediaries that provide quality signals and facilitate trust between marketplace participants exist in a variety of markets. For example, Jin and Kato (2007) demonstrate the importance of third-party quality certification in the thriving online market for collectibles where, for instance, agencies certify the quality of sports cards. Rather than simply saying "high quality," a seller can post a certified and verifiable quality level, providing buyers a reliable signal of the product's quality. Since it is in the certification agencies' financial interest to provide honest ratings, both buyers and sellers trust them. This phenomenon is not unique to third-party certification. Stanton and Thomas (2012) examine independent workers in online labor markets who form teams (that look like firms) in order to leverage the reputation of established workers to improve job opportunities for new workers. Funders also increasingly use Facebook and other large social networks such as Twitter and Linkedin to validate user profiles when moral hazard is a concern.

In summary, reputation can be a powerful antidote to information asymmetry and moral hazard problems. Users on both sides of the market can take multiple approaches to develop their reputation, such as quality signals, feedback systems, and trustworthy intermediaries. However, although these mechanisms have been quite effective in other online markets, they may require adaptation for the particular characteristics of equity crowdfunding.

5.2 Rules and Regulations

A second way in which markets can overcome information-related market failures is through regulations and rules, both at the platform level and the government level.

5.2.1 Platform rules

Crowdfunding platforms continue to adapt their rules in response to user behavior in order to maximize transaction volume. For example, Kickstarter recently allocated additional resources to detect fraud, implying that its management believes the benefits of doing so (lower risk for funders) outweigh the costs (increased monitoring costs for the platform and higher disclosure burden on creators). However, Kickstarter made it clear that ultimately it is still the funders' role to perform due diligence on the competence of creators:

> *"We've also allocated more staff to trust and safety. We look into projects reported by our community for guidelines violations and suspicious activity, and we take action when necessary. These efforts are focused on fraud and acceptable uses of Kickstarter, not a creator's ability to complete a project and fulfill. On Kickstarter, backers ultimately decide the validity and worthiness of a project by whether they decide to fund it."*[20]

Kickstarter also has taken steps to better set expectations for both creators and funders:

> *"As Kickstarter has grown, we've made changes to improve accountability and fulfillment. In August 2011 we began requiring creators to list an "Estimated Delivery Date" for all rewards. This was done to make creators think hard about when they could deliver, and to underline that Kickstarter is not a traditional shopping experience."*

[20] http://www.kickstarter.com/help/faq/kickstarter%20basics

Finally, recognizing that some types of projects are more prone to disappointment than others, the platform increased the burden of disclosure on creators of design and technology products:

> *"In May 2012 we added additional guidelines and requirements for Product Design and Technology projects. These include requiring creators to provide information about their background and experience, a manufacturing plan (for hardware projects), and a functional prototype. We made this change to ensure that creators have done their research before launching and backers have sufficient information when deciding whether to back these projects."*

Given platforms' incentives to maximize successful funding campaigns, we anticipate that platforms will continually modify their regulations and monitoring as well as react to user behavior in search of striking the appropriate balance between minimizing the disclosure and administrative burdens on creators while maximizing the information available to funders about quality, effort, and risk of fraud.

5.2.2 Industry regulation

The JOBS Act requires the SEC to establish rules for the equity crowdfunding industry. Initially, these rules were to be released in early 2013. However, as of this writing, they have not yet been announced. Overall, the primary motivation for these rules is investor protection. While many potential risks to investors may be addressed in these regulations, we draw attention to three major ones. First, funders likely will be limited in their level of exposure to any single crowdfunding investment. Specifically, the Crowdfund Act (S.2190[21]) stipulates that funders may not invest more than 10% of their annual income or net worth and are capped at $100,000 in any single investment opportunity (Sec.2.a.B.ii). Furthermore,

[21] http://beta.congress.gov/bill/112th-congress/senate-bill/2190/text

if either their income or net worth is less than \$100,000, then they may only invest up to 5% of the lesser of their income or net worth up to a maximum of \$2,000 (Sec.2.a.B.i).

Second, platforms must register with the SEC, educate investors (e.g., level of risk, risk of illiquidity), take steps to reduce the risk of fraud (e.g., by performing history checks on officers and directors of the venture or anyone holding more than 20% of the outstanding company equity), and verify that investors have not exceeded their yearly investment limits across all platforms (Sec.4.A.a). Recently, the SEC informed two platforms (AngelList and FundersClub[22]) that the Commission would not recommend enforcement action against them as they begin to provide equity crowdfunding to accredited investors. Whereas this does not allow the general public to invest, it is a first step towards approving additional intermediaries and ultimately implementing the Crowdfund Act.

Third, firms will be limited in the amount of capital they can raise through crowdfunding (\$1 million cap) and will be subject to non-trivial disclosure regulations. As the North American Securities Administrators Association points out: *"The crowdfunding exemption is only an exemption from securities law registration requirements. It does not change the securities law disclosure requirements. The requirements of federal and state securities laws regarding disclosures, including disclosures of all material facts and risks to investors, remains in place."*[23]

Finally, the Crowdfund Act specifies the use of a financing threshold to prevent creators from taking capital from funders despite not being able to raise enough to do what they have described they will do, which we discuss below in Section 5.4 (provision point mechanism).

[22] http://techcrunch.com/2013/03/31/sec-angellist-greenlight/
[23] http://www.nasaa.org/13676/small-business-advisory-crowdfunding/

5.3 Crowd Due Diligence

A third way that markets can overcome information-related failures is through crowd due diligence. Relative to traditional investors, individual crowdfunders are disadvantaged in terms of due diligence because they typically have a much smaller stake and therefore less incentive to spend time and money investigating creators. This yields a potentially severe free-rider problem. At the same time, typically many more crowdfunders are reviewing any given project or venture than in traditional settings, such that a greater number of individuals and variety of perspectives are available to notice something amiss. For example, only two days and approximately $4K into an $80K fundraising campaign for an action video game on Kickstarter, two potential investors flagged the project as fraudulent and notified others:

> *"The concept art at http://www.mythicthegame.com/concept-art.html was blatantly stolen from two different people in the competition at http://conceptart.org/forums/showpost.php and the character art was stolen from this guy http://genzoman.deviantart.com/ [...] and the facebook page which recently went down had pictures of offices like this: http://i.imgur.com/uTCBT.png which were blatantly stolen from Burton Design group [...] In summary, this is a blatant scam."*[24]

In other settings, the crowd has produced mixed results in terms of monitoring and due diligence. For example, eBay partly relies on the community to detect fraud, though it complements this with considerable investments in data analytics, buyer protection through PayPal, and platform regulation.[25] Wikipedia relies on its most active community members to protect entries from vandalism.[26] Volunteers and software bots track new pages for

[24] http://www.kickstarter.com/projects/273246798/mythic-the-story-of-gods-and-men/comments

[25] http://www.fastcompany.com/46858/how-ebay-fights-fraud, https://www.quora.com/Fraud-Detection/What-techniques-and-algorithms-does-eBay-use-to-prevent-fraud-among-its-buyers-and-sellers

[26] http://en.wikipedia.org/wiki/Wikipedia:Counter-Vandalism_Unit

copyright violations, spam, and vandalism as well as recent changes to entries of particular interest. Pages can also be placed under different levels of protection (administrators can only edit entries under full protection).[27]

At the same time, the bottom-up process of revisions by the community is far from perfect: Over time, it has become increasingly difficult for new Wikipedia editors to have their contributions accepted (Halfaker et al., 2012). Moreover, most of the process of convergence towards a neutral point of view seems to be driven more by the introduction of new articles with a different slant than by the reduction of slant in the original pages (Greenstein and Zhu, 2012).

Furthermore, in the context of funding, the crowd is subject to herding behavior. Much of the existing research on crowdfunding has emphasized that funders rely heavily on accumulated capital as a signal of quality (Agrawal, Catalini, and Goldfarb, 2011; Zhang and Liu, 2012; Burtch, Ghose, and Wattal, 2011; Freedman and Jin, 2011). Thus, the sequential nature of investment has the potential of triggering an information cascade. This path dependence suggests that funding success will only reflect underlying project quality if early funders do a careful job screening projects.

Herding behavior can be efficient under certain conditions but lead to suboptimal outcomes in others. For example, Zhang and Liu (2012) provide preliminary evidence that accumulated capital is a credible signal of quality in a donation-based, online lending setting. They argue for "rational herding" as investors use the decisions of others as an informative signal of project quality. Freedman and Jin (2008) show the usefulness of social networks in overcoming asymmetric information in online lending markets. Similarly, using data from a journalism crowdfunding platform, Burtch, Ghose, and Wattal (2013) demonstrate that the decisions of others provide an informative signal of quality (and hence also provide a marketing function for the final product).

[27] http://en.wikipedia.org/wiki/Wikipedia:FULL#Full_protection

The information conferred by early funders in Agrawal, Catalini and Goldfarb (2011) is less obvious. Although this study reports that the first few thousand dollars usually required weeks to raise while accumulating the last few thousand often took just a few hours (perhaps reflecting due diligence by early investors), the data reveals that early funds often come disproportionately from family and friends of creators. On the one hand, funding decisions by family and friends may confer useful information given the knowledge these people have about the creators (e.g., an inability to raise funds from family and friends may send a particularly important signal). On the other hand, the variation across creators in funding raised from family and friends may also reflect the wealth of creators' social networks rather than the underlying quality of their projects or companies.

Furthermore, the information cascade may be manipulated. At the extreme, creators may exploit the path-dependent nature of investment by injecting capital in the early stages, thereby inducing an information cascade, and then withdrawing their capital before the fundraising is closed. Obviously, this problem may be minimized by thoughtful rules and features implemented by platforms. Overall, the evidence suggests that information from the crowd reflected in accumulated capital can be an informative, but noisy, signal of quality.

Overall, crowd due diligence serves as a complement to other mechanisms in order to enable many online platforms to thrive despite substantial information asymmetries in the absence of face-to-face interaction or trusted intermediaries.

5.4 Provision Point Mechanism

Reputation signaling, rules and regulations, and crowd due diligence all help to overcome issues related to asymmetric information between creators and funders and opportunistic behavior by creators after they raise capital. In particular, these mechanisms provide information about quality, create incentives for effort, and minimize the potential for fraud.

As described above, another source of information-related market failure in crowdfunding is coordination failure among funders due to the free-rider problem. Precisely because of information cascades described above in our discussion of crowd due diligence, where early funders generate a valuable (although noisy) signal for later ones through accumulated capital, all investors have an incentive to wait and see what others do.

Almost all non-equity crowdfunding platforms have applied some form of a "provision point mechanism" (Bagnoli and Lipman, 1989) to address this problem. Specifically, the creator only receives the funds if a funding threshold level is reached (or surpassed) within a certain period of time. This particular type of contract is a solution to a classic coordination and free-riding problem that arises in the provision of public goods: Whereas a group of individuals may be better off by a project being funded, if ex-post it is impossible to exclude non-funders from benefiting from it, ex-ante individuals rationally decide to wait, making fundraising impossible. By implementing a provision point mechanism, crowdfunding platforms eliminate the risk to funders of providing funds for a project that is unable to raise enough capital to be viable. Although most existing platforms have voluntarily implemented some form of a provision point mechanism, the Crowdfund Act indicates that this market design feature will likely be mandated, as intermediaries will need to:

> *"ensure that all offering proceeds are only provided to the issuer when the aggregate capital raised from all investors is equal to or greater than a target offering amount, and allow all investors to cancel their commitments to invest, as the Commission shall, by rule, determine appropriate." (Sec. 4A.a.7)*[28]

6 Open Questions

On the eve of the opening of a new marketplace facilitating the exchange of capital for equity in small new ventures - which some experts describe as "transformational" for national

[28]http://beta.congress.gov/bill/112th-congress/senate-bill/2190/text

competitiveness and prosperity and others as "disastrous" for inexperienced investors and thus society - the list of open questions is large. However, from the perspective of this volume's focus, two questions stand above the rest. The first concerns social welfare and the second innovation.

At the most fundamental level, policy support for crowdfunding exemptions in the JOBS Act is predicated on the assumption that equity crowdfunding will have a net positive effect on social welfare.[29] But will it? How might this occur? Furthermore, crowdfunding may enhance the rate and direction of innovation, which could benefit welfare by improving private returns and increasing socially beneficial externalities. How and why might crowdfunding influence innovation this way? We turn now to these two related policy questions.

6.1 Social welfare

Crowdfunding will almost surely generate social loss by relaxing traditional regulations associated with the sale of securities (e.g., enabling new forms of fraudulent activity as well as new ways for inexperienced or reckless individuals to make poor allocation decisions for their savings). To what extent will the social gains from crowdfunding outweigh these losses?

Social benefits will be of two types. First, crowdfunding will generate private gains from trade. Creators and funders freely exchange equity for cash only if the expected benefit to each is positive (allowing for side payments and consumption value).

Second, crowdfunding will generate additional gains associated with benefits to others that result from the trade. In particular, given crowdfunding's focus on early-stage ventures, many of which may be innovative as has been the case in non-equity crowdfunding, there may be significant spillover externalities of the type commonly associated with innovation. For example, crowdfunding facilitated an initially significant production run of the Pebble

[29] http://www.whitehouse.gov/the-press-office/2012/04/05/president-obama-sign-jumpstart-our-business-startups-jobs-act, http://majorityleader.gov/newsroom/2012/02/house-republicans-unveil-the-jobs-act-to-spur-small-businesses-and-startups.html

watch, which embodies novel ideas that others may build on. Some of those ideas may be patented, such that follow-on work privately benefits the inventor of the Pebble by way of license fees, whereas other ideas will be freely usable by others and thus enhance the productivity of subsequent innovators - a social gain. For example, in the case of the Pebble, the inventor produced a software development kit (SDK) such that follow-on inventors can explicitly develop new products for this wrist-based platform, potentially enhancing both private and social gains.

6.2 Innovation

Will equity crowdfunding influence the rate and direction of innovation? In other words, to what extent will it affect the number as well as the types of innovations that are funded? Crowdfunding may influence the rate of innovation by increasing the total amount of funding available to innovative new ventures. At the same time, it may influence the direction of innovation by changing the way in which capital is allocated to innovative new ventures. This could result from, for example, the crowd having access to different information than traditional sources of capital,[30] having a different objective,[31] or having different opportunities to mitigate risk.[32] It is possible that crowdfunding only changes the rate, but not the direction, of innovation by increasing the total amount of funding without influencing the allocation algorithm.[33] Finally, crowdfunding may not increase the rate or direction of innovation in a tangible way because the costs to funders are still too high (due to risk of

[30] For example, members of the crowd may have a relationship with the entrepreneur and/or a wider base of experience and industry insight than the local angel and VC communities.

[31] For example, the crowd may value the creation of a new product or service in addition to maximizing their financial return on investment.

[32] For example, since transaction costs are lower, the crowd is able to make smaller investments and thus is able to spread its capital over a greater number of projects than, say, a traditional friends-and-family seed or angel investment.

[33] For example, without crowdfunding, the top 100 ventures are financed, and with crowdfunding, the top 100 plus the next 10 are funded. In other words, the additional capital from crowdfunding is allocated at the margin towards the ventures that are next in line to be financed in the no-equity crowdfunding regime.

fraud, for example). Furthermore, even if crowdfunding does appeal to a large number of funders, it may simply substitute for other forms of funding, crowding them out such that neither the amount nor allocation of funding is affected.

6.2.1 Geographic distribution

One dimension on which we may expect crowdfunding to deviate from traditional funding is the spatial allocation of capital. Because transactions occur online rather than in person, factors that influence the geography of traditional forms of early-stage investments may be less important in the crowdfunding setting. Indeed, Agrawal, Catalini, and Goldfarb (2011) show that the localization bias in funding activity on Sellaband is virtually eliminated after controlling for social relationships (friends and family). Overall, funding is not localized: A full 86% of capital for successfully financed projects came from individuals who were more than 60 miles away from the creator, and the average distance between creators and funders was approximately 3,000 miles. Thus, it is plausible that crowdfunding may be particularly important as a mechanism to finance projects in regions that have disproportionately less access to financial capital relative to their stock of human capital. In other words, it seems plausible that the spatial distribution of crowdfunding capital may look quite different from that of traditional capital.

We use data from Kickstarter to provide some preliminary insights into this question. We find that crowdfunding capital follows a surprisingly similar geographic pattern to traditional funding. Our data contain every funded project between launch (June 2009) and October 2012. The data spans 27,403 projects totaling $293 million in 13 categories. We have information on the timing of financing and the location of the projects.

Figure 3 shows the relationship between the states in which Kickstarter-financed projects are based and other sources of funding. Figure 3a shows a strong correlation between state-level funding from the National Endowment for the Arts and funding for arts-related projects on Kickstarter (all in per capita terms). Figure 3b shows a strong correlation between state-level venture-capital financing (source: MoneyTree Report, 2009-2012[34]) and funding for technology projects on Kickstarter (though this correlation is weaker than for the arts). We interpret Figure 3 as suggesting that so far non-equity crowdfunding does not appear to deviate significantly from the traditional geographic distribution of capital allocation. However, that may reflect the distribution of human capital and thus does not necessarily imply that crowdfunding is not financing different types of innovation.

Figure 4 maps the location of Kickstarter funding, with the darker coloring suggesting more funding for the state. We also list the top three states for each category. The overall pattern seems to be much the same as the scatter plots in Figure 3: New York and California dominate, and large, technology-intense states are darker in color. After New York and California, Tennessee is important for music and Illinois for publishing and theater.

It is important to note that, even if we did observe significant variation in the geographic distribution of capital between crowdfunding and traditional channels, this may be less salient for equity crowdfunding than what we observe in non-equity crowdfunding due to follow-on financing risk (Nanda and Rhodes-Kropf, 2013). Ventures that require up to \$1m in seed capital at first but whose business plans call for significantly more in the near future may find it difficult to raise even their initial capital through crowdfunding if they are located in regions that lack a sufficiently active market for follow-on capital. That is because funders may worry about the venture's ability to raise subsequent capital due to their location, also recognizing that ventures are restricted from raising more than \$1m per year via crowdfunding.

[34]The MoneyTree Report is published by PricewaterhouseCoopers and the National Venture Capital Association, and is based on data from Thomson Reuters (https://www.pwcmoneytree.com/).

6.2.2 Substitution with regular sources of finance

Further preliminary evidence that crowdfunded projects are similar in terms of their spatial distribution to other forms of funded projects comes from an examination of substitution between sources of finance. Specifically, in Agrawal, Catalini, and Goldfarb (2013), we examine how changes in local (city-level) house prices correlate with changes in crowdfunding. Robinson (2012) shows that home-equity financing is an important source of funds for entrepreneurs. We show that the relative price and availability of these funds is related to the use of crowdfunding. Specifically, when house prices are higher (and home-equity financing is therefore more readily available), the use of crowdfunding falls. While this analysis is preliminary and does not completely control for the unobservable aspects of the strength of the local economy, it does suggest that, for some projects, crowdfunding may compete quite directly with regular sources of financing and therefore enable projects that are similar to those historically financed through traditional channels.

At the same time, we find a handful of exceptions. In particular, a careful look at the map (Figure 4) shows some perhaps surprising locations for crowdfunding. Minnesota is third in technology, North Carolina is third in food, and Massachusetts is third in fashion (Arizona is fourth). Crowdfunding therefore might also facilitate the funding of projects that transcend the specialization of a region and are more difficult to fund otherwise. Given the skewed distribution of outcomes associated with innovation, these "exceptions" may be economically important in the long run.

6.3 Future research

It will be years before we have the time series data required to fully address the empirical question of the impact of crowdfunding, both equity-based and non-equity-based, on welfare and innovation. For example, the key empirical challenge in estimating the causal impact of crowdfunding on the number and type of projects or ventures funded is the identification of the ventures that would not have been funded in their absence. Ideally, we would like to compare all ventures funded in a world without crowdfunding to one with (holding everything else constant).

Unfortunately, such a counterfactual is very hard to find. Many platforms accept funds and projects from any country, and the rate of adoption of crowdfunding across different geographic regions will not be exogenous to their existing level and type of inventive activity. However, if, for example, the rules set by the SEC progressively allow for projects that satisfy different requirements to access equity crowdfunding, then the variation in timing of adoption by different categories of projects (e.g., size, industry, degree of risk) could be exploited to understand if crowdfunding has a comparative advantage in funding more versus different ideas using a regression discontinuity approach.

7 Conclusions

Although it is impossible to predict with certainty how equity crowdfunding will evolve, experimentation will surely play an important role. Crowdfunding platforms will compete on variations in market design, employing different rules for engagement and tools for reputation, crowd due diligence, and provision point mechanisms, among others. New markets for trusted intermediaries will likely emerge.

Despite the best efforts of policy makers and platform designers, there will surely be spectacular failures. Funders will lose significant sums, not only to fraud, but also to incompetent managers, bad ideas, and bad luck. Entrepreneurs will litigate their investors, and investors will litigate entrepreneurs. Ideas and intellectual property will be stolen due to early-stage public disclosure. The growing pains experienced by the equity-based crowdfunding industry will be even more dramatic and severe than in the non-equity setting. Throughout the mayhem, policy makers will be faced with the question of whether, in the long term, the benefit from the private gains from trade (cash for equity) as well as from the social gains due to spillovers and other externalities will outweigh these significant costs.

As usual, eventually, the market will likely solve many of its own problems through innovation. Just as the non-equity-based crowdfunding industry, without policy intervention, converged on the provision point mechanism as a now-standard feature in market design to reduce free-riding, fierce competition in the new equity-based setting will stimulate innovation and reduce market failure. At the same time, regulation surely will play an important role. Likely, the first iteration of industry rules and regulations, although carefully considered, will require many amendments as entrepreneurs and investors learn to interact in this new setting, platforms innovate, and cultures form.

Furthermore, the benefits from crowdfunding will not be uniformly distributed. Certain types of ventures will benefit more than others from this new form of finance. For example, the types of ventures that may disproportionately benefit include those with consumer products where the value proposition can be easily communicated via text and video and where the product is unique and not subject to easy imitation when publicly disclosed. Even still, these ventures may prefer to raise their funds from traditional sources unless the cost of capital is significantly lower or they are able to derive additional benefits from interacting with a crowd of heterogeneous, geographically dispersed funders.

Fortunately, since crowdfunding occurs online, many of the actions of entrepreneurs and investors are in digital form and thus leave a data trail. Venture characteristics, entrepreneurial traits, investor histories, investment decisions, platform-based communications, and many other features are in these data. Unlike other channels for early-stage capital but like other online markets, the data collected on participant behavior will be extensive (so-called "big data"). Crowdfunding data will provide an unprecedented window into early-stage equity investment activity. These data and the analyses they enable will be a valuable tool for policy makers and platform designers for addressing market failure through the adaptation of market design. This will enhance their ability to harness the upside potential of crowdfunding and realize the social gains from trade that may result from financing an important yet potentially undercapitalized sector of the economy.

8 Figures

Figure 1: Google Search Volume for "Crowdfunding" (100 represents peak search volume)

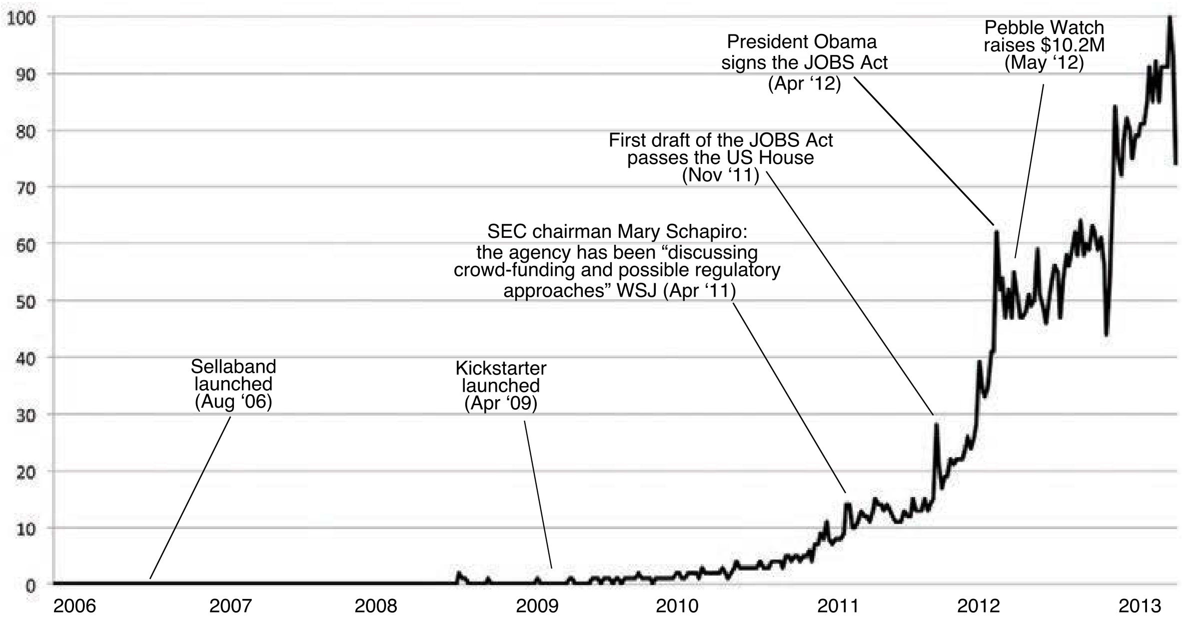


Figure 2: Total Capital Raised (thousands) on Kickstarter by Successful Projects between June 2009 and October 2012

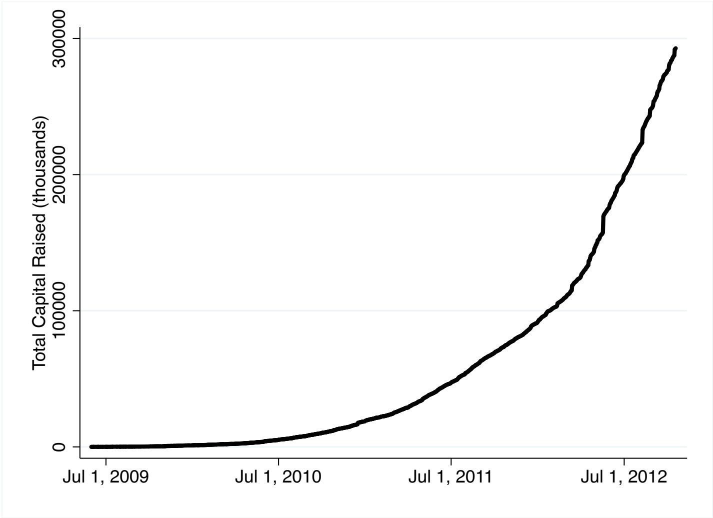
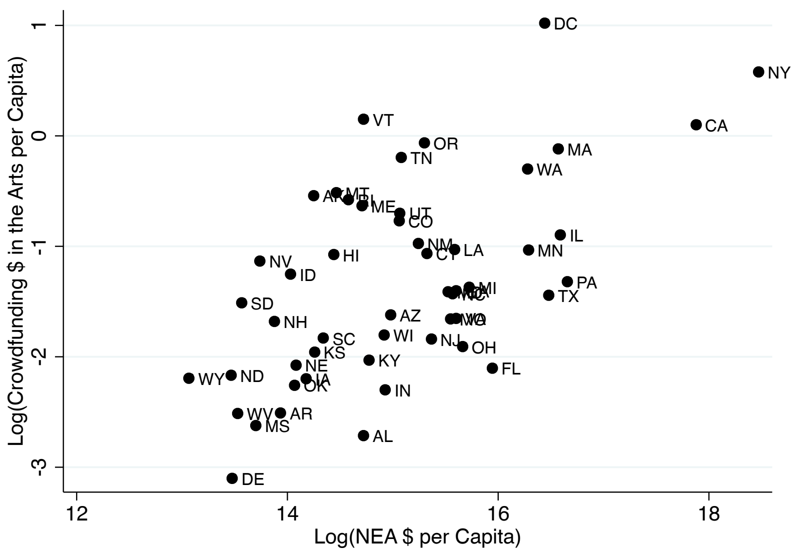
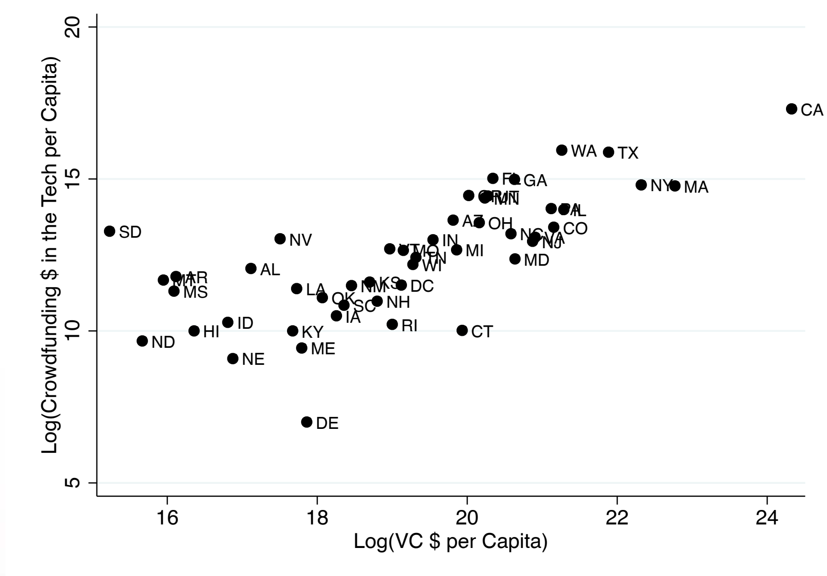


Figure 3: Kickstarter Funding versus Other Sources of Funding

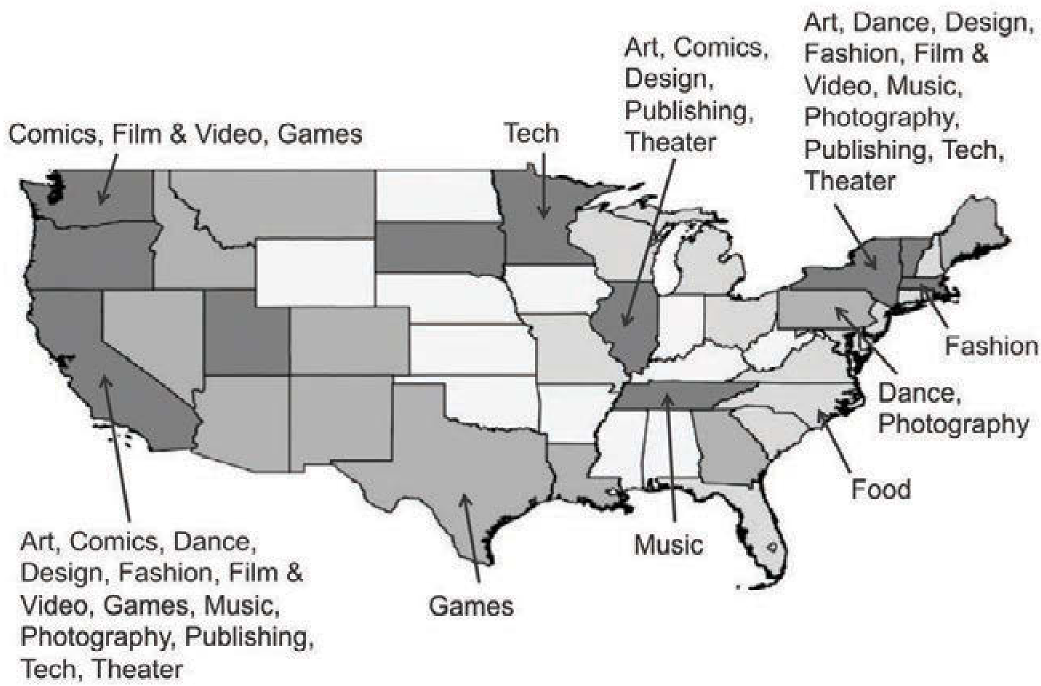


(a) Kickstarter Funding in the Arts per Capita by National Endowment for the Arts Grants per Capita, by State



(b) Kickstarter Funding in Technology per Capita by Venture Capital Investments per Capita, by State

Figure 4: Kickstarter Projects by State (darker colors have more financing)



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InteraXon looking for crowdfunding for Muse, a brainwave-sensor headband

Phys.org, October 24, 2012

InteraXon, a Toronto-based technology firm, has posted a funding campaign on Indiegogo, a crowd source funding site similar to Kickstarter, for a device it calls Muse. Muse is a headband device based on electroencephalography (EEG) sensor technology combined with a sophisticated smartphone app that allows the wearer's brainwaves to be monitored

Muse looks like a bent hair band: It's worn across the top of the forehead and over the ears and has sensors in both locations that monitor alpha (resting state) and beta (active state) brainwaves. The brainwaves are converted to a signal that is broadcast, via Bluetooth technology, to the user's smartphone. This signal is then displayed on the screen via InteraXon's custom app, the Integrated Brain Health system. The idea is that if people can see what their brains are doing, they can use this information to achieve goals such as improving memory or sharpening concentration skills. Future plans for Muse include use as a computer application-control device.

The company claims that Muse can be used to learn new ways to relax, recognize lapses in concentration, build self-confidence, and gain more control of one's thoughts, overall. Doing so, say developers, actually strengthens the brain. To help users meet such goals, the app includes a series of lessons and exercises designed to teach the user how to manipulate brain waves using visual feedback. Developers suggest using Muse will result in a "healthy" brain.

Read more at: http://phys.org/news/2012-10-interaxon-crowdfunding-muse-brainwave-sensor-headband.html#jCp

A big boost to brain sensing technology strikes a chord with global investors

TORONTO, Aug. 15, 2013 – InteraXon, the creators of Muse: the brain sensing headband and other brain-enabled experiences, announced today at the GROW2013 Conference it has raised $6 million in Series A financing from a number of prominent investors, including Horizons Ventures, OMERS Ventures, A-Grade Investments, ff Venture Capital, Felicis Ventures, and Bridge Builders Collaborative.

This new round of financing will enhance InteraXon's position as a leader in brainwave enabled devices, applications and experiences with a heavy focus on their first commercially available device, Muse—a six sensor brain sensing headband designed for every day use available in early 2014.

InteraXon will launch Muse with their Brain Health System, a platform including the Muse brain sensing headband and brain fitness application. The brain health app includes scientifically validated exercises that work with the real-time feedback sensed by the headband to help users enhance their cognitive skills and EQ. Stress management, focus, improved memory are just a few of the many benefits. This is one of several apps in the Muse pipeline InteraXon is developing to help people get the most out of the mental skills they already have and do more with their minds than they ever thought possible.

About InteraXon
Founded in 2007, InteraXon is a Toronto-based company and innovator in the emerging field of brainwave controlled technology, designing meaningful and transformational experiences from a levitating chair to a thought controlled beer tap. Over 30,000 people have experienced InteraXon's brain sensing experiences, and it continues to grow.

InteraXon has worked with top-tier packaged goods, transportation and tech companies, providing brainwave-enabled customer engagement programs and promotions. During the 2010 Vancouver Olympics, InteraXon allowed visitors to control the lights on Niagara Falls, the CN Tower and Canada's Parliament buildings with the power of their minds from over 2000 miles away.

Focused on making the technology accessible, affordable and an integral part of people's everyday lives, InteraXon is committed to bringing awareness and understanding to the scale and scope of possibilities within brain sensing technology and the impact it will have globally as it becomes more market-viable.

To learn more about InteraXon, go to http://www.InteraXon.ca or follow us on Twitter.

To learn more about Muse, go to http://www.findyourmuse.com or email community@interaxon.ca http://ffvc.com/blog/2013/10/11/pioneering-new-frontier-venture-capital

Pioneering a New Frontier for Venture Capital

By John Frankel on Oct. 11, 2013

It is a new era, and venture capital is at a crossroads. The old way of doing business is being challenged, and no more so than on the investing and fundraising sides. Over the next five years, the entire industry will be transformed, and everyone in the ecosystem will be affected. Some will lead, some will follow and some will fall by the wayside.

Funding platforms and tools such as AngelList and syndicates are clearly changing how entrepreneurs are raising capital. But what about venture capital firms, and why have smaller firms found it so challenging to raise capital? While it may be true that some can be unproven, have little or no track record, and often have little infrastructure, we believe that the biggest reason has been, until now, the age-old SEC ban on general solicitation. The ban has long hindered funds and firms from letting anyone know that they are raising capital, and from sharing their historical performance, infrastructure, and capabilities. As a result, capital has flowed to players with brand and ego, based on tales around pretty much anything other than return on capital (or even return of capital).

We believe that this must change. Someone has to be willing to be the first firm to step forward and be willing to share performance data, publicly announce that they are open to new investors (albeit only accredited investors) and share their story.

Today, we are taking that step: We are pleased to announce that ff Venture Capital is the **first institutional venture capital firm** to embrace the JOBS Act's lift of the ban on general solicitation and publicly announce that we are raising capital for our third fund, ff Rose Venture Capital Fund.

Why we're pioneering a new frontier for venture capital:

Transparency: The process of venture fundraising is hugely antiquated and has been stuck in the 17th century. Our team at ff Venture Capital is proud to bring much-needed transparency into an opaque process that has been dominated by closed "friends of friends" networks. With this move, we will leverage 21st century communications technologies to share with the world our story and mission. Providing this newfound transparency will be pivotal in attracting more investors to the cutting-edge technologies in which we invest that are shaping our world, at a time when just 5% of accredited investors in the United States are investing in startups and/or venture capital firms.

Creativity: Being the first at something is always exciting, daunting, and frankly, a little scary. There are always unintended consequences. However, we believe it is instrumental for us to be at the forefront of this regulatory change. After all, we invest in disruptive, game-changing companies, and firmly believe that every industry has the capability to be disrupted. Thus, it only makes sense that our own industry (venture capital and financial services as a whole) is getting disrupted as well. We wholeheartedly support the reinvention that comes along with it. We look forward to providing guidance and best practices to early-stage venture capital firms and entrepreneurs raising capital, who decide to embark on the journey of making their fundraising process more transparent.

Passion: Our fundamental mission at ff Venture Capital is to enable visionaries and champion entrepreneurs who are changing the way millions of people behave. We also believe that the initial checks that investors write are truly vital to innovation. Being able to tell the world about our mission is beneficial for the companies we support, and advances job creation, entrepreneurship and American global competitiveness.

Results: Individual angels and smaller VC firms write the first checks for entrepreneurs and earn the highest returns. However, these small funds spend far too much time raising capital. Bigger, later stage firms can invest large amounts of capital into companies once the companies have proven their business models, but these firms end up with far worse returns. Especially because of this, it is unbelievable that 48% of the capital that the VC industry attracted in 2012 went to just 10 large venture firms, in spite of the fact that no VC fund larger than $1 billion returned more than twice its invested capital after fees, according to the Kauffman Foundation.

Our Results: We generate returns, whether it's viewed from a one, three, five or ten year basis. We have consistently generated a gross IRR on invested capital in excess of 30%, in a world where the average ten-year returns for venture capital firms is in the single digits.

It is a fascinating time for venture capital and angel investing. We may be in a low-growth world, but we are extremely fortunate to finance the growth side of the creative destruction we are witnessing all around us. Most importantly, we look forward to continuing to fulfill our mission of championing entrepreneurs and game-changers for years to come.

ff Rose will close to new investors before the end of November. So, now, I can legally say that if you are an accredited investor and are intrigued to find out more, we invite you to connect with us at invest@ffvc.com.

Please see ffvc.com/invest for more details.

Article Forbes

http://www.forbes.com/sites/davidteten/2013/10/15/ff-venture-capital-is-first-vc-fund-to-raise-capital-under-the-jobs-act

Fortune

http://finance.fortune.cnn.com/2013/10/11/the-first-vc-firm-to-generally-solicit/?utm_source=twitterfeed&utm_medium=twitter

Forbes

David Teten, Contributor
I cover venture capital, angel investing and entrepreneurship.

ENTREPRENEURS 10/15/2013 @ 9:54PM |814 views

ff Venture Capital Is First VC Fund To Raise Capital Under The JOBS Act

ff Venture Capital, where I am a Partner, has consistently generated a gross IRR on invested capital in excess of 30%. We've done that in a world where the average ten-year returns for venture capital firms are in the single digits. Historically we couldn't say this in a public setting; now we can.

Software is eating every industry, including the entrepreneurial ecosystem itself. Funding platforms and tools such as AngelList and Indiegogo are clearly changing how entrepreneurs are raising capital. (Indiegogo is a ffVC portfolio company.) But what about venture capital firms?

Individual angels and smaller VC funds are the main source of initial capital for entrepreneurs, are armed with the highest returns, and yet, small VC funds spend far too much time raising capital. Bigger, later stage firms can raise money more easily, but these firms end up with far worse returns. After all, 48% of the capital that the VC industry attracted in 2012 went to just 10 large venture firms. That's hard to believe when no Kauffman Foundation VC fund larger than $1 billion returned more than twice the invested capital after fees.

So, why have smaller VC funds found it so challenging to raise capital? A prime reason is that they are typically too young to have a track record which gives investors comfort. They also usually have minimal infrastructure—typically just some admin support and an outsourced CFO. However, the biggest reason has been, until now, the ban on general solicitation. This hinders VCs from letting anyone know they are raising capital, and sharing their historical performance, infrastructure, and capabilities. Thus, capital has flowed to players with brand, history, and lots of well-known companies on their website, not based on their actual returns. Historically, VCs raising capital weave stories around all aspects of their business except the most important, which is returns!

Someone had to be the first firm to step forward, share performance data, publicly announce that they are open to new investors (albeit accredited investors), and share their story. We are taking that step: We are pleased to announce that ff Venture Capital is the **first institutional venture capital firm** to embrace the JOBS Act's lift of the ban on general solicitation and publicly announce that we are currently raising capital for our third fund, ff Rose Venture Capital Fund.

For more on how we're doing this, see my Partner John Frankel's blog post, or read some of our coverage in Bloomberg BusinessWeek, The Financial Times, Fortune, CNBC (video), peHUB, TechCrunch, PandoDaily, Reuters' Venture Capital Journal, and the The Wall Street Journal.

ff Rose will close to new investors before the end of November. So, now, I can legally say that if you are an accredited investor, and are intrigued to find out more, we invite you to contact us via ffvc.com/invest. We are tracking our marketing as part of this experiment, so please note in the contact form how you heard about ffVC.

This article is available online at:
http://www.forbes.com/sites/davidteten/2013/10/15/ff-venture-capital-is-first-vc-fund-to-raise-capital-under-the-jobs-act/

CNNMoney
A Service of CNN, Fortune & Money

The first VC firm to 'generally solicit'

By Dan Primack
October 11, 2013: 7:46 AM ET

ff Venture Capital is asking for money. Publicly.

FORTUNE -- This morning ff Venture Capital will become the first VC firm to take advantage of the SEC's new general solicitation rules, which allow companies and investment firms to publicly seek capital from accredited investors.

The New York-based firm focuses on seed and early-stage companies that "deploy lightweight disruptive business models to become the low-cost player in their respective market." Its biggest hit to date is probably Cornerstone OnDemand (CSOD), while current portfolio companies include Indiegogo, Klout and MovableInk.

ff Venture Capital raised $27 million for its third fund in 2010, and late last year began targeting between $50 million and $75 million for a new vehicle that would include a sizable allocation for select follow-on rounds (something the smaller fund sizes didn't permit). It already has held multiple closes, but is opting to generally solicit for the stretch run.

"No one seems to want to go first, even though the way all of us raise capital is so old-fashioned," says John Frankel, a founding partner of ff Venture Capital. "Most of our LPs are friends, or friends of friends or friends of friends of friends. The firms that generate the best returns aren't really allowed to tell anyone…

As part of that transparency, Frankel says that ff Venture Capital has generated a gross IRR on invested capital in excess of 30%, and adds that the gaudy figure has held consistent over all of its existing funds. He does not plan to put a private placement memorandum online, but may publish a generally-available pitchdeck and hold a final close sometime next month."

I also asked Frankel about the two hangups that, so far, seem to have prevented other VC firms from generally soliciting: (1) Accredited inverstor verification requirements that could prove uncomfortable (i.e., asking high-net-worth investors for W-2 forms or bank statements); and (2) Being perceived as unable to raise capital via traditional means (i.e., desperate).

On the first one, Frankel believes that letters from certified public accountants will suffice. He also expects that some investors will utilize third-party accreditation verification services being provided by such firms as SecondMarket (which may run issuers between $12-$50 per certification). On the second, he admits he's hedging a bit by jumping into this when his fundraising is almost complete.

"We've raised the majority of our capital already for this fund without generally soliciting, but we wanted to make a principled statement here."

Sign up for Dan Primack's daily email newsletter on deals and deal-makers: GetTermSheet.com

Posted in: ff Venture Capital, General Solicitation, JOBS Act, Venture Capital.

Dec. 3 – Afternoon Session

HARVARD BUSINESS CASE

AngelList

Case Researcher: Dr. **Ramana Nanda** and a HBS team
Associate Professor of Business Administration
Marvin Bower Fellow
Harvard Business School

Moderator: Dr. **Thomas Hellmann**
B.I. Ghert Family Foundation Professor in Finance and Policy
Sauder School of Business
University of British Columbia

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Case Researcher

Dr. **Ramana Nanda** and a HBS team
Associate Professor of Business Administration
Marvin Bower Fellow
Harvard Business School

Ramana Nanda is Associate Professor of Business Administration at the Harvard Business School. He teaches Entrepreneurial Finance in the second year of the MBA program and in HBS executive education offerings.

Ramana's research focuses on the ways in which the financial sector impacts innovation and entrepreneurship in the economy. One strand of research examines the role of financial intermediaries such as banks and VCs in shaping the founding and growth of new ventures in a region. A second, related strand, examines how government policy towards the financial sector impacts innovation, entrepreneurship and productivity growth in the economy. A current project that draws on both these strands of research relates to the challenges of financing clean-energy startups and the appropriate role for government policy in facilitating the commercialization of new technologies in this sector.

Ramana is a Faculty Affiliate at the Center for International Development and the Center for the Environment at Harvard University and a Research Associate at the Center for Corporate Performance in Arhus, Denmark. He received his Ph.D. from MIT's Sloan School of Management and has a BA and MA in Economics from Trinity College, Cambridge, U.K. He is a recipient of the 2010 Kauffman Junior Faculty Fellowship in Entrepreneurship Research.

Prior to starting his Ph.D., Ramana was based in the London and New York offices of Oliver, Wyman & Company, where he worked primarily with clients in global capital markets as well as in small-business banking. He continues to advise startup ventures on their financing strategies, with a focus on the biotechnology and clean energy sectors. He also works with philanthropic investors who use market-based solutions to address poverty and promote entrepreneurship in developing countries.

Moderator

Dr. **Thomas Hellmann**
B.I. Ghert Family Foundation Professor in Finance and Policy
Sauder School of Business
University of British Columbia

Dr. Thomas Hellmann is the B.I. Ghert Family Foundation Professor in Finance and Policy at the Sauder School of Business at the University of British Columbia. He holds a BA from the London School of Economics and a PhD from Stanford University. He is the director of the W. Maurice Young Entrepreneurship and Venture Capital Research Centre at UBC. Prior to joining UBC, he spent ten years as an Assistant Professor at the Graduate School of Business, Stanford University. He teaches executive, MBA and undergraduate courses in the areas of venture capital, entrepreneurship and strategic management. His research interests are venture capital, entrepreneurship, innovation, strategic management and public policy. He is also the founder of the NBER Entrepreneurship Research Boot Camp, which teaches the frontiers of entrepreneurship economics and entrepreneurial finance to PhD students. Recently he wrote a report about the role of government in venture capital for the World Economic Forum in Davos. He also led the evaluation report of the venture capital program in British Columbia. His academic writings have been published in many leading economics, finance and management journals. He has also written numerous case studies on entrepreneurship and venture capital, and led the development of a library of case studies focused on high technology companies in British Columbia. Currently he is writing a textbook on venture capital and private equity.

SECOND PANEL

"Institutional investors' views on the financing of innovation"

Moderator: Ms. **Ann Leamon**
Former Teaching Fellow
Harvard Business School (USA)

Panelists: Mr. **Jagdeep Bachher**
Executive Vice President
Venture and Innovation
AIMCO (Canada)

Mr. **Frank Landsberger**
Senior Managing Director
INKEF (Netherlands)

Mr. **Peter Pereira Gray**
Managing Director Investment Division
The Wellcome Trust (UK)

Panelists

Mr. **Jagdeep Bachher**
Executive Vice President Venture and Innovation
AIMCO (Canada)

Jagdeep Singh Bachher is Executive Vice President, Venture & Innovation at Alberta Investment Management Corp. Dr. Bachher leads Global Special Opportunity Investments and is the Executive Sponsor of "AIMCo Innovations," an organization-wide initiative to transform AIMCo's operating infrastructure and investment processes. He joined AIMCo as Chief Operating Officer and was then appointed Deputy Chief Investment Officer. Prior to AIMCo, Dr. Bachher was President of JH Investment LLC (subsidiary of Manulife Financial Corp.), a fixed income asset management firm. While at Manulife, he worked in Global Investments Management, Canadian Division and U.S. Wealth Management. Before joining Manulife, Dr. Bachher was an entrepreneur. Dr. Bachher is a Visiting Scholar at Stanford University and an Adjunct Professor in Finance and Energy at the University of Alberta. He holds a Ph.D. and M.A.Sc. in Management Sciences, and B.A.Sc. in Mechanical Engineering from the University of Waterloo. Dr. Bachher is a member of Young Presidents' Organization (YPO) and the Institute of Corporate Directors (ICD.D). He is the Chairman of the Institutional Investors Roundtable and serves on the Board of Bloom Energy. Dr. Bachher was recently named to the Power 100 and Top 40 under 40 Chief Investment Officers by aiCIO.

Mr. **Frank Landsberger**
Senior Managing Director
INKEF (Netherlands)

Frank Landsberger is the Founder of INKEF Capital. In his varied career in the US as well as in Europe, Dr. Frank Landsberger has acquired significant experience as a venture capitalist, start-up entrepreneur, academic and senior corporate manager.

Panelist

Mr. **Peter Pereira Gray**
Managing Director Investment Division
The Wellcome Trust (UK)

Peter Pereira Gray is the Managing Director of the Investment Division of the Wellcome Trust, working with a team managing the £14 billion multi asset global investment portfolio. Peter reports to the Chief Investment Officer and is a member of the Investment Committee. Previous roles held were Co head of the portfolio Management team and Head of Property Investment. Peter has a wide brief, responsible for the oversight of the Investment Services, Support and Portfolio Management teams. Prior to joining the Trust in January 2001, Peter worked for 12 years at Prudential Property Investment Managers, latterly as a Director of Property Fund Management and Deputy Life Fund Manager. Wellcome has been a finalist in Property Week's 'Property Fund Manager of the Year' awards and has twice been a winner in the Estates Gazette/Investment Property Forum /Investment Property Databank Property Investment awards. Peter was recognised by Private Equity Real Estate magazine as one of the worlds' 20 most influential Limited Partners in 2008, and in March 2010 they named Wellcome as European Property 'Limited Partner of the Year 2009'. Wellcome recently won "Best Institutional Investor in the UK/Ireland' at the prestigious IPE Real Estate awards in May 2010, and Peter was shortlisted alongside others for the "Industry Contributor' of the year award by both titles during 2010. In March 2012 Peter was recognised by Estates Gazette as one of the most influential voices in real estate in the UK. Peter is a past Chairman of the Investment Property Forum, the UK's leading property investment professionals' members association. He is a member of both the Bank of England Commercial and Residential Property Forums, and a member of the Royal Institution of Chartered Surveyors. Peter was a past founding and advisory board member and member of the Management Board of INREV (the European Association for unlisted real estate vehicles). Peter is an Advisory Board member for Composition capital partners, a real estate fund manager with offices in Amsterdam and Hong Kong. Outside work he is a Life Fellow of the Royal Society of Arts and an Advisory Board member and Honorary Fellow of the Institute of Continuing Professional Development. Peter has written a number of papers and presents regularly at the major international conferences including IPD/IPF, INREV, IMN, Property Week, and PERE in London, New York and Europe.

Moderator

Ms. **Ann Leamon**
Former Teaching Fellow
Harvard Business School (USA)

Ann Leamon was a Teaching Fellow at the Harvard Business School and is now the COO and a Partner at Bella Research Group. At Harvard, Ann co-founded the Center for Case Development. She left that position to collaborate with Professors Josh Lerner and Felda Hardymon in the further development of the Venture Capital & Private Equity course. She has co-authored more than 120 cases, three editions of Venture Capital & Private Equity: A Casebook, and the textbook Venture Capital, Private Equity and the Financing of Entrepreneurship. Recently, she and Professor Lerner founded Bella Research Group, which provides customized research and education to the private equity community. Ann is also the former Director of Communications for Bessemer Venture Partners, a global top-tier venture capital firm. Prior to joining the private equity industry, Ann spent six years as a senior business analyst at L.L. Bean and three years at Central Maine Power Company as a senior economic and load forecaster. Her work in local area load forecasting won an Industry Innovators award from the Electric Power Research Institute. Ann holds a B.A. (Honors) in German from University of King's College/Dalhousie, an M.A. in Economics from University of Montana, and an M.F.A. in Poetry from the Bennington Writing Seminars.

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N9-123-456

SEPTEMBER 11, 2013

RAMANA NANDA

LIZ KIND

AngelList
PPF 2013 Harvard Business Case

Questions from Professor Josh Lerner

Please consider the following questions:

1. Do you think that equity-based crowd funding will play an important role in the financing landscape for startups going forward? Which startups and investors will be most attracted to this mode of financing and what will be the drivers of success?

2. Do you think that several niche crowd funding platforms will continue to coexist or is this a "winner take all" market? What steps should AngelList take to be successful?

3. Which elements of AngelList's emerging business model do you like? What could go wrong? How should Naval and Nivi manage the risk-reward ratio?

4. As VC investor, would you invest $25 M in Angellist at a $150 M post-money valuation? Why or why not?

AngelList

As AngelList co-founders, Naval Ravikant and Babak Nivi, looked around their new office space in San Francisco, CA, they couldn't help but reflect on the success they had in the past few years. The two met in the Bay Area in 2005 through mutual professional and social connections. In 2007, they decided to start Venture Hacks, a blog dedicated to helping entrepreneurs navigate the world of venture capital. Their newest endeavor, AngelList, was an extension of Venture Hacks. In early 2010, Ravikant and Nivi posted a list of angel investors on the Venture Hacks blog as a resource for founders looking for funding prior to seeking venture capital. The list quickly evolved into AngelList, a separate matchmaking platform for founders and investors to make early stage fundraising more efficient. Within the first month of launching AngelList, one of the startups profiled got funding, and by mid-2010, Ravikant and Nivi were dedicating all of their time to the new site.

By June 2013, AngelList had garnered substantial media attention, and was used by many high profile angel investors and venture capitalists. It had approximately 100,000 startups and 18,000 accredited investors. Since the site was launched, almost 40 startups on AngelList had been acquired, and over 2,000 startups had been funded. For most entrepreneurs, posting a profile on AngelList had become as commonplace as setting up a personal profile on Facebook or LinkedIn. Within the last year, the site added an active recruiting product and began providing online tools and documents to help facilitate the funding process. Most recently, the site added Invest Online, a new product that in partnership with SecondMarket, allowed accredited investors to make small investments—as low as $1,000—in startups at the same terms as larger investors.

While the co-founders were proud of AngelList's growth, as of June 2013, they were not charging for its use and had not yet determined its business model. Ravikant and Nivi wondered if they should reconsider and have AngelList apply for broker dealer status so it could charge transaction fees, but they were reluctant to enter what they considered a regulatory minefield. The recently passed JOBS Act was expected to relax constraints around crowdfunding, and Nivi and Ravikant knew that would be a logical extension for AngelList as well. Finally, they wondered if they should avoid any potential regulatory issues altogether and instead focus on generating revenue primarily from recruiting and other ancillary services.

Background on AngelList

Ravikant had a wealth of experience as both an entrepreneur and an investor. He was born in India, and moved to New York with his family when he was nine. He worked his way through Dartmouth College, graduating in 1995 with degrees in computer science and economics. After a short stint with the Boston Consulting Group, Ravikant moved to Silicon Valley in 1996 to focus on high-tech and began working with a variety of startups and in venture capital. In 1998, he helped found Genoa Corporation, a manufacturer of semiconductor optical components. The company was acquired in 2003 by Finisar Corporation in a stock transaction valued at approximately $5.5 million. In 1999, while an Entrepreneur in Residence (EIR) at August Capital, Ravikant co-founded Epinions, a consumer product reviewing Web site that was acquired by DealTime in 2003 for an undisclosed amount. Ravikant and three of the company's five founders had left the firm, but agreed to the deal, even though the terms rendered their shares worthless. The new company, renamed Shopping.com, went public one year later, raising over $124 million with an implied valuation of approximately $750 million by the end of the first day of trading.

Ravikant, the three co-founders that had left Epinions, and some former employees made headlines in January 2005 when they sued the remaining founder and the two venture firms—Benchmark Capital and August Capital—which had provided seed funding, claiming they had been deceived and cheated out of nearly $40 million. By the end of 2005, the suit was settled, and Ravikant went on to co-found and serve as CEO of another startup, Vast.com, an online classifieds marketplace. On the side, he launched his blog, Startup Boy—The Truth in Startups and a Whole Lot Less. In 2007, he raised $20 million for The Hit Forge, a fund focused on early-stage social media investments. Through the fund, Ravikant invested in a number of highly successful ventures including Foursquare, Twitter, and SnapLogic.

Nivi also had experience in both startups and venture capital. Born in London, England to Iranian parents, Nivi spent his early childhood in Tehran before moving to Canada. His early schooling was in Canada and Michigan. Nivi graduated from the Massachusetts Institute of Technology (MIT) in 1997 with bachelors and masters degrees in electrical engineering and computer science. He continued his studies at MIT as a Ph.D. candidate, again in electrical engineering and computer science. While at MIT, he and his collaborators received two U.S. patents, one of which supplied the technology behind Kovio, a startup backed by Silicon Valley venture capitalist, Vinod Khosla, and Bessemer Capital (Bessemer). In 2000, Nivi dropped out of his doctoral program, and after toying with some startup ideas, decided to pursue a position in venture capital. He explained, "It looked like a really fun job—you get to sit…all day, people come and pitch to you with their great ideas, and then you're like a king with a checkbook who decides whether to invest money or not. But it wasn't really like that." He worked as an associate at Seed Capital Partners, and as an EIR at Bessemer and Atlas Capital. He became interested in an online music company, Songbird, and joined them full time as vice president. While Nivi was grateful for the venture capital colleagues who served as his mentors, he recognized that VC was not for him. He elaborated:

> I was just awful at it, and I hated it because I thought it was the worst run profession ever. It was a relationship business at a time when everything should have been running online like eBay. The structure made no sense. Dealflow came from people you knew; there was no online or other repository where you could see all the companies seeking funding, the way you would in the public markets. Then, once you identified a company you wanted to invest in, you had to sell your way into a deal and convince the founders to take your money. And, because every deal was unique, there was always negotiation around each of the terms.
>
> Ultimately, my biggest issue was that, no matter what they said, the VCs were never on the side of the entrepreneur. I think capital partners should act like co-founders or team members, but venture capitalists have a lot of different incentives. I also think it's unfair that the VCs know so much more about fundraising than the entrepreneurs.

While helping Songbird raise money, Nivi noted, "I got a lot of good advice from Naval and others about how to manage and negotiate the process, and I decided I'd rather be spending my time publishing that kind of guidance online." Ravikant added, "After the Epinions experience, a lot of people came to me for advice on the whole VC game."[1] In 2007, he and Nivi decided to start Venture Hacks. Kevin Laws, chief operating officer at AngelList, commented, "Nivi took a lot of the information that Naval, in particular, had shared with him about how to raise money, and turned it into good advice for entrepreneurs. Nivi is a brilliant writer. He has an unusual ability to distill lengthy writings into a half page and still cover it all."

The Venture Hacks blog quickly gained a following among entrepreneurs and was sponsored by the Kauffman Foundation for Entrepreneurship. Posts covered a variety of topics from "How to pick a Co-founder," to "How to Make a Cap Table." A compilation of the blog posts, *The Venture Hacks Bible*, was published in 2012. Ravikant and Nivi routinely received inquiries from entrepreneurs, asking for referrals to investors. Eventually, Ravikant and Nivi decided to compile a list. Nivi elaborated:

> We were brainstorming while driving in Naval's car, and decided that we should just make a list of investors—people were asking us for names all the time. Venture Hacks teaches entrepreneurs how to negotiate a deal, but a lot of founders don't know any investors to be negotiating with. So, we thought it made sense to put together a list, with things like where they were based, what they were interested in investing in, and what their portfolio looked like. We made an online form, emailed it to our investor friends, and asked them to fill out their name, location, number of investments they were going to make during the year, the typical dollar amount of their investments, how they could add value, and generally, what kinds of companies they were interested in investing in. We took their answers and cut and pasted them into a big blog post that, within a few months, grew to be over 100 investors.
>
> That giant blog post was the first version of AngelList. From there, it grew a bit at a time. There was demand from day one, but we constantly tweaked it and created new iterations. The next natural question we got from the entrepreneurs was, "How do I get in touch with the investors on the list?" We tried adding the investors' email addresses, but they quickly got overwhelmed with spam. Next, we had founders fill out a form describing their company. If we liked it, we emailed it to the investors—we were basically middlemen. Then, we had the startups build an online profile, similar to what they might do for Facebook. Eventually, we made the profiles public, so that investors could browse the site and see all the companies that were looking for an introduction. It's been, and continues to be, a constant pivot.

According to Ravikant, the site was modeled on and named after the online classifieds site, Craigslist. He noted, "At its simplest [Craigslist] is about helping people find the connections they need for every service."[2] Laws also reflected on the site's history:

> It began as a side project. Naval and Nivi recognized that venture capital didn't make as much sense as it had in the past as the cost of starting a business went down. They hired some engineers to write software that would filter deals and investors for each other. We put in all kinds of things we knew investors would look for: Who do you know? What's your background? Did you come out of Google? Did you go to Harvard or MIT? How much traction does your company have?
>
> Once we added that kind of screening, AngelList became much more than just a blog to help out friends. It exploded. We weren't planning to take over the world with AngelList; it was a project to give back to the community. Yet, when it took off, we decided to form a company and build it out from there. AngelList is structured as a for-profit company, although we don't have profits—or revenues for that matter, yet—for a variety of reasons, primarily regulatory. We raised some funding from angels and the Kauffman Foundation for Entrepreneurship. The idea for now is to grow bigger and to figure it out how to make money in 2013. In the past, we've all built successful companies, and are comfortable that for the time being, the best move is to just keep growing.

AngelList – The Platform and Company (as of June 2013)

Typically, startups began on AngelList by creating a profile for their company, and identifying investors they wanted to meet. Any company was eligible to publish a profile on AngelList. Investors, however, were screened and required to be "accredited" according to U.S. SEC [Securities and Exchange Commission] rules and regulations.[3] The AngelList platform functioned similarly to a social networking site. Participants could "follow" people and/or companies, comment on posts, and "like" others' updates. Search filters, such as market or industry, geographic location, and investments in similar companies, provided startups and investors the ability to connect more easily.

Within 72 hours after a company profile had been published, the AngelList team used an algorithm to screen the startups and hand review the top ones in order to determine which organizations they would feature to investors. Ravikant explained:

> For each company, we look for team, product, traction, and social proof because that is was investors are interested in. With team, a lot of it is based on background—where the team went to school and what they did in terms of prior jobs or companies. We try to structure that information as much as possible, but it's half fuzzy, half crunchable. On product, it's almost all fuzzy—you have to have nose for what products are interesting, how well the team will execute, and so on. Traction can be quantified to a certain degree in terms of a company's revenue; how many users they have; and how many customers they have. And then finally, social proof is measured based on who's advising and who's investing in the company. We've managed to quantify things enough so that for every 100 companies that come in, we only need to look at the top 10 to 20 profiles manually.

Ash Fontana, who worked on fundraising products, including core investor/company matchmaking at AngelList, estimated that somewhere between 100 to 200 startups published a profile on AngelList each day. AngelList manually reviewed approximately 200 per week, and interviewed some of the startup teams by Skype, phone, or email before selecting the three to five companies that would be featured to investors or on the Web site that week. Ravikant provided more background:

> We started out vetting all the companies, but eventually asked ourselves: who are we to judge what should get funded and what shouldn't? Obviously when you're scaling a network there's a quality/quantity tradeoff, so we work very hard to curate the best companies and feature them on the homepage. Every single view on the site is sorted and rank filtered, whether someone is looking at incubators, investors, lawyers, or companies in specific markets or locations. Right now, there are about 100,000 company profiles on AngelList. A lot of them are junk like the hair salon down the street that will never get funding from professional investors. But, some of the best companies—such as Pinterest—start out as complete unknowns. In addition, a lot of companies begin on AngelList with a minimal amount of information and then progressively build up their profile. And then of course, a lot of serendipity can happen and one person's trash is another person's treasure. There are some companies that don't appeal to traditional investors, but may appeal to angels who know the space or who are interested for personal reasons.

Ravikant estimated that of the 188,000 total profiles, approximately half were "community profiles" that were not actively maintained by their founders or CEOs. He described 4,000 to 7,000 of the remaining startups as "high-quality fundable companies." Of these, the vast majority were early stage technology companies. Ravikant added, "The breakdown is something like 70% software information technology, 20% to 25% enterprise, 5% to 10% hardware, 5% consumer goods, some healthcare, and then all kinds of miscellaneous."

Investors also filled out a profile for AngelList, including data on their background, portfolio, and anticipated number and dollar size of investments for the upcoming year. As of June 2013, there were approximately 18,000 accredited investors that had been approved by AngelList. Once approved, investors had their own pages that included a list of featured companies for the week, which were based on AngelList's recommendations and their own investment preferences. Investors could also use the page to track investments, the companies they were advising or following, and the startups that were trending popularly within the AngelList community. The investors on AngelList included high net worth individuals, professional angel investors or investor groups, or venture capitalists. Ravikant estimated 40% were venture capitalists and 60% were angels. AngelList ranked investors by the number of "followers" they had. (See **Exhibits 1 and 2** for a list of the highly ranked venture capital firms and angel investors.)

The site rapidly gained loyal followers, but in February 2011, venture capitalist Bryce Roberts created a media stir when he publicly deleted his AngelList account, claiming a herd mentality toward investing.[4] (See **Exhibit 3** for Robert's post.) Another naysayer posted a blog titled, "The Crapification of AngelList," citing excessive emails and requests from entrepreneurs to "like" their company, in order to game the system.[5] Nonetheless, the vast majority of press around AngelList was extremely favorable. Mark Suster, a former entrepreneur and venture capitalist, described AngelList as "one of the most important contributions to the Web in angel investing in a long while."[6] Another prominent venture capitalist described his reasons for using AngelList:

> AngelList is an incredibly powerful platform for connecting entrepreneurs with capital and has rapidly become one of my best sources of early-stage dealflow. I read every summary the system sends me.
>
> Here's one reason AngelList is a big improvement for me: most entrepreneurs are all too familiar with how inefficient and time intensive a process raising capital can be but may not realize that this is also true for the investors. To make the best investment decisions I want to see as many deals as I can but the traditional method of companies contacting me by email, usually referred through someone we both know, imposes a non-trivial amount of overhead in that each intro then requires a follow up – which is most often to politely decline – and which requires care to avoid offending any of the parties involved. This may only take 15-30 minutes but when you're seeing 3-5 new deals/ day, it adds up.
>
> On AngelList, in contrast, I'm presented with a clear, crisp "elevator pitch" in the introductory email and further have access to a detailed summary with a single click. Because there is no human introduction involved at this stage, if the deal isn't a fit I can just hit "delete" and move on. This is the best of both worlds – I can see as many deals as I want with none of the wasted time on the no-fits.[7]

Entrepreneurs who raised funds through AngelList, such as Rene Reinsberg, spoke highly of the site as well. Reinsberg described his experience raising over $600,000 in seed funds for his tech firm, Locu:

> AngelList was an amplifier for us. When we started fundraising, we were aiming to raise around $500,000 and initially got commitments of about $250,000 from east coast investors. However, our networks were somewhat limited. My co-founder and I went to MIT, but are originally from Germany and Belgium. We had moved to San Francisco and were looking to optimize for the company and find other investors who could add value in specific areas of expertise. We put our profile on AngelList and quickly got in front of a lot of people. I think we had 20 or 30 introductions within two to three weeks. One angel made an investment after only two phone calls, without ever meeting us. By then, people knew and respected the other

investors we were talking to, and we were able to close the round within a few weeks. AngelList was a very powerful tool that gave us social proof. It worked out really well for us and we are very happy with every one of our investors.

New Offerings

As the platform's influence grew, AngelList's users and others began using the site to search for and find information. In August 2012, AngelList launched its talent recruiting product, initially to match entrepreneurs whose companies failed to raise money on AngelList with companies that succeeded in raising funds and were looking to hire additional staff. The Talent portal quickly took off, making more than 2,000 introductions per week on behalf of over 31,000 candidates, resulting in approximately 120 placements per week. AngelList Talent was offered free of charge, saving companies $25,000 or more in standard placement fees. Ravikant elaborated:

> As we scale, something like 95% of the companies on AngelList will not be fundable. But, the majority of people working at those companies, such as founders, developers, designers, and product managers, are quite employable. Some of the companies recruiting on AngelList Talent—such as Quora, Yelp, and Kickstarter—never raised funds through us, but have been successful and need entrepreneurial talent. We are finding that we do a very reasonable job in connecting Silicon Valley-based companies and talent, but we do a really great job across different geographies. All kinds of people are moving to the startup hubs. So, if you are graduating from Carnegie Mellon in Pittsburgh, you'll want to see all the New York and San Francisco based startups that happen to be on AngelList.
>
> We use some of the same filters that we use to sort and rank startups. People fill out a complete profile that includes things like what school did you go to, what's your GPA, who are your references, what companies have you worked at, are you a developer or a designer, and are you on GitHub, Dribbble, or Behance? In addition to our own algorithms, we rely on real world signals such as who follows you and who is a friend with you on other social media sites.

In September 2012, AngelList announced that it had partnered with incubator 500 Startups to assist in vetting applicants for the incubator's next program. That December, AngelList announced its partnership with broker-dealer, SecondMarket, to launch Invest Online, a service that allowed smaller—yet still accredited—investors to put $1,000 or more in a startup at the same terms as the deal's larger investors. Fontana noted, "Previously, AngelList investors were investing in substantial increments, up to $250,000. Now, with the Invest product, we are changing the game and creating a new class of capital for entrepreneurs. Through SecondMarket, we aggregate the investors into a fund of at least $200,000, and the fund invests in the startup." SecondMarket charged investors $250 per deal, and startups, a fee of $10,000 to cover legal and compliance costs, and to pool the investors into a single fund.[8] In Invest Online's first forty-eight hours, four companies raised $500,000. During a four-month test period ending in April 2013, 18 startups raised $6.7 million in funding commitments from 620 investors.[9]

By June 2013, AngelList had twelve employees—nine who worked on products, two who worked on screening startups and disseminating the promising ones to investors, and one administrator. While the numbers were difficult to track because so much of the funding took place offline, Ravikant estimated the platform helped drive 500 to 700 introductions per week and had raised approximately $200 million for startups.[10] He also estimated that a relatively high percentage—up to 25%—of introductions through AngelList ended up getting funded.[11] Success stories on AngelList, such as Uber, BranchOut, and GetAround had gone on to raise over $1.1 billion of additional funding (although not all on AngelList). (See **Exhibit 4** for a breakdown by market segment and geography.)

Seed and Early-Stage Investing Overview

Generally, entrepreneurs turned to angel investors to fill the gap between "friends and family" funding (usually in the neighborhood of $25,000 to $100,000), and Series A venture capital funding (traditionally $5 million to $10 million in initial investments). According to the Center for Venture Research, angel investments totaled $22.9 billion in 2012 and funded 67,030 entrepreneurial ventures.[12] There were 268,160 active investors in 2012 who made an average individual investment of $85,435. The average angel deal size in 2012 was $341,800. Thirty-five percent of angel investments in 2012 were seed and startup stage, 33% were early stage, and 29% were for expansion financing.[13]

Typically, angel investors were affluent individuals who invested their own personal funds in entrepreneurial concerns within their geographical area, and often within their prior areas of professional expertise or interest. Increasingly, individual angels were joining groups or networks of angels to pool their resources and coordinate on leads, due diligence, contacts, and management advice, and invest jointly. Hans Severiens founded the first angel investing group, Band of Angels, in 1995. By 2007, the Angel Capital Association estimated there were between 10,000 and 15,000 angels who were believed to belong to angel groups in the U.S.[14] In 2012, there were approximately 300 angels groups across the country. On average, each angel group had 42 member angels and invested $1.94 million in 7.3 deals per year (as of 2007).[15]

A third and more recent category of angel investors called "super angels," often acted as micro venture capital firms, investing their own funds as well as funds from limited partners. Well known super angels included individuals with divergent investment approaches such as Ron Conway (broad-based) and Mike Maples (highly focused), as well as funds with multiple partners, such as Founder Collective and CommonAngels (with over 75 individual angels). Super angels had raised funds ranging from a few million to $75 million. Average investments were generally between $25,000 and $1 million per deal.

The movement toward angel groups and super angels largely reflected changes in venture capital and the decreasing costs associated with starting a company. Venture capital firms saw low returns throughout the 2000s, and especially in conjunction with the 2007/2008 financial crisis and subsequent recession. In addition, through 2010, a declining IPO market made venture capital exits more difficult. (According to data from Sand Hill Econometrics, only 6% of venture capital exits since 2003 were through an IPO.)[16] At the same time, open-source software, "cloud" infrastructure services, and social media platforms helped cut startup costs by 90%.[17] Suster reflected on his days starting a software business, "What used to cost $5 million, now costs $500,000. As a result, more and more people are able to start companies very, very quickly."[18]

Many venture capital firms responded by lowering their minimum commitment levels and investing in earlier-stage companies. For example, in 2010, Kleiner Perkins Caufield & Byers raised $250 million for its sFund, to invest in seed-stage social media concerns. One year later, Google joined the fund as a strategic partner. Also in 2010, the venture capital firm Sequoia Capital was the lead investor in a $8.25 million fund designated for investments in Y Combinator, a leading incubator's startups.

The resulting dynamics had created a much more entrepreneur-friendly funding environment than in the past. The number of seed fundings (investments less than $1.5 million) by either angel investors or venture capitalists in technology startups increased from 472 in 2009 to 1,479 in 2012.[19] One investor noted that valuations for startups had hovered at $1 million to $2 million for years, but by 2011 had jumped as high as $5 million to $6 million.[20] Some experts however, were concerned about an overheated market and the sustainability of the higher valuations. Already, evidence was pointing toward a "Series A crunch," in which industry observers speculated that previously funded startups would have trouble raising a Series A round. (See **Exhibit 5** for data from a 2013 seed funding survey.)

Regulatory and Policy Issues

When Nivi and Ravikant were creating the platform, they made a conscious decision not to structure AngelList as a broker dealer in order to avoid becoming highly regulated. However, Ravikant and Laws spent six months trying to get the securities laws changed. (See **Exhibit 6** for an image of Ravikant and Laws in Washington DC.) Ravikant provided some background:

> The financial securities laws were written in 1934, which is a long time ago….A lot of the stuff that goes on at incubator demo days and at these conferences is technically illegal. When someone stands up at demo day—some mentor—and says, "You should invest in this company," that's not completely kosher. Or [if he or she] says, "Here's a standardized term sheet that we're using. This is the standard AngelPad or TechStars note," that is not legal. You are supposed to be a broker dealer if you are doing those kinds of things. All of this was operating very much in the grey areas of the securities laws.
>
> We bend over backwards to be securities laws compliant. We have a full legal opinion up and all that stuff. We never touch money—it's part of the reason. But, it is still pretty scary. There are a bunch of products we wanted to offer, like Docs, that we could not legally do…without being a broker dealer. Being a broker dealer means you have all these regulations and requirements that actually make it impossible to work with startups. So, we wanted to get the law changed, which people told us was impossible to do.[21]

In the third quarter of 2011, several bills aimed at easing restraints around funding for small businesses were introduced in Congress. Over the next few months, the bills were modified and combined into legislation that was renamed as the Jumpstart Our Business Startups Act (the JOBS Act). Laws described his involvement on AngelList's behalf:

> The most unusual thing we did as a startup was to lobby congress to change the law. There were three key things we were interested in making sure got passed in the JOBS Act. One was comfort that what we were doing was not in a legal gray area. There is a bright line test for a broker dealer which is: do you collect a fee from a company for raising money for them? The answer is no, we do not. But, there are all kinds of ways of looking at that, and we wanted acknowledgement that as a platform, AngelList wouldn't have to register as a broker dealer just for making introductions. The second key thing we wanted was confirmation that we could express an opinion on companies. For example, we wanted to make sure we can say to investors, "Out of this pile of 100,000 companies on AngelList, here are six this week that we think might be interesting to you." We are heavily aided by algorithms, but there are always companies where we use a person to take a final look. We needed to make sure that it was legal to have someone in that role. Third, we were looking for was the ability to provide standardized closing documentation. The SEC was interested in making sure that we offered—but did not require—the use of that documentation in order to use the platform.
>
> Of course, had we chosen to register as a broker dealer, we would have been allowed to do these sorts of things. However, there are a number of costs and capital requirements associated with registering as a broker dealer. The biggest issue is that there are a set of regulations that wouldn't allow us to run the service the way we do. Two were particularly relevant for us. One is what's called the suitability requirement that regulates brokers to make

sure they're not selling inappropriately to widows and orphans. A broker must know enough about the opportunity he or she is putting forward to know that it is not defrauding the person they're presenting it to. In our case, that would require us to individually meet with and vouch for all 100,000-plus companies that appear on AngelList. Obviously, that would not be feasible. The other issue is that anything on the Web site of a broker dealer could be considered an advertisement and would be subject to review and approval by FINRA, the independent regulator of all securities firms in the U.S. Some people here have worked in design and engineering at brokerages, and they said it can take weeks to get approvals for changes. We're trying eight different ideas a day, and while not all of them are big and visible, a lot of them are and there's no way we could work under those circumstances. So while we certainly considered becoming a broker dealer, the regulations we'd have to live under would have hobbled us without actually helping investors they were meant to protect in any way. The securities regulations just weren't written with modern platforms in mind.

The JOBS Act resolution that included legislation to address AngelList's concerns was passed with bi-partisan support by Congress in March 2012, and signed into law by President Obama in April 2012. The legislation included six provisions with varied implementation schedules. (See **Exhibit 7** for a chart depicting the pieces of legislation and their expected implementation time frame.) Some provisions were effective immediately, while others required the SEC to conduct studies and formulate rules prior to implementation. However, more than a year after its passage, the SEC had not met many of its deadlines due to the complexity of the task, limited resources, and top level leadership transitions. In May 2013, one reporter noted, "getting the regulations into effect will take close to a year: three months for public comments, three more months for the SEC to revise its rules in response to those comments, and three to six months for FINRA to design a registration process that complies with the rules."[22]

Separate from the JOBS Act, in March 2013, AngelList and FundersClub,[1] an online venture capital platform, made headlines when they received "no-action" letters from the SEC, stipulating that the government would not recommend enforcement action against either of the two firms. Both companies believed they were acting within existing legal guidelines, but had sought assurance from the SEC that their current and proposed operations would remain exempt from broker dealer requirements. Laws elaborated, "The biggest change that the letters allowed wasn't the funds – our partnership with SecondMarket already made those legal since SecondMarket was a broker dealer— it was the stipulation that we could charge a carried interest on those funds, allowing us a legal way to charge for our services without becoming a broker dealer ourselves."

AngelList's request to the SEC stipulated it was considering creating startup-specific investment funds, each headed by a successful and experienced "Lead Angel," who would help screen and select a given startup, negotiate the structure and terms of the deal, and possibly provide operational assistance after the transaction had closed. As part of the plan, AngelList would create an affiliated subsidiary, AngelList Advisors, which would register with the SEC as an investment advisor. AngelList would not charge a management fee, but would take a backend carry that would be split between AngelList Advisors and the Lead Angel.

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1 FundersClub was a Y Combinator startup that launched in 2012 and had raised $7 million in angel and venture capital funding. The company functioned as an online venture capital platform, but unlike traditional venture firms that took a standard 2% management fee and 20% backend carry (interest in the profits of the fund), FundersClub took just the backend carry. On a case-by-case basis, FundersClub was considering increasing the size of the backend carry to up to 30%.

While the letters were limited in scope and specific to the two companies, many believed they indicated the SEC was leaning a step closer toward online equity investing, and allowing a bigger pool of investors. For both FundersClub and AngelList, investors were required to be accredited, but could invest as little as $1,000. Ravikant responded to press inquiries about AngelList's no–action letter saying, "It lets us know the legal boundaries of what's possible in the space and will inform our future products, but right now we're happy with the SecondMarket partnership…."[23]

Other Seed and Early Stage Funding Alternatives

Incubators and Accelerators

Incubators (also often referred to as accelerators) were designed to help entrepreneurs launch their companies, and rose to prominence during the technology boom of the late 1990s. Typically, they offered office space and assistance with access to funding and basic business services such as accounting, recruiting and legal, often in exchange for a small equity stake. Starting with the founding of Y Combinator in 2005, a new group of incubators—including TechStars, AngelPad, and 500 Startups—arose and redefined the category. (See Exhibit 8 for a list of top startup incubators.) Instead of office space, these incubators provided short-term intensive coaching and networking, similar to a boot camp experience. Entrepreneurs applied for highly competitive admission to "class" sessions, generally ranging from three to six months. Many incubators offered multiple class cycles each year. Once accepted, the founders typically received a cash infusion—currently $11,000 plus $3,000 per founder from Y Combinator—in exchange for an equity stake, generally in the neighborhood of 6% to 7%. In addition, the entrepreneurs received individual advice from incubator partners on a wide variety of topics, including marketing, technology, and legal matters, as well as on how to refine their business models and investor presentations. The incubators had strong relationships with angel and venture capital investors, and at the end of each session, held "Demo Days" for entrepreneurs to solicit funding through short two- to five-minute pitches.

In Y Combinator's case, Demo Day had grown into a day-long event with at one point, over 80 startups presenting to about 400 high-profile investors.[24] (At the Winter 2013 Demo Day, 47 startups presented.) During the incubator's first six years, 72% of its startups raised money after Demo Day.[25] Y Combinator success stories included Reddit (valued at $400 million in early 2013), DropBox ($4 billion) and Airbnb ($1.3 billion).[26] In addition to Sequoia Capital's investment, in early 2011, investor, Yuri Milner partnered with Ron Conway's angel fund, SV Angel, to create The Start Fund which offered $150,000 in convertible notes to all Y Combinator startups. (A new version with slightly different investors, YC VC, was announced in late 2012 to replace The Start Fund and instead offered $80,000 per startup.)

Crowdfunding

Crowdfunding—the ability for companies to raise funds from individual investors online—was a relatively new phenomenon and fell into four general categories: rewards-based, lending-based, donation-based, and equity-based. The best known crowdfunding company, Kickstarter, was started in 2009 with $10 million in venture capital funding to help creative projects get financed. Instead of receiving an equity interest, funders on Kickstarter contributed to projects in exchange for perks or rewards, such as t-shirts, discounts, and early access to upcoming products or events. On Kickstarter, projects that failed to meet their financial goals within a certain time frame received no funding at all. As of May 2013, since its launch, 4.1 million people pledged more than $629 million for 42,000 projects on Kickstarter.[27] Kickstarter prescreened projects for listing on the site (approximately 25% were turned down) and took a 5% fee on funds raised.[28] One of its most high profile projects, the

Pebble smart watch, raised over $10 million on the site. Nineteen of the films on the 2013 Sundance festival slate had been funded on Kickstarter.[29]

Other sites, such as Kiva, focused on social or peer-to-peer lending. Funders provided small loans to individuals and organizations, assuming they would receive interest and principal repayments in return. As of the spring of 2013 and since its founding in 2005, Kiva users provided approximately $438 million to 1.1 million borrowers. The funds were provided by approximately 940,000 individual Kiva lenders.

A third category, donation-based crowdfunding, relied on funders who donated to philanthropic or other causes, with no expectation of compensation or of getting their money back. The best known of these sites, Indiegogo, founded in 2008, enabled fundraising campaigns for a broad spectrum of activities, including films, music, personal finance needs, charities, and startups. The company did not curate its listings, but did use an algorithm to feature the most active campaigns on its homepage. Indiegogo charged a 9% fee on funds raised through its site, but for campaigns that met their entire fundraising goals, charged only 4%. In June 2012, Indiegogo raised $15 million in a Series A round led by Khosla Ventures.

Equity crowdfunding—where funders received an equity interest in exchange for their investments—while legal in many countries was limited in the U.S. to accredited investors and platforms in partnership with broker dealers. In 2011, there was $112.6 million of equity-based crowdfunding worldwide, with over one-half of the activity based in Europe.[30] Five platforms from four countries were responsible for 93% of the equity-based crowdfunding volume raised that year.[31] The largest equity-based crowdfunding platform, SEEDUPS, was launched in the UK and Ireland in 2011. SEEDUPS enabled technology startups to raise up to $500,000 in a six-month listing period from qualified high net worth investors who bid anywhere from $1,000 to $25,000 per listing. SEEDUPS used an "all or nothing model," where startups only received funds if they met their full financial goals. SEEDUPS charged a 5% fee on successful deals.

Industry observers expected U.S. equity crowdfunding to get a significant boost once the JOBS Act rulings were defined by the SEC and implemented. Three of the JOBS Act provisions were particularly relevant to equity-based crowdfunding. Title III allowed small businesses to offer up to $1 million in securities through crowdfunding, selling either through a broker dealer or a "funding portal" registered with the SEC. Another provision allowed widespread advertising and marketing of private offerings that had formerly been limited to accredited investors. A third allowed private companies to have up to 2,000 investors (rather than 500 previously) before having to make public filings.

Already, Web sites with a domain name including the word "crowdfund" had grown tenfold in 2012 and totaled over 9,000.[32] In the last year, Kickstarter deliberately discouraged new product or "gadget" campaigns in favor of more creative, arts-oriented projects, and publicly denied an interest in pursuing equity-based crowdfunding. However, in recent media interviews, Indiegogo and others, such as CircleUp and RocketHub, expressed a desire to pursue equity-based crowdfunding, pending the complexity of the forthcoming SEC rules and regulations.

Proponents of the likely increase in equity-based crowdfunding welcomed what they saw as the democratization of early stage funding, and the opportunity for small, everyday investors to participate in private financings. Others, however, were more skeptical. Consumer advocate groups were concerned about fraud, particularly for unsophisticated investors. Others worried about "pack mentality," potential for overvaluation, and over the long-term, low returns. One venture capitalist commented on crowdfunding:

> In the short-term, I think it will be kind of a mess. A lot of companies that probably shouldn't get funding will get it, because of the novelty of the platform and the momentum investing that tends to characterize individual investors. That will cause some VCs to try and outbid them, causing more and more hype for mediocre deals. At the same time, the good deals that hit the traditional markets will also be overfunded—because VCs will fear companies getting financed by other means….
>
> Then, reality will set in. I don't really think a bunch of individuals with little to no experience are suddenly going to "beat the market" when compared to people who do this for a living fulltime. Plus, I've heard…that most angel investors put 70% of all the money they will ever put into startups to work in their very first year of angel investing. Why? Because they realize it's super hard, a lot of work, and dealing with the companies when they need more financing and start hitting a wall is much more difficult than just writing checks. For many investors, it's a pretty sobering experience. It's going to be no different in the crowdfunding world. Money flows will come pouring in at once, and when the returns aren't there, they'll dry up quickly.[33]

As a whole and including all four categories, the crowdfunding industry raised $2.7 billion in 2012 from over 1 million campaigns around the world.[34] Over the last three years, funds raised grew at a compound annual growth rate of 63%. Crowdfunding platforms numbered less than 100 in 2007, and were estimated at 536 as of year-end 2012. In 2013, the industry was expected to raise $5.1 billion.[35] (See **Exhibit 9** for a list of popular crowdsourcing platforms.)

Defining the Business Model

As Nivi and Ravikant looked toward the future, they continued to struggle with the best business model for AngelList. Laws provided background, "Initially, we didn't even think about having a business model. We incorporated as a for-profit just because we didn't expect to be doing this for free forever. We're in the midst of a growth mode, so the business model question isn't on the top of our minds, but it is always in the back of our minds."

One obvious source of revenue would be for AngelList to start charging a transaction fee. However, the firm would have to register as a broker dealer. In a 2012 interview, Ravikant commented, "We will never charge startups and investors for meeting each other. That we'll never do. It's just not going to happen. Investors always say, 'Why don't you charge the investors? No one would care.' We don't want adverse selection. We want everyone who wants to use us to be able to do so."[36] Laws elaborated:

> We have a hypothesis that if we were to charge either side of the transaction—the accredited investors or the companies raising financing—we would have an interesting problem. We think the best companies and the best investors would say, "Oh, I can do fine without this platform. I'll go ahead without it because I'd rather avoid the charge." And, since all the investors want to be in the best deals and all the startups want to get the best investors in their deal, you'd start to lose the top. We have a suspicion that the whole thing might eventually unravel. So we believe—although we haven't tested it—that we cannot charge a transaction fee to either the big investors or to the company. Everybody thinks that's what we're going to do, but we've pretty much foresworn ever doing it because we believe it won't work as a marketplace if that happens.

At the same time, there is no question that there are people who are not that sophisticated as investors and wouldn't know how to sort through the companies. Those are the guys we think we wouldn't have any problem charging because we would be providing access and data and investment advice. That said, we think crowdfunding is going to be a small piece of the pie. It will get outsized attention because it has broad appeal right now and it's a piece of fundraising that can be in the public eye. So, it will be something we'll offer—there's money in it and it's a transaction based compensation we can take without being a broker dealer. But, I think it will probably be only a very small part of the funding pie.

Co-investing was a second option for AngelList to include in its business model. Laws elaborated:

It's written into the JOBS Act that we can co-invest. We have done some experimenting, and always announced it so that we were being transparent. The way we handled it was to go last, so that if we didn't invest, it wouldn't be perceived as a negative signal. We would ask the founders about the possibility of having an allocation up front, make our decisions behind the scenes, and then just before closing, say we'd take that last $100,000 or whatever allocation. We co-invested for a while, but we stopped so we could focus more on scaling the site quickly. We had some interesting results, but the problem is that we can't create a track record on it in time to matter.

AngelList Talent and other ancillary services were another potential source of revenue for the company. By the spring of 2013, introductions for AngelList's recruiting product exceeded introductions for financings. One founder who raised funds for his startup through AngelList noted, "The hiring portion of AngelList came out of nowhere and totally took off! We found 10 people on it and hired one. The quality is great—better than on LinkedIn or any other channel. Now, it's free, but I would definitely pay for it." In addition to charging for recruiting, the AngelList team believed it could provide a suite of services for startups that could generate revenue. Nivi felt the concept fit well with the company's goal of being like a Craigslist for startups. He explained, "In general, we just want to be the matchmaker for any kind of business function, whether it's for getting your advisor, getting your lawyer, getting recruiting, getting press, or finding office space. It all goes back to taking a question that entrepreneurs might ask you and bringing it all online." Graham Jenkin, product and design lead for AngelList, had previously managed the user experience for Google Ads and Commerce. He too related the business model to AngelList's mission noting, "We're here to help startups get up and running. The market doesn't see it yet, but a Craigslist-like suite of services is a responsibility." (See **Exhibit 10** for summary data on selected job search and recruiting companies.)

Finally, Ravikant believed there was an opportunity to market the data AngelList collected through its platform. He commented:

We could potentially monetize the data itself but that would probably be a very secondary revenue stream. We've started pulling up some interesting data at Angel.co/ valuations—graphs that show the valuations of companies that have at least one investor commitment, broken down by market and location, incubator and time. Similarly we have graphs on salary and equity for companies that are recruiting—all kinds of fun data. But, it's hard to sell data. And, even though we have the largest data set in space it's by no means complete so it would be hard to draw conclusions from it.

Regardless of the model they chose for AngelList, Nivi and Ravikant were optimistic about its future. Jeff Fagnan, a partner in the technology group at Atlas Venture, agreed. He commented:

> My first investment was made as a personal angel investment, when Venture Hacks originated. I worked closely with Nivi and Naval as the business model evolved. Since the initial launch of AngelList, Atlas has invested a significant amount of money and has played an important role in the company creation process. Our investment in AngelList was predicated on making venture-like returns.

Media outlets had been reporting that AngelList was in discussions to raise a new round of financing. In mid-December 2012, *TechCrunch* wrote that AngelList was raising funds at an implied valuation of over $150 million through investors that might include Google Ventures. In June 2013, *Forbes* reported that AngelList was raising funds from venture capitalists—including Atlas Venture, Draper Fisher Jurvetson, Google Ventures, and Kleiner Perkins Caufield & Byers—as well as angel investors from its own site. While the total value of the round was not disclosed in the *Forbes* article, a multi-million dollar portion was reportedly being made available to certain investors on the AngelList site.[37] In both cases, the firm declined to comment. The one thing Ravikant was certain of was that, "we will never knowingly screw over our startups."[38] As he recently noted, "It's a work in progress. We've only been at it three years. It's a ten year mission. It's going to take us a long time to nail it."[39]

Exhibit 1 Venture Capital Investors Ranked By Number of Introductions Requested

1. General Catalyst – 64 intros
2. Atlas Venture – 61 intros
3. Bessemer – 60 intros
4. First Round – 53 intros
5. Charles River – 44 intros
6. IDG Ventures – 41 intros
7. Partech – 40 intros
8. Accel – 40 intros
9. Andreessen Horowitz – 39 intros
10. Polaris – 39 intros
11. Index – 34 intros
12. Spark – 27 intros
13. Redpoint – 26 intros
14. High Line – 23 intros
15. GRP – 23 intros
16. Highland – 22 intros
17. Balderton – 21 intros
18. Metamorphic – 20 intros
19. DFJ – 20 intros
20. Floodgate – 19 intros
21. Mayfield – 17 intros
22. Sequoia – 16 intros
23. Matrix – 16 intros
24. Shasta – 14 intros
25. Google Ventures – 14 intros

Source: Michael Arrington, "Venture Capitalists May Hate AngelList, But They're Still Using It," TechCrunch, March 23, 2011, available at http://techcrunch.com/2011/03/23/venture-capitalists-may-hate-angellist-but-theyre-still-using-it, accessed May 10, 2013.

Exhibit 2 Influential Angel Investors on AngelList

Well-known CEOs or operators who invest on the side:

Dave Morin, CEO of Path
Keith Rabois, COO of Square
Kevin Rose, formerly of Milk and Digg; now at Google
Max Levchin, co-founder of PayPal; founder of Slide
Paige Craig of Betterworks
Matt Mullenweg of Automattic
Marissa Mayer of Google and Yahoo!
Joshua Schachter of Delicious and Tasty Labs
Sizhao Yang of Betterworks and MyMiniLife/FarmVille

Others with extensive startup and operating experience:

Jonathan Abrams of Friendster
Auren Hoffman of Raplef
Even Williams of Twitter
Gil Penchina, formerly CEO of Wikia
Ben Ling, COO at Badoo and formerly of Facebook and Google
Jason Calacanis of Mahalo
David E. Weekly of PBworks
Mitch Kapor, founder of Lotus

Professional Angels/ Super Angels/ Micro-VCs
Jeff Clavier of SoftTech VC
Chris Dixon of Founder Collective
David Lee of SV Angel
Dave McClure of 500 Startups
Manu Kumar of K9 Ventures
Aydin Senkut of Felicis Ventures

Others who run incubators or accelerators
Joshua Baer of Capital Factory
Mike Jones of Science
Thomas Korte of AngelPad

Source: Tomio Geron, "The Most Influential Angel Investors on AngelList," Forbes, May 1, 2012, available at http://www.forbes.com/sites/tomiogeron/2012/05/01/the-most-influential-angel-investors-on-angellist/, accessed May 10, 2013.

Exhibit 3 Bryce Roberts 2011 Blog Post

Why I Deleted My AngelList Account

Yesterday I deleted my AngelList account. Doing so generated a lot of questions on Twitter, in email and from the press so I want to explain myself.

Its a decision I've been wrestling with for the last few months as I've found the service increasingly not matching my investment philosophy. That's not to say the service isn't a valuable one for entrepreneurs or even certain kinds of investors. I believe that it can be. Its just not a fit for me.

For those not familiar, AngelList's promise is an interesting one- connect entrepreneurs to an increasingly large base of angel and venture investors while simultaneously exposing those investors to a stream of dealflow that's been vetted by the AngelList team. That was a promise I could get behind, so I joined the service about a year ago and have been seeing 3 to 5 companies a week ever since.

Its not the emails, the companies or the filtering AngelList does that isn't a fit for me it's the investment style they espouse that finally pushed me to press delete on my account.

Though there may be more depth to it, I thought this quote from Naval sums up their investment style pretty well:

Making an investment is like throwing darts in the dark.

Now, they've provided a presentation that goes into more depth on specifics but his statement captures a very real vibe I get from the service. At the earliest stages, its nearly impossible to pick the next Google so throw a lot of darts in the dark and hope you hit it. That high velocity, light touch style is certainly a viable approach to investing. Its just not my style.

I tend towards a more concentrated approach to seed investing where we make fewer, larger, investments and take an active role in working with the companies we fund. Frankly, I just don't buy the notion that making an investment is akin to throwing a dart in the dark. Worse, I think its a dangerous idea to promote. The best angel and venture investors are consistently good. Think Mike Moritz, John Doerr, Jim Breyer, Fred WIlson, Peter Fenton, Danny Rimer, Reid Hoffman and the like are just exceptionally good at throwing darts in the dark? I don't.

The way AngelList deals with this uncertainty around being unable to clearly spot winners early on is the second place the service and I diverge. Given that most companies seeking funding at this stage have little to no revenue, low user numbers and light usage data AngeList puts a tremendous amount of weight on something they call "social proof". Nearly every email they send includes names of people or firms who've committed to invest. They put that information right in the Subject line. Its reenforced in the first paragraph or two of the email as well. On the surface this seems like one reasonable data point, among many, to weigh when making an investment decision but its AngelList's way of pushing social proof that bothers me. Scoble summed up the vibe I get from the service pretty well when he said:

Investors tend to be pack animals and tend to want to get in on "hot deals." AngelList makes the hot deals happen fast.

Maybe I have too thin of skin, but getting called a pack animal bugs me. Unfortunately, that's the vibe I've had from most of the AngelList emails I've received. Over the past year I've been able to tune it out, but I've noticed a distinct change in the tone of the overall market in recent months. "Social proof" is turning to a form or peer pressure where angels feel compelled to invest for fear of missing the boat everyone else is getting on. No one wants to be left on the dock when the next Google leaves port. Relying on other smart investors to make a decision, then jumping on their coattails, is definitely one way to invest it's just not one I agree with.

The last line of the quote above touches on the final reason I decided to delete my account.

Real or perceived, organic or manufactured AngelList is in the business of generating heat. As I've said here and elsewhere, I tend to be interested in ideas and companies that most investors aren't, so heat is generally a false signal for me. But heat does sway many investors.

Unfortunately, I've been seeing AngelList increasingly use their ability to create heat to push other types of deals on their members than just angel investments. In the last few months I've seen a couple venture funds raising money on AngelList as well as a number of later stage rounds of financing. Subtle inclusions for sure, but a very different kind of investment product than AngelList members are tuned to evaluate. Generating heat for Series B companies or for venture funds isn't the kind of investing the AngelList crowd has been trained for. More to the point, it feels like when those kinds of opportunities pass through, AngelList becomes the greater fool's list.

As I said right up front, I think AngelList is a great service for entrepreneurs, even a good service for certain kinds of investors. Just not me. And that's why I deleted my account.

Source: Bryce Roberts, "Why I Deleted My AngelList Account," Bryce Dot VC, February 2011, available at http:/ / bryce.vc/ post/ 3520840379/ why-i-deleted-my-angellist-account, accessed December 18, 2012.

Exhibit 4 Breakdown of Funding by Industry and Geography

Industry

Consumer Internet:	$644 Million (Includes $337MM from social media; $213MM from mobile; and $207 from e-commerce)
Enterprise:	$171MM
Clean Tech	$83.7MM
Education	$42.3MM

Geography

Silicon Valley:	$572MM (Includes $458MM from San Francisco-based companies)
New York	$136MM
Los Angeles	$78MM
Massachusetts	$45.3MM
Austin	$$25.2MM
International:	
Europe	$48.2MM
Canada	$25.1MM
Russia	$14.8MM
India	$12.7MM

Source: Sarah Lacy, "Who Needs a Walk Down Sand Hill Road? AngelList Alums Have Raised $1.1B," PandoDaily, August 8, 2012.

Exhibit 5 Summary Data from Fenwick & West 2012 Seed Financing Survey

		2010	2011	2012
% Companies funded in prior year that raised Series A in next year		NA	45%	27%
% Companies funded in prior year that raised follow-on funding		NA	12%	23%
% Companies funded:	Software	29%	25%	34%
	Internet/Digital Media	71%	75%	66%
Lead Investor Breakdown:	Seed Funds	43%	46%	46%
	Professional Angels	31%	28%	20%
	VC Funds	26%	27%	34%
Financing Structure:	Preferred Stock	69%	59%	67%
	Convertible Debt	31%	41%	33%
Median Pre-Money Valuation:	Preferred Stock	NA	$3.8M	$4.6M
	Convertible Debt	$4.0M	$7.5M	$6.0M
Median Size of Deal:	Preferred Stock	$1.1M	$1.0M	$1.36M
	Convertible Debt	$0.7M	$1.0M	$0.9M

Source: "2012 Seed Financing Survey," Fenwick & West LLP, 2013.

Exhibit 6 Ravikant and Laws at the White House after the JOBS Act signing ceremony

Exhibit 7 JOBS Act Provisions

JOBS Act provisions at a glance

Title I - Reopening American Capital Markets to Emerging Growth Companies	Establishes the Emerging Growth Company IPO "on-ramp."	Effective immediately
Title II - Access to Capital for Job Creators	Lifts ban on general solicitation and advertising for Regulation D, Rule 506 offerings and Rule 144A offerings. (Note: This includes section 201c which carved out the functions platforms that introduce investors and companies can do. That section needed no further SEC regulation and become law as soon as it was signed.)	Certain rules required within 90 days of enactment of the Act
Title III - Crowdfunding	Registration exemption for limited-size offerings to be sold in small amounts to a large number of investors.	Certain rules required within 270 days of enactment of the Act
Title IV - Small Company Capital Formation	Increases the amount of capital that can be raised under Regulation A from $5 million to $50 million.	No deadline for rules
Title V - Private Company Flexibility and Growth	Raises the threshold for mandatory registration from 500 shareholders of record to 2,000 shareholders of record as long as there are less than 500 "non-accredited" investors.	Effective immediately
Title VI - Capital Expansion	Raises the threshold for mandatory registration from 500 shareholders of record to 2,000 shareholders of record and raises the thresholds for a non-listed bank or bank holding company to terminate its registration from 300 shareholders of record to 1,200 shareholders of record.	Rules required with one year of enactment of the Act

Source: "An Overview of the JOBS Act," McGladrey LLP, May 1, 2012, p.2, available at http://mcgladrey.com/pdf/jobs_act_overview.pdf, accessed May 20, 2013.

Exhibit 8 Top Startup Incubators and Accelerators

Rank	Incubator/ Accelerator	City	Note
1	Y Combinator	Mountain View, Calif.	Dropbox and Airbnb are just the biggest names in portfolio. Investors fight to invest in YC companies at sky-high prices. Founded in 2005.
2	TechStars	Boulder, Boston, New York, Seattle, San Antonio	Founded in 2007, it has grown to five cities, but keeps batches small to give each startup extra attention. Has broader impact by helping other incubators.
3	DreamIt Ventures	Philadelphia, New York, Israel	Founded in 2008, it has programs in Philadelphia, New York and Israel, with 65 portfolio companies, including SCVNGR/Level Up.
4	AngelPad	San Francisco	Founded by seven ex-Googlers in 2010; hot portfolio, but too early to value many of the companies.
5	Launchpad LA	Los Angeles	Founded in 2009, 23 companies have gone through program, 19 have been funded, 5 acquired.
6	Excelerate Labs	Chicago	Founded in 2010, the firm has graduated 20 companies so far. Mentors include local Groupon investor Brad Keywell.
7	Kicklabs	San Francisco	Stage-agnostic accelerator focuses on helping startups close first deals with large brands and agencies.
8	500 Startups	Mountain View, Calif.	Founded in 2010. Also has seed fund in addition to incubator. Focus on startups from overseas as well as US.
9	TechNexus	Chicago	Doesn't have time limits on companies it accepts. Invests in its companies on case-by-case basis. Founded in 2007.
10	Tech Wildcatters	Dallas	New incubator, but has some promising startups
	Others considered: The Brandery, Capital Factory, ERA Accelerator, LaunchBox Digital, NYC Seed Start		

Source: Tomio Geron, "Top Startup Incubators And Accelerators: Y Combinator Tops With $7.8 Billion in Value," Forbes, April 30, 2012, available at http://www.forbes.com/sites/tomiogeron/2012/04/30/top-tech-incubators-as-ranked-by-forbes-y-combinator-tops-with-7-billion-in-value/, accessed January 22, 2013.

Exhibit 9 Top Crowdfunding Sites

1. Kickstarter
Kickstarter is a site where creative projects raise donation-based funding. These projects can range from new creative products, like an art installation, to a cool watch, to pre-selling a music album. It's not for businesses, causes, charities, or personal financing needs. Kickstarter is one of the earlier platforms, and has experienced strong growth and many break-out large campaigns in the last few years.

2. Indiegogo
While Kickstarter maintains a tighter focus and curates the creative projects approved on its site, Indiegogo approves donation-based fundraising campaigns for most anything — music, hobbyists, personal finance needs, charities and whatever else you could think of (except investment). They have had international growth because of their flexibility, broad approach and their early start in the industry.

3. Crowdfunder
Crowdfunder is the crowdfunding platform for businesses, with a growing social network of investors, tech startups, small businesses, and social enterprises (financially sustainable/profitable businesses with social impact goals).

Crowdfunder offers a blend of donation-based and investment crowdfunding from individuals and angel investors, and was a leading participant in the JOBS Act legislation. The company has localized crowdfunding and investment to help develop entrepreneurial ecosystems and access to capital outside Silicon Valley. Its unique CROWDFUNDx initiative in cities across the US and Mexico connects local investors with local entrepreneurs both online and offline, and does the work to validate top local companies in each city across the US and Mexico.

4. RocketHub
Rockethub powers donation-based funding for a wide variety of creative projects.

What's unique about RocketHub is their FuelPad and LaunchPad programs that help campaign owners and potential promotion and marketing partners connect and collaborate for the success of a campaign.

5. Crowdrise
Crowdrise is a place for donation-based funding for Causes and Charity. They've attracted a community of do-gooders and and fund all kinds of inspiring causes and needs.

A unique Points System on Crowdrise helps track and reveal how much charitable impact members and organizations are making.

6. Somolend
Somolend is a site for lending for small businesses in the US, providing debt-based investment funding to qualified businesses with existing operations and revenue. Somolend has partnered with banks to provide loans, as well as helping small business owners bring their friends and family into the effort.

With their Midwest roots, a strong founder who was a leading participant in the JOBS Act legislation, and their focus and lead in the local small business market, Somolend has begun expanding into multiple cities and markets in the US.

7. appbackr
If you want to build the next new mobile app and are seeking donation-based funding to get things off the ground or growing, then check out appbackr and their niche community for mobile app development.

8. AngelList
If you're a tech startup with a shiny lead investor already signed on, or looking for for Silicon Valley momentum, then there are angels and institutions finding investments through AngelList. For a long while AngelList didn't say that they did crowdfunding, which makes sense as they have catered to the investment establishment in tech startups, but now they're getting into the game. The accredited investors and institutions on AngelList have been funding a growing number of select tech startup deals.

9. Invested.in
You might want to create your own crowdfunding community to support donation-based fundraising for a specific group or niche in the market. Invested.in is a Venice, CA based company that is a top name "white label" software provider, giving you the tools to get started and grow your own.

10. Quirky
If you're an inventor, maker, or tinkerer of some kind then Quirky is a place to collaborate and crowdfund for donation-based funding with a community of other like-minded folks. Their site digs deeper into helping the process of bringing an invention or product to life, allowing community participation in the process.

Source: Chance Barnett, "Top 10 Crowdfunding Sites for Fundraising," *Forbes*, May 8, 2013, available at http://www.forbes.com/sites/chancebarnett/2013/05/08/top-10-crowdfunding-sites-for-fundraising/, accessed May 13, 2013.

Exhibit 10 Summary Data on Selected Job Search and Talent Companies

Company	Business Description	Public or Privately Held	Customers	Members	Unique Monthly Visitors	Countries	Languages	Job Listings	2012 Revenue	2012 Net Income	2012 Market Cap	Employees	Notes:
LinkedIn Corporation	Operates world's largest professional online network	Public	NA	238MM	143 MM	20 offices; available in 200 countries	20	1.73MM (2012 estimate)	$972.3MM	$21.6MM	$10,317.8MM	4,200	
Monster.com	Largest job search engine in the world; in 2012 held the leading traffic position in the U.S. for career services and development	Public (Subsidiary of Monster Worldwide, In.	300,000	> 63 MM job seekers per month	21 MM	40 offices	15	> 1 million	$890.4MM	$(258.7MM)	$624.5MM	5,000	Also owns BeKnown, a professional networking application available on Facebook
XING AG	Social network for professionals, based in Germany	Public		13MM (over 6MM in Germany)	4.2 MM	Used by people in 200 countries	17	NA	$96.8MM	$12.1MM	$311.0MM	513	Financial data based on 12/31/12 conversion rate of 1.3203 USD per Euro
The Viadeo Group	Second largest professional social networking group. Based in France, comprised of the brands Viadeo, ApnaCircle (India), and Tianji (China)	Private	NA	50MM	NA	12 offices; available in 226 countries	7	NA	$65MM (2011 est.)	NA	NA	400	
Career Builder	Largest online job site in the U.S.	Jointly owned by Gannett, Tribune, & McClatchy	300,000	NA	24MM	Operates sites in 22 countries, available in 60 markets	NA	1.6 MM	NA	NA	NA	2,000	
Dice	Leading recruiting and career site for technology and engineering professionals	Public (Subsidiary of Dice Holdings, Inc.)	NA	NA	2.0 MM	NA	NA	85,275	$133.4MM (Tech & Clearance Segment)	$51MM Operating Income (Tech & Clearance Segment)	NA	534 (Parent company total)	Financial data for Tech & Clearance Segment. Segment includes Dice.com, ClearanceJobs.com, and Slashdot Media.
Indeed	#1 job site worldwide, aggregating data from multiple listings	Private (Subsidiary of Recruit Holdings Co.)	NA	NA	100MM	6 offices; available in 50 countries	26	NA	NA	NA	NA	266 (Parent company total)	
Simply Hired	Online job aggregator	Private	NA	NA	30MM	24	12	NA	NA	NA	NA	NA	
Craigslist	Online classified service	Private	NA	NA	60MM (U.S. alone)	700 local sites in 70 countries	13	2 MM new jobs listings each month	$126MM	$103MM	NA	30	

Source: Company Web sites, annual reports, and 10-Ks. "Another Look at LinkedIn's Large Potential in Job Postings," TREFIS, July 3, 2013, available at <http://www.trefis.com/stock/lnkd/articles/194025/another-look-at-linkedins-large-potential-in-job-postings/2013-07-03>, accessed July 3, 2013. Kristin Ketteringham, Top Ten Employment Websites for Job Searching Online," Yahoo!, July 30, 2008, available at http://voices.yahoo.com/top-ten-employment-websites-jobs-searching-online-1722491.html?cat=3, accessed June 28, 2013. Eric Griffith, Jennifer Bergen, "The Best Job Search Websites," PC Magazine, June 4, 2013, available at http://www.pcmag.com/slidehow/story/294523/the-best-job-search-websites, accessed June 28, 2013. Peter M. Zollman, "Craigslist 2012 Revenues Increase 9.7%; 'Big Four' Battle for Global Classified Lead," AIM Group, November 7, 2012, available at http://aimgroup.com/2012/11/07/craigslist-2012-revenues-increase-9-7-big-four-battle-for-global-classified-lead/, accessed June 28, 2013.

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UNconference

Track

UNCONFERENCE TRACK

TUESDAY, DECEMBER 3 – ESPACE DALHOUSIE – 4:30 pm to 9:00 pm

Linking entrepreneurs, accelerators, seed funds and crowdfunding platforms with investors and policy designers

OPENING

Mr. **Chris Arsenault**
Managing Partner
iNovia Capital

Dr. **Gilles Duruflé**
President
Public Policy Forum on Venture Capital

Mr. **John Stokes**
Partner
Real Ventures

FUND RAISING THROUGH PLATFORMS AND SOCIAL MEDIA

A panel consisting of managers of online platforms and VCs, a VC fund raising its fund through social media and a successful entrepreneur who financed her company through social media. What is new? What does each bring to the ecosystem? What are the benefits for entrepreneurs and investors?”

Panelists

Ms. **Sophie Forest**
Managing Partner
Brightspark Venture

TUESDAY, DECEMBER 3 – ESPACE DALHOUSIE – 4:30 pm to 9:00 pm

Ms. **Ariel Garten**
CEO
InteraXon

Mr. **Gadi Mazor**
General Partner, CTO
Our Crowd

Mr. **Alex Mittal**
Co-founder and CEO
Funders Club

Mr. **David Teten**
Partner
FF Venture Capital

Moderator

Mr. John Stokes
Partner
Real Ventures

PAIRS OF ACCELERATORS AND ENTREPRENEURS

A panel of accelerators and successful entrepreneurs they developed: what is unique in each of these accelerator models? Do the entrepreneurs on the panel agree? How do they migrate up the financing chain?

Panelists

Mr. **Marcus Daniels**
Managing Director
Extreme Startups

TUESDAY, DECEMBER 3 – ESPACE DALHOUSIE – 4:30 pm to 9:00 pm

Mr. **Danial Jameel**
Co-Founder
OOHLALA Mobile Inc.

Mr. **Ian Jeffrey**
Venture Partner, Real Venture & General Manager
Founder Fuel

Mr. **Sam Molyneux**
Founder and CEO
Sciencescape

Moderator

Mr. **Chris Arsenault**
Managing Partner
iNovia Capital

ACCELERATORS, VCS AND COMPANIES THAT BUILD COMPANIES

Four different models of seed funding: two accelerators, a company that builds companies and a VC fund that invests in platforms. What is unique about each of them? Why should they attract the best entrepreneurs and investors?

Panelists

Mr. **Jason Della Rocca**
Co-Founder
Execution Labs

Mr. **George Kellerman**
Partner
500 Startups

TUESDAY, DECEMBER 3 – ESPACE DALHOUSIE – 4:30 pm to 9:00 pm

Mr. **Éric Martineau-Fortin**
Founder & Managing Partner
White Star Capital

Mr. **Helge Seetzen**
CEO
Tandem Launch

Moderator

Mr. **Jean-Sébastien Cournoyer**
Partner
Real Ventures

BUILDING ECOSYSTEMS AROUND THE WORLD

Two initiatives to build the tech ecosystem in Mexico and Latin America: vision and lessons learnt.

Panelists

Mr. **Rogelio de los Santos**
Managing partner and founder
Alta Ventures inc.

Mr. **Rhett Morris**
Director of Endeavor Insight
Endeavour

Moderator

Dr. **Gilles Duruflé**
President
Public Policy Forum on Venture Capital

TUESDAY, DECEMBER 3 – ESPACE DALHOUSIE – 4:30 pm to 9:00 pm

GOVERNMENT SUPPORT FOR NEW MODELS

How governments can contribute.

Panelists

Mr. **Dominique Bélanger**
Vice President Strategic Investments & Initiatives
Business Development Bank of Canada

Mr. **Enrique Jacob Rocha**
President
National Institute for Entrepreneurship
Mexico

Moderator

Mr. **Alan MacIntosh**
General Partner
Real Ventures

UNCOCKTAIL – Food will be served

Fund raising through platforms and social media

Panelists

Ms. **Sophie Forest**
Managing Partner
Brightspark Venture

Sophie Forest is a managing partner at Brightspark Ventures since 2003. She has close to 20 years of experience in the high-tech venture capital industry. Prior to joining Brightspark, she held the position of Partner at CDP Capital Technology from 1996 to 2003. Sophie has contributed to the creation, growth and exit of a large number of technology companies in Canada and the US. Sophie sits on the Board of Directors of a number of technology startups amongst them eXludus Technologies, Hopper, Jewlr, Jazinga and Protecode. Brightspark has begun focusing on "equity crowdfunding with accredited investors" and is leading the charge into the new online-VC market in Canada.

Ms. **Ariel Garten**
CEO
InteraXon (Canada)

Ariel Garten, Founder and Chief Executive Officer, InteraXon Inc. If there ever was a gap between science, art, business and technology, Ariel has closed it. Her work converts the workings of the mind into tangible solutions. Ariel has researched at the Krembil Neuroscience Institute studying hippocampal neurogenesis, displayed work at the Art Gallery of Ontario, DeLeon White Gallery and opened Toronto Fashion Week. The intersections of these diverse interests have culminated into various lectures with topics such as “The Neuroscience of Aesthetics” and “The Neuroscience of Conflict”, featured on TVO's Big Ideas. Referred to as the “Brain Guru”, Ariel has also run a successful real estate business, spent time as the designer of a Canadian fashion boutique, and is a practicing psychotherapist. In 2007, Ariel co-founded InteraXon, one of the world's leading companies creating brainwave controlled products and experiences. InteraXon debuted with the creation of "Bright Ideas", Ontario's feature showcase at the Vancouver 2012 Winter Olympics, where visitors in Vancouver got to control the lights on the CN Tower, Niagara Falls and the Canadian Parliament buildings, with their minds, from across the country. Ariel and her team are merging technology, neuroscience, art and design. Muse, InteraXon’s brain-sensing headband, just one example of this innovation, allows consumers to interact with their smart phone and tablet using the power of their mind. Ariel and Muse are regularly lauded in global media- CNN, CNET, CNBC, Reuters, Tech Crunch, Wall Street Journal Tech for creating what Huffington Post calls "the beautiful headband that will make you smarter". Ariel regularly lectures at MIT, Singularity University and FutureMed. Her lecture on Ted.com has over 250,000 views and she gave this year's opening keynote at Le Web, Europe's biggest tech conference. Ariel is lauded for her style and inspiration as much as her role at the helm of a technology company that is bringing the future to life.

Panelists

Mr. **Gadi Mazor**
General Partner, CTO
Our Crowd

Gadi Mazor served in the Talpiot Intelligence program (8200) and finished IDF's officers course with extreme honors. He received a B.Sc. and M.Sc. in Mathematics and Probability with Distinction through the Addi Lautman Interdisciplinary Program for Fostering Excellence at the Tel Aviv University. Gadi founded and managed three startup companies in the fields of character and voice recognition and wireless communications, and sat on an advisory board of RIM (BlackBerry). Gadi holds patents on various aspects of wireless communications, and served on the US Senate committee that defined the US public alert system. His companies sold wireless solutions to over 1,600 enterprises, including the US Senate and House of Representatives, CitiGroup, Coca Cola, Raytheon, and many others. In the spring of 2013, Gadi was awarded the entrepreneur of the year award from Blackberry. Gadi is a marathon runner and was one of the crazy people who swam the length of the Sea of Galilee in the summer of 2010.

Mr. **Alex Mittal**
Co-founder and CEO
Funders Club

Mr. Mittal is the co-founder & CEO of FundersClub, the world's first online VC firm. Before FundersClub, Mr. Mittal was the founding CEO of Innova Dynamics, a VC-backed touchscreen hardware company, leading the company from university laboratory to commercialization, securing design-in collaborations with today's major consumer electronics companies. Previously, he was the founding CTO of Crederity, a VC-backed identity and credential verification enterprise software company, and co-founded and led Penn Engineers without Borders, a non-profit that has provided running water to thousands of people worldwide. Mr. Mittal currently serves on the Board of Directors of three companies, holds degrees in economics and engineering from Wharton and the University of Pennsylvania, and is an alumni of Y Combinator. He was recently named an advisor to First Round Capital's Dorm Room Fund, and is a columnist for Inc. Additionally, Mr. Mittal has been featured in Forbes 30 under 30 in Tech, in BusinessWeek as one of America's Best Young Entrepreneurs, and in Silicon Valley's 40 under 40. Prior to his time as an entrepreneur, Mr. Mittal was active in science research, presenting at the 2002 Nobel Prize Ceremonies, and MIT Lincoln Laboratory named an asteroid after him for his work.

Panelist

Mr. **David Teten**
Partner
FF Venture Capital (USA)

David Teten (teten.com) is a Partner with ff Venture Capital and Founder and Chairman of Harvard Business School Alumni Angels of Greater New York. ff VC has made over 180 investments in over 70 companies since 1999. HBS Alumni Angels of NY is the second-largest angel network in New York. David led the first-ever study of best practices of venture capital and private equity funds in originating new deals and the first-ever study of VCs in creating portfolio company value. David is a frequent keynote speaker at conferences for investors, entrepreneurs, and executives. He has received the highest ratings of any speaker at three different conferences. He has published in Harvard Business Review, Institutional Investor, the Journal of Private Equity, etc., and is the lead author of The Virtual Handshake: Opening Doors and Closing Deals Online. He holds a Harvard MBA and Yale BA, both with honors.

Moderator

Mr. **John Stokes**
Partner
Real Ventures

Having spent much of his working life as an entrepreneur in the mobile, internet and media sectors, in markets as South Africa, Japan, Hong Kong, New Zealand and Malaysia, John has gained strong insight into how entrepreneurialism is developed and supported throughout the world. He has more than 15 years of experience, both as a founder and an investor, in start-ups and growth companies. He is a Partner at Real Ventures (which began life as "Montreal Start Up"), a seed stage venture capital firm that invests in internet, software, mobile, digital media, social and casual gaming startups. Prior to Montreal Startup, John founded Piermont Ventures, a Hong Kong based boutique investment and advisory business with a focus on media, technology and financial services. Earlier in his career, John held pivotal roles within the Wireless Industry such as Aethos Systems (acquired by Logica CMG (LSE: LOG)) (India, Taiwan, China, SEA) and Brightpoint Inc. (NASDAQ: CELL) and was Chief Operating Officer for Livedoor Group Inc., Japan's first free Internet Service Provider. John received his BSc. (Hons) from MMU (Manchester, UK) is a citizen of the UK and New Zealand and a Permanent Resident of Quebec, Canada.

Pairs of accelerators and entrepreneurs

Panelists

Mr. **Marcus Daniels**
Managing Director
Extreme Startups

As the Managing Director of Extreme Startups, Marcus is obsessed with developing world-class founders and producing a VC backed tech accelerator that graduates new ventures with the potential to become global leaders. Founded MeshSquared Ventures to educate and invest in digital product startups driven to accelerate to product-market fit. Former COO at TrendHunter.com, the world's #1 Trendspotting website with over 1 billion views & an innovation partner to Fortune 500 brands. Past VP Operations & Product Development at Frameworks, North America's leading retail QSR business intelligence software & eLearning company. Started up the eLearning division at AME Learning, a global business education company specializing in financial acumen training with patented interactive tools & technology. A digital native that started out by hacking together a BBS in 1989 that led him to co-found Fluid eNovations, an award winning web development agency. A former board member of the Canadian eLearning Enterprise Alliance, he sits on the board of directors of Youth In Motion (Canada's Top 20 Under 20) and is a Digital Strategy curriculum developer at University of Toronto SCS. Marcus holds an MBA from Queen's School of Business, a BA in Psychology & Economics from McGill University and completed the Venture Capital Executive Program from Haas School of Business, UC Berkeley.

Mr. **Danial Jameel**
Co-Founder
OOHLALA Mobile Inc.

Panelists

Mr. **Ian Jeffrey**
Venture Partner, Real Venture & General Manager
Founder Fuel

Ian is GM of FounderFuel and Venture Partner at Real Ventures. Originally from Montreal, he spent many years in Silicon Valley, and it was there in 2006 that he launched Radar (the first mobile photo sharing social network) when he was VP of Marketing and Communications at Tiny Pictures. Among many other awards, Radar was recognized as “Best Mobile Social Networking Service” by the Webby Awards. After the acquisition of Tiny Pictures by Shutterfly, Ian joined the team as Director of Marketing of its mobile and social team. There he launched Wink, a mobile service that lets users create photobooth-style prints directly from their iPhone using photos from Shutterly, Flickr and Facebook. Ian started his career in 2002 as half of the two-man team behind Nomad, the now defunct Street Intelligence Agency of Cossette Communications. Specialized in word-of-mouth marketing and insight generation, Nomad clients included the likes of Nike, Coca-Cola and McDonald’s.

Mr. **Sam Molyneux**
Founder and CEO
Sciencescape

Moderator

Mr. **Chris Arsenault**
Managing Partner
iNovia Capital

Chris Arsenault is Managing Partner at iNovia Capital and has been an early stage investor and entrepreneur for the last two decades. Chris currently serves as a director or observer on the boards of Fixmo, Gamerizon, Localmind, Luxury Retreats, Reflex Photonics, Well.ca and Woozworld. Chris is an active board member of the Canadian Venture Capital Association (CVCA), is Co-Chair of the Canadian Innovation Exchange (CIX) and is active Charter Member of Silicon Valley based C100 (the Top Canadians in the Valley organization). Before joining the firm in 2002, Chris founded, co-founded or funded a number of Software, Mobile and Consumer Internet technology start-up companies, including 2 spin-offs of telecom giants Microcell and Teleglobe. Chris is also proud to have been instrumental in the creation of the ENABLIS Entrepreneurial Network (a $30 million G8-sponsored venture capital seed fund). Chris' entrepreneurial and investment experience includes a number of notable exits that generated large shareholder returns, such as Airborne Entertainment, Corpernic.com, Wanted Technologies, i5 Inc., up2 Inc. and SIT Inc. His work in the mid 90's as founder and CEO of SIT provided him with the opportunity to play an important part in the initial growth of the Internet. As one of Netscape's first Development Partners, Integrator and International reseller, SIT's security products and dial-up technology eventually grew to become an integral part of Netscape's deployment. Chris believes that Entrepreneurship is a "state of mind", and thus part of one's core. It may be sleeping (waiting to be activated, nurtured or mentored), but it can't be taught or infused into a person. Entrepreneurship is not a profession; an entrepreneur has unique character traits that enable him/her to do amazing and impossible things.

Accelerators, VCs and companies that build companies

Panelists

Mr. **Jason Della Rocca**
Co-Founder
Execution Labs

Jason Della Rocca is the co-founder of Executions Labs, a first-of-its kind, hybrid game incubator and go-to-market accelerator that helps independent game developers produce games and bring them to market. Formerly, Jason was a game industry consultant focused on business and cluster development, working with game studios and organizations all over the world. Prior, he served as the executive director of the International Game Developers Association (IGDA) for nearly nine years, and was honored for his industry building efforts with the inaugural Ambassador Award at the Game Developers Conference. In 2009, Jason was named to Game Developer Magazine's "Power 50," a list which profiles 50 of the most important contributors to the state of the game industry. As a sought after expert on the game industry, Jason has lectured at conferences and universities worldwide. He also serves on various advisory boards and volunteer roles, such as co-chairing IGDA-Montreal, as an advisor to the ICT Practice of Foreign Affairs, Trade and Development Canada, and serving on the research management committee of the GRAND Network Center of Excellence.

Mr. **George Kellerman**
Partner
500 Startups

George used to be a firefighter (a real one) but now he helps 500 start fires and change the way startups get launched, funded, and grown. Prior to 500 he held senior positions at Dell Japan, Experian Interactive, and Yahoo Japan. He's also a recovering attorney, but he makes up for it by surfing and snowboarding as much as he can.

Panelists

Mr. **Éric Martineau-Fortin**
Founder & Managing Partner
White Star Capital

Eric has over 18 years of investment banking and VC experience. He was a founding member and Partner of Messier & Associés, a leading transatlantic boutique firm in the media and technology space and has been directly involved in more than 50 transactions valued in excess of $10 billion. Eric also previously worked in mergers and acquisitions at Merrill Lynch in New York and London as well as at ABN AMRO in corporate finance and private equity in Paris, London and Amsterdam. Eric has been doing early-stage investments with White Star Capital since 2007 and has led multiple investments including Ludia, Betaworks, Science and Execution Labs. Eric was born in Canada, is married to a French national and has two American daughters. He and his family divide their time between New York and Western Europe.

Mr. **Helge Seetzen**
CEO
Tandem Launch

Helge, technologiste primé, est un entrepreneur et une autorité reconnue mondialement en transfert technologique et en technologies d’affichage. En tant que Chef de la direction de TandemLaunch , il fournit aux inventeurs universitaires les ressources financières, humaines, matérielles de même que les liens privilégiés avec l’industrie afin de permettre la commercialisation de leurs idées. Ses succès antérieurs comprennent notamment la transformation d’une propriété intellectuelle universitaire au stade précoce en une technologie TV LED entièrement commercialisée. Brightside Technologies, sa compagnie précédente, a été acquise par Dolby Laboratories en 2007. Helge a à son actif plus de 40 brevets dans les domaines des technologies d’affichage et des appareils photo et vidéo.

Moderator

Mr. **Jean-Sébastien Cournoyer**
Partner
Real Ventures

JS Cournoyer is a VC, angel investor and entrepreneur. He is a co-founder and general partner of Real Ventures, Montreal Startup and Founderfuel. He previously was an EIR/investment professional with VantagePoint Venture Partners and also had a stint at la Caisse de Depot et Placement du Quebec. JS was an angel and ran finance, business development and marketing at Terrascale. JS graduated from Middlebury College with a BA in Physics where he also played hockey. He is the proud father of five wonderful children.

Building ecosystems around the world

Panelists

Mr. **Rogelio de los Santos**
Managing partner and founder
Alta Ventures inc.

Rogelio de los Santos, after founding and launching 7 companies as a serial entrepreneur, he now supports the venture capital industry in Mexico at the same time that he serves as Managing Partner of Alta Ventures Mexico and the Kickstart Seed program. Mr. de los Santos currently participates as a member of the Global Advisory Board of Babson College, as a member of the Board of ITESM, as a Director in MFM, Juxta Labs, Diverza and Fricaeco America, he is a Board member and mentor in Endeavor Mexico and serves on the board of Enlace E E, Mexico's top two entrepreneurial mentor organizations. During college Mr. de los Santos co-founded and was CEO of the national collegiate entrepreneurial organization called Generacion Empresarial Mexicana. Mr. de los Santos received a BS in Mechanical Engineering from Instituto Tecnologico y de Estudios Superiores de Monterrey (ITESM) in 1992 and a Master in Business Leadership from Duxx Graduate School of Business Leadership in 1998.

Mr. **Rhett Morris**
Director of Endeavor Insight
Endeavour

As the Director of Endeavor Insight, Rhett leads Endeavor's research on high-impact entrepreneurship and emerging markets, directs the measurement of Endeavor's impact and provides analytical support for Endeavor's internal operations.

Before joining the Endeavor Global team, Rhett worked as a consultant at Bain & Company. There, he was engaged on a variety of projects focused on international growth strategy development, customer segmentation and acquisition, new product development, and organization redesign. He first worked with Endeavor as a volunteer while living in Buenos Aires in the fall of 2009. His previous work experience also includes serving as the confidential assistant to the mayor of Baton Rouge, LA.

Rhett earned an MBA from Vanderbilt University in 2007 and a bachelor's degree in History from Louisiana State University in 2003.

Moderator

Dr. **Gilles Duruflé**
President
Public Policy Forum on Venture Capital

Gilles Duruflé is presently Executive Vice President of the Quebec City Conference and President of the Public Policy Forum. He is also an independent consultant advising venture capital and private equity funds, institutional investors and governments. He was until 2004 Senior Partner at CDP Capital Technology Ventures, the venture capital subsidiary ot the Caisse de dépôt et placement du Québec, in charge of the Funds of funds portfolio, investing in North American and European VC funds. He was previously Head of strategic studies at the Caisse de dépôt et placement du Québec. From 1979 to 1991, he worked as Senior Partner in strategic consulting firms in the CDC Group (Caisse des dépôts et consignations, Paris) in Europe and North America. He is a Vice-President of the Canadian Venture Capital Association (CVCA) and sits on the International Private Equity Valuation (IPEV) Board. M. Duruflé obtained his Masters in Philosophy from the CERP (Paris), his Ph.D. in Mathematics from the Paris VI University and the Diploma of the Centre d'Études des Programme Économiques (Ministry of Finance, Paris). He is a CFA and has published numerous books and articles on various subjects related to economics and finance.

Government support for new models

Panelist

Mr. **Dominique Bélanger**
Vice President Strategic Investments & Initiatives
Business Development Bank of Canada

Dominique Bélanger is Vice President, Venture Capital Strategic Investments and Initiatives. Before joining BDC in 2010, Dominique was co-founder and President of Gamerizon Studio, Inc. Before that he was Chief Financial Officer of the venture-backed Quazal Technologies, Inc. (acquired by Ubisoft). He also advised various technology companies and private investors on investments, financing, startups and restarts. Dominique began his professional career as a communications officer for the Canadian Armed Forces in 1994. He went on to carry out several IT strategy operationalization mandates across multiple industries for Deloitte Consulting in Houston, Texas. In 2003, he joined the VC firm Innovatech Montreal as Investment Manager, IT and Telecom. Following the privatization of Innovatech's portfolio by the Quebec government, he joined the Multiple Capital team to manage the portfolio on behalf of Coller Capital. Dominique currently manages relationships with Real Ventures, Build Ventures, Growlab, Founderfuel, Launch 36, TandemLaunch Technologies and Execution Lab on behalf of BDC. Dominique holds an undergraduate degree in Electrical Engineering from the Royal Military College of Canada as well as an MBA from the Université de Montréal business school, HEC Montréal, as well as a certificate in entrepreneurship from MIT.

Panelist

Mr. **Enrique Jacob Rocha**
President
National Institute for Entrepreneurship
Mexico

Originario de Naucalpan de Juárez, Estado de México, es Licenciado en Economía por la Universidad Anáhuac, y obtuvo el grado de Maestría en Administración Pública en el Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM).

En el Gobierno del Estado de México ha sido miembro del Gabinete Legal y Ampliado, en cuatro ocasiones: Coordinador General de Asuntos Metropolitanos (1997-1998); Director General del ISSEMYM (1999-2000); Secretario de Desarrollo Social (2001-2002); y Secretario de Desarrollo Económico en el Gobierno del **Lic. Enrique Peña Nieto** (2005-2009).

Como parte de su trayectoria política, fue electo Diputado por el Distrito XXIX en la LVII Legislatura del Estado de México, en donde fungió como Vicecoordinador del Eje Económico del Grupo Parlamentario del Partido Revolucionario Institucional; además de ser Presidente de la Comisión de Planeación y Gasto Público. De 1994 a 1996 ocupó la Presidencia Municipal de Naucalpan de Juárez, y de 1991 a 1993 se desempeñó como Diputado Federal por el Distrito 19 en la LV Legislatura.

Su trayectoria profesional lo ha llevado a ser Vicepresidente del Colegio Nacional de Economistas (2010-2012), Vicepresidente de la Liga de Economistas Revolucionarios de la República Mexicana (1998-2000) y Presidente de la Liga de Economistas Revolucionarios en el Estado de México (1987-1991).

Es autor de diversas publicaciones, entre las que destaca su más reciente obra, "Última Llamada: Una estrategia regional de desarrollo compartido frente a la globalización" (Edit. Porrúa), libro que escribió en coautoría con el Dr. Julio Reyes Pescador, y cuya principal aportación es la de proponer estrategias de desarrollo regional y nacional que contribuyan a dinamizar y reactivar las potencialidades económicas de México, partiendo desde el ámbito local, avanzando con ello en la edificación de una economía basada en el conocimiento, la innovación, la ciencia, la tecnología y la sustentabilidad.

Durante la campaña presidencial del Licenciado Enrique Peña Nieto, fue Vicecoordinador de Vinculación Empresarial; y posteriormente en el periodo de transición fue nombrado Coordinador del Programa Emprendedores hasta Diciembre de 2012 cuando fue designado nuevo titular de la entonces Subsecretaría para la Pequeña y Mediana Empresa de la Secretaría de Economía (SE). Actualmente es Presidente del Instituto Nacional del Emprendedor.

Moderator

Mr. **Alan MacIntosh**
General Partner
Real Ventures

Alan has 25 years of international business experience, with a focus on the wireless sector. He has been a field engineer (Schlumberger), product manager (HP), network operator (TIW), venture investor (GSM Capital) and entrepreneur (Acta) with highly successful mobile companies such as Saraïde, Oz Communications and Millenial Media. As Managing Partner at Acta he helped cofound Montreal Start Up and Real Ventures where he is a Partner. A native of Scotland, Alan is a lifelong skier and avid cyclist and holds a BSc (Hons) in Offshore Engineering from Heriot-Watt University and MBA from INSEAD.

Life Sciences

TRACK

Life Sciences Track

TUESDAY, DECEMBER 3 – ESPACE 400^{e} – 4:30 pm to 9:00 pm

Tech transfer and seed funding models in life sciences in the context of the changes in R&D strategies of pharmaceutical companies

FIRST PERIOD: PHARMACEUTICAL COMPANIES

Panelists

Mr. **Angus Grant**
Vice President Business Development and Global Alliances
Celgene Corporation (USA)

Ms. **Christine Grygon**
Head BI Partnering
Boehringer Ingelheim (USA)

Mr. **Ron Newbold**
Vice President Strategic Research Partnerships
Pfizer Inc. (USA)

Mr. **Steven Xanthoudakis**
Director, Licensing and External Research
Merck Research Labs (Canada)

Moderator

Mr. **Raphael Hofstein**
President and CEO
MaRS Innovation

TUESDAY, DECEMBER 3 – ESPACE 400e – 4:30 pm to 9:00 pm

SECOND PERIOD: INTERMEDIARIES

Panelists

Ms. **Natalie Dakers**
CEO
CDRD Ventures (Canada)

Ms. **Lita Nelsen**
Director of Technology Licensing Office
Massachusetts Institute of Technology (USA)

Mr. **Jon Soderstrom**
Executive Director
Office of Cooperative Research Yale University (USA)

Ms. **Cécile Tharaud**
CEO
INSERM Transfert (France)

Moderator

Mr. **Jerel Davis**
Operating Principal
Versant Ventures (USA)

THIRD PERIOD: VCs

Panelists

Mr. **Hubert Birner**
Managing Partner
TVM Life Science (Canada)

TUESDAY, DECEMBER 3 – ESPACE 400e – 4:30 pm to 9:00 pm

Mr. **Jens Eckstein**
President
SR One (USA)

Mr. **Brian Halak**
Partner
Domain Associates (USA)

Mr. **Denis Lucquin**
Managing Partner
Sofinnova Partners (France)

Mr. **Sander Van Deventer**
General Partner
Forbion Capital Partners (NL)

Moderator

Mr. **Cédric Bisson**
Venture Partner
Teralys Capital (Canada)

FOURTH PERIOD: THE ROLE OF GOVERNMENT MONEY

Panelists

Mr. **Cyril Frank**
CEO
Alberta Innovates (Canada)

Mr. **Juan Harrison**
Vice President New Frontier Science
Takeda Pharmaceuticals (USA)

TUESDAY, DECEMBER 3 – ESPACE 400^{e} – 4:30 pm to 9:00 pm

Mr. **Marc Leduc**
General director
Québec Ministry of Economy and Finance (Canada)

Mr. **Parimal Nathwani**
Vice President
MaRS Innovation (Canada)

Ms. **Susan Windham-Bannister**
President and CEO
Mass Life Science Center (USA)

Moderator

Mr. **Chris Coburn**
Vice President Research Venture and Licensing
Partners Healthcare (USA)

COCKTAIL RECEPTION

First period: pharmaceutical companies

Panelist

Mr. **Angus Grant**
Vice President Business Development and Global Alliances
Celgene Corporation

Angus J. Grant, PhD Vice President, Business Development and Global Alliances Celgene Corporation Angus Grant joined Celgene as Vice President Regulatory Affairs in September 2006, first to manage and grow the regulatory staff and function in the Summit NJ Headquarters, and then in the EMEA region. After 3 years as Head of EMEA RA, Angus has returned to the Summit NJ Headquarters as VP, Business Development and Global Alliances, where he has closed multiple innovative deals and built the Alliance Management function. Prior to joining Celgene, Dr. Grant was the Executive Director for Alliance Management for Novartis Oncology. In this position, he was responsible for managing business relationships with co-development and co-commercialization partners. Dr. Grant also supported the Business Development and Licensing (BD&L) function in evaluating new in-licensing opportunities. Prior to joining Novartis, Dr. Grant was Senior Director, Regulatory Affairs, Oncology Strategy with Merck KGaA/EMD Pharmaceuticals, and previously help positions in Regulatory Affairs at both Aventis Pharmaceuticals and SmithKline Beecham Pharmaceuticals. Prior to his industry experience, Dr. Grant served as a Senior Staff Fellow at the U.S. Food and Drug Administration Center for Biologics, Office of Therapeutics, where he focused on cellular and gene therapy regulation and continued his research, initiated while a post-doctoral fellow with the National Cancer Institute, on cytokine signal transduction and monoclonal antibodies. During this period, Dr. Grant co-chaired the first FDA-NIH Gene Therapy Forum. In addition to being published in science journals and other industry periodicals, Dr. Grant is actively involved in a number of industry and advocacy associations. Dr. Grant received his Ph.D. in Anatomy/Immunology from the Medical College of Virginia and completed a postdoctoral fellowship at the National Cancer Institute in Bethesda, MD.

Panelist

Ms. **Christine Grygon**
Head BI Partnering
Boehringer Ingelheim

Chris Grygon is Executive Director in the Business Development and Licensing group at Boehringer Ingelheim Pharmaceuticals. In this role, she is liaison to venture capital and investor communities for Boehringer globally. She also serves as Head of BI's internal CDx Center for Partnering and Knowledge, which has oversight for Companion Diagnostics partnering strategy in support of Boehringer's portfolio. Dr. Grygon has previously held the position of Acting Head, Global Licensing - Oncology, where she was responsible for strategy and evaluation around external alliances for Boehringer's oncology portfolio. Prior to that, she was Head, Technology Investments for North America, responsible for sourcing external innovation to support Boehringer's Research and Development functions. She has held positions as Executive Director of Biologics and Biomolecular Sciences, where she established and led a technology infrastructure group in support of the discovery of new protein therapeutics in collaboration with Boehringer's R&D group in North America and manufacturing groups in Europe. Her team was also responsible for enabling specialized technology platforms to facilitate innovative drug discovery research for BI worldwide. She has pharmaceuticals expertise in both small molecule and protein biotherapeutic drug discovery. Dr. Grygon obtained her B.S. degree in chemistry from the University of Delaware and her M.A. and Ph.D. degrees in chemistry from Princeton University. She is an inventor on five patents and an author on over twenty three peer-reviewed scientific publications. She was a 2008 finalist for the Connecticut Technology Council Women of Innovation, Research Innovation and Leadership Award. She is a member of Boehringer's Women's Leadership group, as well as the Healthcare Businesswoman's Association.

Panelists

Mr. **Ron Newbold**
Vice President Strategic Research Partnerships
Pfizer Inc.

Dr. Ron Newbold is Vice President, External R&D Innovation (ERDI), Americas and Europe. Ron and his group support established Worldwide Research & Development (WRD) alliances with numerous universities and biotechnology companies. The mission of the External R&D organization is to strengthen Pfizer's access to cutting edge science at institutions in the US and Europe in alignment with the needs of Pfizer's Research Units. Ron's group also has responsibility for the activities of The Pfizer Incubator and for Pfizer's global scouting activities. Ron brings to Pfizer significant experience in external partnering in the Life Sciences field from his previous activities in large Pharma as well as entrepreneurial start-up experience with 3 early-stage biotech companies. After receiving his PhD in Organic Chemistry from the University of Rochester and a postdoctoral fellowship with Nobel Laureate E.J. Corey at Harvard University, he joined Merck where he founded and led their Strategic Research Initiatives licensing team from 1996-2004. Ron earned an MBA from Columbia Business School in 2003. Following 14 years with Merck, Ron led business development for Sentigen Biosciences (founded by 2004 Nobel Laureate Richard Axel of Columbia University); Celldex Therapeutics (a spin-out from Medarex); and Auspex Pharmaceuticals, where he served as Chief Business Officer, prior to joining Pfizer in 2010.

Mr. **Steven Xanthoudakis**
Director, Licensing and External Research
Merck Research Labs (Canada)

Dr. Steven Xanthoudakis has 23 years of experience in the Pharmaceutical industry. He received his doctoral degree from the Department of Microbiology and Immunology at McGill University in 1990. Following post-doctoral training at the Roche Institute of Molecular Biology in New Jersey, he assumed the position of Research Investigator in the Department of Neurogenetics at Hoffman La Roche. He was recruited back to Montreal in 1996 to join Merck Canada as a Senior Research Scientist where he focused on advancing several early stage drug discovery programs in the Neuroscience, Respiratory and Cardiovascular disease areas. Since early 2007 he has been involved in coordinating Merck's Canadian and LATAM R&D out-reach programs. In his current position as Director, Business Development & Licensing for Merck Research Laboratories, his primary role is to build lasting relationships with the venture capital, biotechnology and academic research communities and to help foster partnering opportunities that align with Merck's strategic research and development goals across all therapeutic and technology areas. He has been instrumental in establishing a number of strategic alliances with Canadian Biotech Companies including Alectos Therapeutics, EnWave Corporation, Xenon Pharmaceuticals and Zymeworks, He currently manages Merck's Venture partnerships with Lumira Capital and Amorchem Financial. He also the acting Chair of the CQDM Strategic Orientation Committee. Dr. Steven Xanthoudakis is based out of the Merck Canada head office in Montreal, Canada

Moderator

Mr. **Raphael Hofstein**
President and CEO
MaRS Innovation

Dr. Raphael (Rafi) Hofstein joined MaRS Innovation President and CEO in June, 2009. Dr. Hofstein received his PhD and Master of Science degrees in Life Sciences and Chemistry from the Weizmann Institute of Science in Rehovot, Israel. His Bachelor of Science degree in Chemistry and Physics was attained from the Hebrew University in Jerusalem. Awards received while completing post-doctoral training and research at the Harvard Medical School in Boston in the Departments of Biological Chemistry and Neurobiology include the Hereditary Disease Foundation Fellowship in 1982-83, and the Chaim Weizmann Postdoctoral Fellowship in 1980-82. From 1999 to June 2009 Dr. Hofstein held the position of President and CEO of Hadasit Ltd., the technology transfer company of the Hadassah Medical Organization in Jerusalem. He has served as Chair of Hadasit BioHolding Ltd., publicly traded on the Tel Aviv Stock Exchange (TASE), since 2005. About MaRS Innovation MaRS Innovation (www.marsdd.com/mars-innovation) provides an integrated commercialization platform that harnesses the economic potential of the exceptional discovery pipeline of 14 leading Toronto academic institutions. MaRS Innovation is a non-profit organization with an independent industry-led Board of Directors, funded through the Government of Canada's CECR Program and contributions of its member institutions, as well as support from the Province of Ontario. MaRS Innovation Member Institutions: Baycrest Centre for Geriatric Care, Centre for Addiction and Mental Health Holland, Bloorview Kids Rehabilitation Hospital, MaRS Discovery District Mount Sinai Hospital, Ontario College of Art and Design, Ontario Institute for Cancer Research, Ryerson University, St. Michael's Hospital, Sunnybrook Health Sciences Centre, The Hospital for Sick Children, The New Women's College Hospital, Toronto Rehabilitation Institute, University Health Network,University of Toronto.

Second period: intermediaries

Panelist

Ms. **Natalie Dakers**
CEO
CDRD Ventures

Ms. Natalie E. Dakers President and Chief Executive Officer, CDRD Ventures Inc. Ms. Dakers is a leading figure in the Canadian biotechnology industry and currently serves as the President and Chief Executive Officer of CDRD Ventures Inc. after having spent the last seven years as the founding CEO of The Centre for Drug Research and Development (CDRD), an innovative national organization with a mandate to address the commercialization gap between early-stage technologies arising out of university-based research and private sector investment opportunities. Under Ms. Dakers' leadership, CDRD signed affiliation agreements with more than 20 major research institutions in Canada and around the world, and forged important strategic relationships with public and private sector partners including Pfizer, Johnson and Johnson, Roche, GlaxoSmithKline, Genome British Columbia and the Governments of British Columbia and Alberta. With over 20,000 square feet in specialized lab space and more than $15 million invested in state-of-the-art equipment, under Ms. Dakers leadership, CDRD built a team of over 85 employees, engaged close to 500 individual investigators, raised and secured approximately $115 million in funding, and was named a Centre of Excellence for Commercialization and Research (CECR) by the Federal Government. Ms. Dakers brings to the organization many valuable years of experience in the commercialization of technology, licensing, and intellectual property protection. Prior to leading the establishment of CDRD, Ms. Dakers was President and CEO of Neuromed Pharmaceuticals (Technologies) Inc., a private biopharmaceutical company developing drugs for chronic pain, anxiety, epilepsy and cardiovascular diseases. As co-founder and CEO, Ms. Dakers built the company from inception and raised three rounds of venture financing totaling approximately $70 million. Prior to this, Ms. Dakers managed technology transfer for the Life Sciences sector at the University Industry Liaison Office (UILO) at the University of British Columbia, where she was involved in the creation and spin-off of more than a dozen start-up high-tech and biotech companies. Ms. Dakers is active in a number of business and scientific organizations, including Past Chair of BC Biotech (now LifeSciences British Columbia), the association supporting and representing the province's biotech, medical device and life sciences community. Currently, Ms. Dakers is a board member of the Canada Foundation for Innovation (CFI), BIOTECanada, the International Science and Technology Partnership Canada (ISTP Canada) and the Department of Foreign Affairs and International Trade Life Sciences Advisory Board. Previously, Ms. Dakers also served on the Boards of Genome Canada, Genome BC, and the Michael Smith Foundation for Health Research. Ms. Dakers is an Adjunct Professor in UBC's Faculty of Pharmaceutical Sciences and a member of the Council of Canadian Academies' Expert Panel on Business Innovation. Ms. Dakers received a Peak Award for Performance and Excellence in 2004. In 2009, Ms. Dakers was the recipient of BIOTECanada's Gold Leaf Award for Industry Leadership.

Panelists

Ms. **Lita Nelsen**
Director of Technology Licensing Office
Massachusetts Institute of Technology

Lita L. Nelsen Lita Nelsen is the Director of the Technology Licensing Office M.I.T, where she has been since 1986. This office manages over 600 new inventions per year, negotiating over 100 licenses per year, and helping to start 25 new startups. Ms. Nelsen earned B.S. and M.S. degrees in Chemical Engineering from M.I.T. and an M.S. in Management from M.I.T. as a Sloan Fellow. Prior to joining the M.I.T. TLO she spent 20 years in industry, primarily in the fields of membrane separations, medical devices, and biotechnology. Ms. Nelsen was the 1992 President of the Association of University Technology Managers and was a founding board member of MIHR, an organization concerned with the use of IP in medical research for developing country diseases. Ms. Nelsen is widely published in the field of technology transfer and university/industry collaborations. She is a co-founder of Praxis, the UK University Technology Transfer Training Programme for which she was made a Member of the British Empire.

Mr. **Jon Soderstrom**
Executive Director
Office of Cooperative Research Yale University

Jon Soderstrom is currently the Managing Director of the Office of Cooperative Research at Yale University. The Office is responsible for commercializing inventions resulting from Yale's scientific research including patent license agreements and the formation of new business ventures. Since joining the Office in 1996, he has participated in the formation of more than 25 new ventures including polyGenomics, Molecular Staging (acquired by Qiagen), Agilix, Asilas Genomic Systems, Achillion Pharmaceuticals (NASQ: ACHN), PhytoCeutica, Protometrix (acquired by Invitrogen), Iconic Therapeutics, Applied Spine Technologies, HistoRx, VaxInnate, Affomix and Kolltan Pharmaceuticals. Collectively, these companies have raised over $500 million in professional venture capital. Prior to this position, Dr. Soderstrom was the Director of Program Development for Oak Ridge National Laboratory (ORNL) after serving for ten years as Director of Technology Licensing for Martin Marietta Energy Systems. In the Office of Technology Transfer, he directed a group of ten professionals responsible for negotiating licenses and Cooperative Research and Development Agreements (CRADAs). Dr. Soderstrom was a founding board member and past president of the Association of Federal Technology Transfer Executives as well as a member of the Licensing Executive Society and Association of University Technology Managers where he was the 2008 President, has served as Vice President for Public Policy and a member of the Board of Directors and Executive Committee. He is frequently asked to lecture and teach seminars on various aspects of the technology transfer process and economic development both within the United States and abroad. He has testified before Congress on technology transfer issues and served as an expert witness in patent infringement litigation. In addition to his professional accomplishments, Dr. Soderstrom was honored as the 87th "Point of Light" by President George H. W. Bush in March of 1990 for his volunteer activities helping to construct and rehabilitate low-income housing in East Tennessee. Dr. Soderstrom received his Ph.D. from Northwestern University in 1980 and his B.A. from Hope College in 1976.

Panelist

Ms. **Cécile Tharaud**
CEO
INSERM Transfert

Before joining Inserm Transfert as CEO in 2006, Cécile worked for 10 years in the pharmaceutical and biotechnology industry as Intellectual Property Director at Genset and COO at Valigen. She has also held interim management positions in biotech companies and worked as a consultant to venture capital firms. Cécile started her career in marketing and business development for the French subsidiaries of pharmaceutical groups Glaxo and SmithKline Beecham.

Cécile Tharaud has an engineer's diploma from the Ecole Polytechnique (Paris), an MBA from INSEAD and a PhD in Molecular Genetics and Immunology from the Institut National Agronomique-Paris Grignon. She is currently a member of the AERES Board (independent Evaluation Agency for Research and Higher Education) and sits on the Board of Directors of LFB SA.

Moderator

Mr. **Jerel Davis**
Operating Principal
Versant Ventures

Jerel Davis, PhD Jerel is an Operating Principal at Versant Ventures based in Vancouver, Canada. Jerel specializes in biopharma investing at Versant and plays operating or Director roles with a number of start-up companies, including Inception Sciences, Blueline Bioscience, and Quanticel Pharmaceuticals. He has also focused on executing structured acquisitions with large Pharmas for Versant's portfolio companies. Jerel joined Versant from McKinsey & Company where he was an Jr. Partner. During his six years with McKinsey, he advised healthcare corporations in pharmaceuticals, biotechnology, medical device, and molecular diagnostics. He has worked in a number of healthcare markets globally including the US, Europe, China, Russia, and India. Jerel was a post doctoral researcher at Stanford University until 2005 and a researcher at Amgen from 1999-2000. Jerel received a Ph.D. in Biological Sciences from Stanford University where he studied Genomics and Population Genetics and he earned a B.S. in Biology and Mathematics from Pepperdine University.

Third period: VCs

Panelists

Mr. **Hubert Birner**
Managing Partner
TVM Life Science

Before joining TVM Capital, he was Head of Business Development Europe and Director of Marketing for Germany at Zeneca. Hubert joined Zeneca from McKinsey & Company's European Health Care and Pharmaceutical practice. As a management consultant, he gained extensive experience in R&D management; marketing and sales; and joint venture structuring and business development. Dr. Birner was also an Assistant Professor for biochemistry at the Ludwig-Maximilians-University in Munich. In this capacity, he directed various research projects for large pharmaceutical companies. Dr. Birner holds an MBA from Harvard Business School and a doctoral degree in biochemistry from Ludwig-Maximilians-University Munich, where he graduated summa cum laude. His doctoral thesis was honored with the Hoffmann-La Roche prize for outstanding basic research in metabolic diseases.

Mr. **Jens Eckstein**
President
SR One

Dr. Eckstein comes to SR One from TVM Capital where he was a Venture Partner, Entrepreneur-in-Residence and appointed CEO and President of SelectX Pharmaceuticals. Prior to that, he was a General Partner in TVMs Boston life sciences practice where he focused on earlier-stage investments. He was a member of the Board of Directors for CoNCERT Pharmaceuticals, Enanta Pharmaceuticals, SelectX Pharmaceuticals, Rapid Micro Biosystems, Anchor Therapeutics, and an Advisor to Sirtris Pharmaceuticals. Jens was the founder of Akikoa Pharmaceuticals, a biotechnology start-up company focusing on hearing loss, and North Haven Systems, a life science IT company. Prior to joining TVM Capital, Jens led drug discovery programs at Enanta Pharmaceuticals, Inc. and Mitotix, Inc. He is the author of more than 25 scientific publications and holds several issued and pending patents. He was managing editor of Frontiers in Biosciences Current Topics in Lead Discovery and served as an editorial board advisor for IDrugs. Jens is an Advisor to the Alzheimer Research Forum (ARF), founding member of the Cure Dystonia Initiative Advisory Council (CDIAC) and a Kauffman Fellow.

Panelists

Mr. **Brian Halak**
Partner
Domain Associates

Brian joined Domain in 2001 and became a partner in 2006. He has been involved with new company creation and in establishing and directing Domain's new initiative in China in collaboration with Beijing Elite.

Present board memberships include Alimera Sciences, BioNano Genomics, Carticept Medical, Corridor Pharmaceuticals, Dicerna Pharmaceuticals, Domain Elite, Kona Medical and Oraya Therapeutics. He previously served on the boards of Cartiva, Eddingpharm, Esprit Pharma (until acquired by Allergan), GI Dynamics and Vanda Pharmaceuticals.

Prior to Domain, Brian was an associate with Advanced Technology Ventures where he participated in the firm's investments in Plexxikon, Percardia and Emphasys. Previous to that, he was a consultant at the Wilkerson Group, where he developed strategy for pharmaceutical and medical device companies. Brian received his BSE in bioengineering from University of Pennsylvania and his Ph.D. in immunology from Thomas Jefferson University.

Brian is currently a member of the Investment Advisory Council for Ben Franklin Technology Partners and BioAdvance, both seed-stage investment groups in Philadelphia. He also serves as an advisor to Elm Street Ventures.

Mr. **Denis Lucquin**
Managing Partner
Sofinnova Partners

Denis Lucquin is a Managing Partner and Chairman of Sofinnova Partners who specialises in life sciences, and cleantech investments. He joined Sofinnova in 1991. Denis began his career in academic research. For five years, he was in charge of the technology transfer department at the Institut National de la Recherche Agronomique (INRA), France's agricultural research institute. In 1989, he joined the venture capital industry as director of investments at Innolion (Crédit Lyonnais). He carried out many investments in Europe such as Nicox, Oxford Glycosciences, Oxford Molecular, PPL Therapeutics, Conjuchem, Exonhit, IDM, Innate Pharma and Ablynx (all of which successfully went public) and Novexel (sold to Astrazeneca), and Crop Design, Cerenis, and Noxxon. He recently invested in BioAmber, a developer of innovative technologies for molecules to the chemical industry. He actively supports all of these companies and acts or as acted as a board member for most of them. He is also a founder of Association France Biotech. He is a graduate in engineering from Ecole Polytechnique and Ecole du Génie Rural des Eaux et Forêts. He also has a degree in Innovation Management from the Université de Paris-Dauphine.

Panelist

Mr. **Sander Van Deventer**
General Partner
Forbion Capital Partners

At Forbion Capital Partners we invest in Life Sciences and Biomedical Technology companies developing world-class drugs and technologies, with a clear focus on product development. The Forbion team is specialized in the evaluation of late stage preclinical / early stage clinical development programs. We focus on companies that have innovative technologies and drug development programs with unique advantages over current treatments. Furthermore, we invest in medical device companies with a special focus on interventional devices in cardiology, gastroenterology and pulmonology that are close to market approval. Our involvement continues beyond the initial investment. We work closely with scientists, academic institutions, entrepreneurs and industry experts to accelerate the development and to optimize the commercial potential of our portfolio company's products and technologies.

Moderator

Mr. **Cédric Bisson**
Venture Partner
Teralys Capital

Cédric Bisson is venture partner at Teralys Capital where he leads activities in healthcare and life sciences. Teralys Capital is Canada’s largest technology-focused fund of funds financing private venture capital funds that invest in information technology, life sciences and cleantech companies. Until he joined Teralys, Mr. Bisson was managing partner for healthcare at iNovia Capital in Montreal and Calgary, a private venture capital firm aimed at entrepreneurship and company building. He was previously an associate principal at McKinsey & Company, a global management consulting firm, where he was a leader in the healthcare and innovation practices in Montreal, New York City and Paris. He sits on the board of Mimetogen Pharmaceuticals (ophthalmology, partnered with Bausch+Lomb), Montreal In Vivo (life sciences and health technologies cluster) and acts as an advisor to the Canadian federal and provincial governments. In his community time, Mr. Bisson serves as chairman of the boards of the Biennale de Montreal (contemporary art and visual arts) and of Procure (non-profit charity against prostate cancer). He obtained a M.D. degree from McGill University and a J.D. (law) degree from Universite de Montreal.

Fourth period: The role of government money

Panelist

Mr. **Cyril Frank**
CEO
Alberta Innovates

Dr. Cy Frank is currently the President and Chief Executive Officer of Alberta Innovates - Health Solutions. Between 1984 and 1992, with colleagues in Calgary, Dr. Frank helped develop both the University of Calgary Sport Medicine Centre and the McCaig Centre for Joint Injury and Arthritis Research in Calgary. He was the Chief of Division of Orthopaedics for the University of Calgary/Calgary Health Region from 1992-2008, and he was the Vice President Research Strategy of Alberta Health Services from 2010-2013. He was also the inaugural Scientific Director of the Institute of Musculoskeletal Health and Arthritis of the Canadian Institutes of Health Research from 2000 to 2006 and was Deputy Editor of the Journal of Orthopaedic Research for that same period. Dr. Frank was a one of the founding Co-Owners of recently sold TENET Medical Engineering, a Calgary based company which manufactures surgical positioning equipment and distributes to over 49 countries world-wide. He is one of 300 current members elected to the Canadian Academy of Health Sciences (CAHS) based on achievement in the academic health sciences in Canada. From September 2007 to January 2009, he was the National Chair of a Blue Ribbon International Panel for CAHS - "Defining the Best Framework and Metrics to Capture Returns on Investment in Health Research". He has authored or co-authored 255 peer-reviewed publications and 40 book chapters. With his research collaborators, he studies ligament healing and transplantation and the mechanisms of Osteoarthritis. Recent honors include being chosen as alumnus of the year at the University of Calgary in 2002, International Bone and Joint Decade "Builder" in 2005, top 40 alumni at the University of Calgary in 2006, a University Research Professorship in 2007, the University of Calgary Isaak Walton Killam Interdisciplinary Research Prize with Dr Nigel Shrive in 2010, and in 2011 a Canadian Institutes of Health Research/Canadian Medical Association Journal Top Achievements in Health Research with his colleagues in ABJHI. He was named to Alberta's 50 Most Influential People in 2011, awarded the Max Bell Foundation Senior Fellowship in Public Policy in 2012, received the University of Calgary Isaak Walton Killam "Research Leader Prize" for 2012, and in 2013 he received the Queen Elizabeth II Diamond Jubilee Medal which was awarded through The Arthritis Society, and became a member of the Order of the University of Calgary. Previously, Dr. Frank has held the positions of President of the Canadian Orthopaedic Research Society; Canadian Orthopaedic Foundation; and the Canadian Orthopaedic Association.

Panelists

Mr. **Juan Harrison**
Vice President New Frontier Science
Takeda Pharmaceuticals

Mr. Harrison is Vice President, New Frontier Science. He is responsible for engaging healthcare innovation emerging from academia and scientific centers of excellence. He was previously Vice President, Takeda Ventures, Inc, from 2008 to 2012. Mr. Harrison brings more than 27 years of biopharmaceutical R&D, product licensing, business development and strategy experience. Prior to joining Takeda, Mr. Harrison was a partner with ProPharma Partners International, where he specialized in developing and implementing business and licensing strategy for emerging and established biopharmaceutical companies. Before this, he led business development at XenoPort Inc., and held senior licensing positions at PowderJect Inc., Connetics Corporation and Alza Corporation. In addition, Mr. Harrison held product development management and research positions at Alza, where he began his career in 1985. Mr. Harrison received his Bachelor of Sciences in Combined Sciences from Santa Clara University in California, USA.

Mr. **Marc Leduc**
General director
Québec Ministry of Economy and Finance

Mr. Leduc is presently Director General of Industry Development at the Québec Ministry of Finance and Economy. He is in charge of overseeing the development of various sectors; he is also responsible for the economic policy sector. Mr. Leduc has over 25 years experience working in the civil service, mainly in the area of economic policy. He has held positions at the Finance Ministry in Québec and Ottawa as well as at the World Bank in Washington, D.C.

Mr. **Parimal Nathwani**
Vice President
MaRS Innovation

Parimal received his M.Sc. from the University of British Columbia and his M.B.A. from Simon Fraser University. He has a decade of experience in various aspects of the biotechnology industry, including finance, intellectual property management, business development and operations. Most recently Parimal was a Healthcare Analyst with a boutique investment bank, where he conducted due diligence on publicly traded biotechnology companies in Canada and the U.S. for an institutional investor client base and advised companies on financing strategies. He has also held the position of Technology Transfer Manager in the life sciences at one of Canada's leading Technology Transfer Offices. Parimal has been actively involved in preparing business plans, forming start-up companies, raising early-stage capital, managing intellectual-property portfolios and out-licensing initiatives.

Panelist

Ms. **Susan Windham-Bannister**
President and CEO
Mass Life Science Center

SUSAN R. WINDHAM-BANNISTER, PH.D. Dr. Susan Windham-Bannister is the first President and CEO of the Massachusetts Life Sciences Center (MLSC), a state-funded investment organization charged with administering the 10-year $1-billion Life Sciences Initiative that was proposed by Governor Deval Patrick in 2007 and enacted by the Massachusetts Legislature in June 2008. The MLSC is the hub for all sectors of the Commonwealth's life sciences community – biotechnology, pharmaceuticals, medical devices, medical diagnostics and bioinformatics. Before assuming her role at the MLSC, Dr. Windham-Bannister co-founded Abt Bio-Pharma Solutions (ABS), a boutique consulting firm serving life sciences companies. Within ABS, Dr. Windham-Bannister managed the Commercial Strategy Group. Dr. Windham-Bannister has co-authored two books: Competitive Strategy for Health Care Organizations, and Medicaid and Other Experiments in State Health Policy. She also has written numerous articles on competition in today's health care marketplace. Dr. Windham-Bannister received a B.A. from Wellesley College, a doctorate in health policy and management from the Florence Heller School at Brandeis University, and a Doctor of Science from Worcester Polytechnic Institute in 2012 (honoris causa). She completed her doctoral work under a fellowship from the Ford Foundation and was also a post-doctoral fellow at Harvard University's John F. Kennedy School.

Moderator

Mr. **Chris Coburn**
Vice President Research Venture and Licensing
Partners Healthcare

Chris Coburn is Vice President, Research Ventures & Licensing with full responsibility for the commercial application of the Partners HealthCare innovation portfolio. Representing Brigham and Women's Hospital, Massachusetts General Hospital, and McLean Hospital, Partners HealthCare is the largest academic research enterprise in the US with nearly $1.5 billion in sponsored research. Prior to joining Partners, Coburn was the founding Executive Director of Cleveland Clinic Innovations (CCI), Cleveland Clinic's corporate venturing arm. During his thirteen year leadership Cleveland Clinic spun off 57 spin-off companies that raised more than $700 million in equity financing. Before Coburn's arrival Cleveland Clinic had no innovation based spin-offs. Additionally, through its path breaking national Innovation Alliance, CCI manages innovation for healthcare systems throughout the U.S. Mr.Coburn has served on numerous corporate and community boards including Autonomic Technologies, Explorys, and the U.S. Enrichment Corporation (NYSE:USU). He is a member of the National Academy of Sciences Committee on Assessing the Value of Research in Meeting National Goals and IBM's Watson Health Care Advisory Board. He is a former Vice President and General Manager of Battelle Memorial Institute. He has consulted, testified and spoken on innovation and commercialization throughout North America and in nearly 30 countries. He and his wife, Nancy, have three grown children.

Dec. 4 – Morning Session

KEYNOTE PRESENTATION

"Divergent views on the role of government in entrepreneurial finance"

Keynote Speaker

Dr. **Thomas Hellmann**
B.I. Ghert Family Foundation Professor in Finance and Policy
Sauder School of Business
University of British Columbia

Dr. Thomas Hellmann is the B.I. Ghert Family Foundation Professor in Finance and Policy at the Sauder School of Business at the University of British Columbia. He holds a BA from the London School of Economics and a PhD from Stanford University. He is the director of the W. Maurice Young Entrepreneurship and Venture Capital Research Centre at UBC. Prior to joining UBC, he spent ten years as an Assistant Professor at the Graduate School of Business, Stanford University. He teaches executive, MBA and undergraduate courses in the areas of venture capital, entrepreneurship and strategic management. His research interests are venture capital, entrepreneurship, innovation, strategic management and public policy. He is also the founder of the NBER Entrepreneurship Research Boot Camp, which teaches the frontiers of entrepreneurship economics and entrepreneurial finance to PhD students. Recently he wrote a report about the role of government in venture capital for the World Economic Forum in Davos. He also led the evaluation report of the venture capital program in British Columbia. His academic writings have been published in many leading economics, finance and management journals. He has also written numerous case studies on entrepreneurship and venture capital, and led the development of a library of case studies focused on high technology companies in British Columbia. Currently he is writing a textbook on venture capital and private equity.

THIRD PANEL

"Government equity financing programs to support the venture capital ecosystem"

Moderator: Mr. **Stephen Hurwitz**
Co-Founder
The Quebec City Conference

Panelists:

Mr. **Samuel Duboc**
Senior Advisor Venture Capital
Finance Canada

Mr. **John Holloway**
Director Transaction & Relationship Management
European Investment Fund (Luxembourg)

Mr. **Philippe Mutricy**
Chief Economist
Bpifrance (France)

Mr. **David Zug**
Vice President
HarbourVest (USA)

Panel's background information:

- "Government Equity Financing Instruments", Excepts from the 2013 OECD Report "Policies for seed and early stage finance" p. 177
- "Accelarating Innovation: Using Public Sector Capital to Attract Private Sector Investors to the European Venture Capital Industry", EVCA Position Statement, November 3rd, 2011 p. 193
- "Government equity financing programs to support the venture capital ecosystem", bpifrance, November 24, 2013 p. 197
- "European venture: patience rewarded", Unquote.com, August 2,2013 p. 208
- "Addressing Canada's Commercialization Crisis and Shortage of Venture Capital: Will the Federal Government's Solution Work?", Technology Innovation Management Review, September 2013 p. 211

Panelist

Mr. **Samuel Duboc**
Senior Advisor Venture Capital
Finance Canada

Sam Duboc's career is marked by his passion for entrepreneurship, his ingenuity and corporate and community leadership. As founder of EdgeStone Capital Partners, Sam has successfully built one of Canada's leading private equity firms. Prior to starting EdgeStone, Sam was a managing director at CIBC Capital Partners and co-founder and COO of the Loyalty Group Inc. (Air Miles Reward Program), Canada's most successful loyalty database marketing program. In January 2013, Sam was named the Clifford Clark Visiting Economist and Special Advisor on Venture Capital for the Department of Finance Canada. In this role, he is leading a team in designing and implementing the Government of Canada's Venture Capital Action Plan. Effective January 2014, Sam has been appointed as Chair of the Business Development Bank of Canada. He also currently serves on the board of directors of Stephenson's Rental Services Inc. (Chairman), Porter Aviation Holdings Inc. and EZShield Parent, Inc. A dedicated and active member of the community, Sam is Co-founder and Chair of Pathways to Education Canada, an internationally recognized non-profit organization focused on improving the lives of Canada's disadvantaged youth and their communities through educational attainment. In addition to his ongoing work with Pathways, Sam is the co-chairman and co-founder of the Pecaut Centre for Social Innovation, a member of WPO and CEO, Crescent School Board of Governors, Bishop Strachan School Foundation & Board of Trustees and a former member of the board of directors of CAMH Foundation, MaRS Social Finance Task Force, Business Advisory Panel on Income Security Reform, Toronto City Summit Alliance Steering Committee and Luminato Foundation Board. Sam holds a Bachelor of Science degree in Chemical Engineering from Tufts University magna cum laude and Tau Beta Pi and an MBA from Harvard Business School. In 2000, Sam was recognized as one of Canada's Top 40 under 40 and in 2005 was chosen as one of the ten "most influential" alumni of the program.

Panelists

Mr. **John Holloway**
Director Transaction & Relationship Management
European Investment Fund (Luxembourg)

John Holloway joined National Westminster Bank in 1976, where he spent four years in the International Division in London. He joined the European Investment Bank in early 1980 and in over 20 years had different responsibilities in a number of EIB Lending Departments in Luxembourg and Rome. In June 2000 he was appointed Director at the EIF, with the responsibility to develop Venture Capital and Portfolio Guarantee transactions in support of European small and medium-sized enterprises. He is currently responsible for all Equity transactions entered into by the EIF, with approx EUR 10bn of assets under management invested in over 250 Fund Managers. He is Chairman of the EVCA LP Platform Council, and also Vice-Chairman of the EVCA Board of Directors.

Mr. **Philippe Mutricy**
Chief Economist
Bpifrance (France)

As from October 2013

Director of the Evaluation, Studies and the Prospective at Bpifrance - Public Bank of investment specialized in the financing of the SME (SMALL AND MEDIUM-SIZED ENTERPRISE)

Previous jobs

* Deputy Chief Executive Officer in charge of the strategic and piloting Department at CDC Entreprises (sister company of the Caisse des Dépôts) – Private Equity / LBO

* Cabinet director of the Managing Director at Caisse des Dépôts

* Responsible for the strategic and financial piloting Department at Caisse des Dépôts (Direction du développement territorial et du réseau)

* Prime Minister's Office (French Government) / Technical adviser in charge of SME, sports and tourism

* Cabinet director at ACFCI (Association des chambres françaises de commerce et d’industrie)

Panelist

Mr. **David Zug**
*Vice Presiden*t
HarbourVest (USA)

David Zug joined HarbourVest's direct investment team in 2005 and focuses on sourcing, evaluating, and executing growth equity, buyout, and mezzanine investments in operating companies. David serves as a board member or board observer for Benefitmall, Healthgrades, RCN Cable, SafeNet, and Videology. He is involved in several other direct investments, including Confie Seguros, Erico Global, GTS Central Europe, KAR Auction Services (NYSE: KAR), MYOB, PartnerRe (NYSE: PRE), Sidera Networks, and Zayo Group. David was previously at The Monitor Group, the international strategy consulting firm, where he focused for four years on growth strategies for Fortune 500 clients, rapid-cycle diligence for private equity clients, and deal sourcing for an affiliated buyout fund. His prior experience also includes Deutsche Bank, Camp Dresser & McKee (CDM), and Outward Bound. David received a BA (cum laude) from Dartmouth College in 1994 and an MBA from the Darden School at the University of Virginia in 2001. David serves as a Trustee of Thompson Island Outward Bound.

Moderator

Mr. **Stephen Hurwitz**
Co-Founder
The Quebec City Conference

Stephen Hurwitz is a partner at Choate, Hall & Stewart LLP, Boston, specializing in cross-border transactions involving venture capital and private equity and life sciences and technology companies. He has served as a speaker/panelist at many technology, life sciences and venture capital conferences in Canada and is the author of numerous articles on the Canadian venture capital ecosystem. He has served as a visiting lecturer on venture capital and emerging technology company issues at the MIT Sloan Entrepreneurship development Program and Harvard Business School. Mr. Hurwitz has extensive experience in representing non-US technology and life sciences companies and venture capital firms in all their U.S. activities. He received his AB from Cornell University and his JD from Cornell Law School.

FOURTH PANEL

"Public policies to support business angels' investment"

Moderator:

Dr. **Thomas Hellmann**
B.I. Ghert Family Foundation Professor
in Finance and Policy
Sauder School of Business
University of British Columbia

Panelists:

Ms. **Franceska Banga**
CEO
New Zealand Venture Fund (NZ)

Mr. **Zach Brandon**
President
Greater Madison Chamber of Commerce and former
Vice Chair Public Policy
Angel Capital Association (USA)

Ms. **Priya Ramdas**
Assistant Director
Alternative and Innovative Finance
Department of Business, Innovation & Skills (UK)

Mr. **Mike Satterfield**
General Partner
Yaletown Capital (Canada)

Panel's background information:

- "Fiscal/tax incentives ", Excepts from the 2013 OECD Report "Policies for seed and early stage finance" p. 217
- "Driving Investment to high growth in Wisconsin", Wisconsin Economic Development Corporation 2012 Annual Report p. 223
- "NZ's angesl investment market overview" p. 239
- "NZ Young Company Finance" p. 247

Panelists

Ms. **Franceska Banga**
CEO
New Zealand Venture Fund (NZ)

Franceska is the CEO of the $200 million New Zealand Venture Investment Fund which is a government-owned 'fund of funds' started in 2001 and designed to stimulate and secure investment capital for innovative technology companies with high growth potential. Franceska has led NZVIF since its inception, overseeing partnerships with nine venture capital funds, 13 angel investment networks, and direct and indirect investments into over 160 companies. Franceska has served on a number of boards and taskforces. Currently, she is a director of Auckland Tourism, Events and Economic Development, and the Fred Hollows Foundation. With an honours degree in economics and finance, she previously worked for the Ministry of Research, Science and Technology, the New Zealand Treasury, and the Reserve Bank of New Zealand.

Mr. **Zach Brandon**
President
Greater Madison Chamber of Commerce and former *Vice Chair Public Policy*
Angel Capital Association (USA)

Zach Brandon became President of the Greater Madison Chamber of Commerce in November 2012. The Greater Madison Chamber of Commerce represents more than 1,300 organizations and is focused on creating a foundation for growth for the Greater Madison region. Prior to joining the Greater Madison Chamber Zach was the director of the Wisconsin Angel Network, an early stage investment organization focused on increasing equity investments in Wisconsin's entrepreneurs. Zach also served as the vice chair of public policy for the national Angel Capital Association. Previously Zach served as Deputy Secretary of the Wisconsin Department of Commerce and served in the agency's senior policy and external affairs role. Zach advised the Governor, Commerce Secretary and the Legislature on global trade and business development strategies with a heavy emphasis on expansion, investment and entrepreneurial development. An experienced entrepreneur and small business owner, Zach was part of the leadership team of three start-ups. He was president and chief executive officer of Laundry 101, which in 2003 topped USA Today's "Best Places" to do laundry. Zach earned a B.A. in Political Science with a concentration in Management from Kent State University.

Panelists

Ms. **Priya Ramdas**
Assistant Director
Alternative and Innovative Finance
Department of Business, Innovation & Skills (UK)

Priya Ramdas is an Assistant Director in the Business Finance and Tax team at the Department for Business, Innovation and Skills. She is responsible for policy on alternative and innovative finance, as well as leading work on access to finance issues coming out of the Government's Industrial Strategy. Priya previously worked in the Cabinet Office where she was responsible for setting Big Society Capital - a UK 'Social Investment Bank', and HM Treasury, where she worked on international finance policy.

Mr. **Mike Satterfield**
General Partner
Yaletown Capital (Canada)

Mike brings over 25 years of entrepreneurship and operating experience in the software industry to the Yaletown team. Mike serves on the boards of Yaletown's portfolio companies Elastic Path and Indicee and manages Yaletown's investment in GrowLab, ePACT, Tastkop and Tutela. Prior to Yaletown, Mike was CEO of Simba Technologies (acquired by Pivotal), and managing partner of a Vancouver-based contract product development firm whose client roster included Microsoft, Adobe and Symantec. Mike has a B.Sc. degree from the University of British Columbia.

Moderator

Dr. **Thomas Hellmann**
B.I. Ghert Family Foundation Professor in Finance and Policy
Sauder School of Business
University of British Columbia

Dr. Thomas Hellmann is the B.I. Ghert Family Foundation Professor in Finance and Policy at the Sauder School of Business at the University of British Columbia. He holds a BA from the London School of Economics and a PhD from Stanford University. He is the director of the W. Maurice Young Entrepreneurship and Venture Capital Research Centre at UBC. Prior to joining UBC, he spent ten years as an Assistant Professor at the Graduate School of Business, Stanford University. He teaches executive, MBA and undergraduate courses in the areas of venture capital, entrepreneurship and strategic management. His research interests are venture capital, entrepreneurship, innovation, strategic management and public policy. He is also the founder of the NBER Entrepreneurship Research Boot Camp, which teaches the frontiers of entrepreneurship economics and entrepreneurial finance to PhD students. Recently he wrote a report about the role of government in venture capital for the World Economic Forum in Davos. He also led the evaluation report of the venture capital program in British Columbia. His academic writings have been published in many leading economics, finance and management journals. He has also written numerous case studies on entrepreneurship and venture capital, and led the development of a library of case studies focused on high technology companies in British Columbia. Currently he is writing a textbook on venture capital and private equity.

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Policies for Seed and Early Stage Finance

FINDINGS FROM THE 2012 OECD FINANCING QUESTIONNAIRE

Karen Wilson, Filipe Silva

EXCERPTS

6. Government Equity Financing Instruments

OECD

6. Government Equity Financing Instruments

6.1 Policy rationale for intervention

1. As discussed earlier, the rationale for specific government intervention through equity instruments may be based on various arguments. First, and stemming from the "market failure" and "financing gap" arguments mentioned in section 3.1, intervention in an underdeveloped seed and early stage market may be seen as a way to provide critical mass and signal the merits of seed and early stage investments to private sector investors (Leleux and Surlemont, 2003). According to this "seeding hypothesis", public intervention is seen as a way to facilitate the creation of a private seed and early stage market.

2. Second, public intervention may be based on considerations beyond pure financial returns (social returns, national strategic interests) which can play an important role in deciding to intervene in the market (Lerner 2009, Murray *et al*., 2012). Examples of these broader objectives can be efforts to create jobs and economic growth in specific regions or sectors. Nevertheless, caution is necessary in designing such programmes as they can underperform commercially oriented funds (Murray, 1998).

3. The ability of the public sector to pick winners is typically regarded with some skepticism (Avinimelech and Teubal, 2006). In addition, government must strive to avoid crowding out effects (Cumming and MacIntosh, 2006) and structure instruments effectively to addresses the specific policy goals (Murray *et al*., 2012).

4. In EU countries, government interventions have to comply with state aid rules. In the case of measures to promote risk capital investment, the EU has specific guidelines (Box 4). Even though the EC does not see evidence of a general risk capital market failure, it recognizes the existence of market gaps for some types of investments at certain stages. State aid is defined as an *advantage in any form whatsoever conferred on a selective basis to undertakings by national public authorities*. However, public intervention in the form of risk capital investments may also be designed in a market-conform manner, i.e. which does not entail state aid.[1]

Box 4. Rules on State aid to promote risk capital investment in SMEs in the EU

Overview

Article 107 (1) of the *Treaty on the Functioning of the European Union* (TFEU) determines the conditions under which aid granted by an EU "Member State or through State resources in any form whatsoever" is incompatible with the common market. The *Community Guidelines on State aid to promote risk capital investments in small and medium-sized enterprises* (RCG; EC, 2006) set out the conditions under which a risk capital measure can be accepted, should be analysed in detail by the EC or is not compatible with EU law.

Types of instruments

Even though the choice of aid measures is left to individual Member States, the assessment of each measure by the EC is based on whether i) "they encourage market investors to provide risk capital" and ii) "investment decisions [are] taken on a commercial basis". The following measures would fall into such category:

- Constitution of venture capital funds with participation by the State (even if on less advantageous terms)
- Guarantees to risk capital investors\funds, up to 50% of potential underlying losses
- Fiscal incentives to funds (and/or managers) or to investors to undertake investments
- Other financial instruments in favour of risk capital funds\investors to provide extra capital for investment

Conditions for compatibility

As a general principle, and in accordance with existing frameworks, guidelines and regulations, risk capital

[1] Subsidies granted to individuals or general measures open to all enterprises are not covered by Article 107 of the Treaty on the Functioning of the European Union and do not constitute State aid. For further information on State aid, please visit http://ec.europa.eu/competition/state_aid/overview/index_en.html

instruments shall not target i) firms in difficulties nor ii) firms in the shipbuilding, coal or steel industries. Within RCG, additional exclusions apply in terms of export-related activities, buy-outs and listed companies.

With respect to risk capital aid, the EC considers the incentive effect, necessity and proportionality of aid and the overall balance of the measure as positive if State aid measures comply with the following conditions:

- Investment tranches not exceeding EUR 1.5 million per SME, per 12 months
- For small companies, restriction to seed, start-up phases and expansion phases; for medium-size companies, seed and start-up phases and expansion phase only allowed in "assisted areas"
- Prevalence of equity and quasi-equity instruments (at least 70% of total budget)
- Participation by private investors of at least 50% (30% in "assisted areas")
- Decisions to invest in companies are profit-driven and fund management is made on a commercial basis
- Sectoral focus for risk capital measures may be accepted if within the general sector scope.

Measures not complying with one of the above mentioned conditions are subject to a detailed assessment by the EC, under the guidelines set out in Section 5 RCG and may eventually be authorised.

Other regulation

Additional regulation sets out the rules under which risk capital instruments are also allowed.

a) Under Article 29 of the General Block Exemption Regulation, the provision of risk capital state aid is allowed in lower amounts and in more limited situations (EUR 1.5 million per final beneficiary SME). Such schemes are exempted from prior notification to the EC.
b) Risk capital state aid may also be given under the *de minimis* regulation. *De minimis* allows max. EUR 200 000 per company per 3 years, without need for notification laid down in Article 108(3) TFEU.
c) Schemes designed in a market-conform manner may not entail state aid in the light of Article 107 TFEU.

Given that the resources provided by the EIF are not considered State resources in the light of Article 107 (1) TFEU, EIF funding (see Box10) is considered to be provided by private investors (OJ C 194, 18.8.2006, p. 10).

Revision of the Guidelines

In 2010, the EC noted that *i)* VC markets had not recovered to pre-crisis levels and *ii)* the pool of equity investors had decreased. The EC temporarily amended the RCG, increasing the investment thresholds from EUR 1.5 million to EUR 2.5 million and reducing private participation limits. The guidelines are currently under revision and modifications might include a permanent increase in the investment threshold to EUR 2.5 million. Changes could also relate to limitations on expansion investments in "non-assisted areas", scouting costs, cumulation rules, types of equity instrument and commercial management.[2] The current RCG applies until 31 December, 2013.

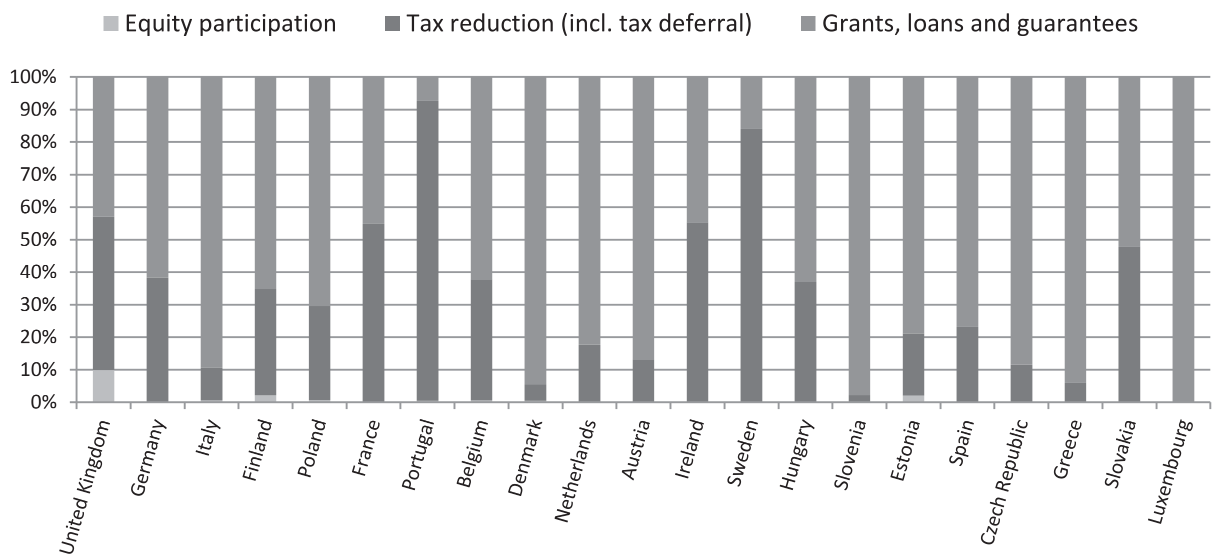
Source: EC (2006) and information available at http://ec.europa.eu/competition/state_aid/overview/index_en.html

5. As Figure 6 illustrates, tax instruments as well as grants, loans and guarantees are the most common type of state aid instruments amongst EU member countries. Equity instruments usually account for a small share and are most predominant in the United Kingdom (9.9%), Finland (2.1%) and Estonia (2.0%). These figures only include non-crisis State aid measures and cover all stages of company development.

[2] Information at http://ec.europa.eu/competition/consultations/2010_temporary_measures/index.html

Figure 6: Non-crisis aid to industry and services by aid instrument

Annual average (2009-2011)



Source: DG Competition. Available at: http://ec.europa.eu/competition/state_aid/studies_reports/ws5_1.xls

6.2 Public policy interventions

6. According to the questionnaire, most OECD countries have some type of government equity programme (Table 5). These programmes vary across countries but typically fall into three main categories: direct investment through government funds, fund-of-funds and public/private co-investment funds. Many of these programmes have been focused on venture capital, although programmes targeting angel investment have also grown.

Table 5: Types of government supported equity funds in countries who responded to questionnaire

	Public Equity Funds	Fund of Funds	Co-investment Funds
Australia			▲
Austria		△	
Belgium* Wallonia	△	△	△
Flanders	▲	△	
Federal			
Canada	▲	▲	
Chile			○
Czech Republic			△
Denmark	▲	▲	
Estonia	▼		
Finland	○	○	▲
France	▲	▲	▲
Germany		▲	○
Greece		○	▲
Hungary	○		▲
Ireland	△	△	▲
Israel			△
Italy	△	△	△
Japan			
Korea		▲	
Mexico	▲	△	○
Netherlands			▲
New Zealand		○	○
Norway	▲	▲	▲
Poland		○	
Portugal		▲	▲
Slovak Republic	○	▲	
Slovenia		△	△
Spain			
Sweden	▲	○	▲
Switzerland			
Turkey		△	△
United Kingdom		▲	▲
United States*			

*Note: The United States only has seed and early stage equity programmes at the state level which are not included. Belgium provided information at the regional level only which is included. Iceland and Luxembourg did not complete questionnaires and therefore are not included in the table.

✓: Country has corresponding programme ▲: Increased ▼: Decreased
○: Remained unchanged △: Started in the last 5 years ▽: Ceased during the last 5 years

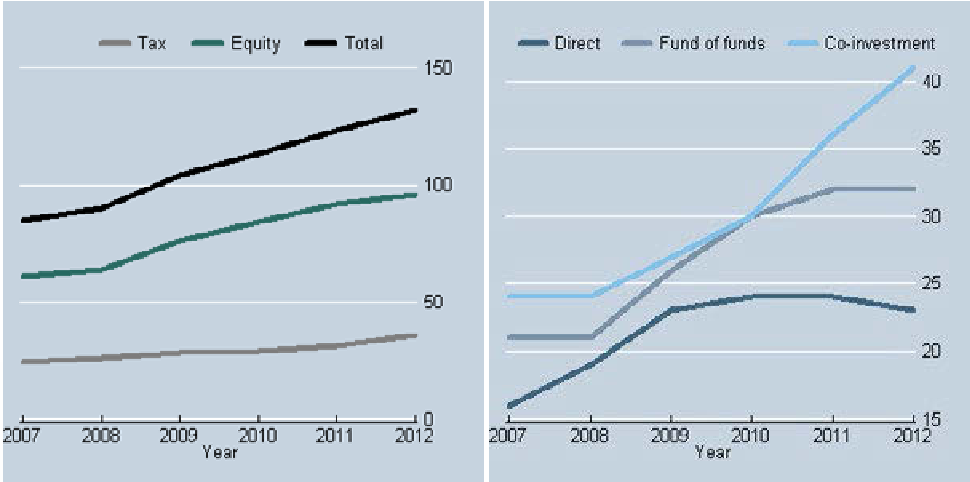
7. These programmes have been increasing in the past five years, especially fund of funds and co-investment funds (table 5 and figure 7). In the questionnaire, 13 out of 32 OECD countries indicated that they have direct public equity funds with support for these programmes primarily increasing in the past five years. In addition, 21 out of 32 OECD countries have fund of fund programmes in place and noted an increase over the past five years, including 8 countries with new programmes. Finally, 21 out of 32 OECD countries have co-investment funds in place with support increasing in 17 countries over the past five years. However, less than 11 countries indicated that they have evaluated any of these equity programmes.

8. The detailed data from the follow-up questionnaires on these instruments shows that under half (45%) of the programmes have sector requirements (some targeting specific sectors). Of those that have requirements, ICT, biotech and clean tech are most often the broad sectors targeted. Half of the instruments have a specific stage focus, which is often seed (83%) and/or early stage (79%). Only a few have age requirements (27%), but size requirements are common (66%).[3] Only in 48% of cases are firms required not to be part of a group.

9. Among direct and co-investment programmes, follow-on funding rounds are usually eligible for further support (93%). The majority of publically-backed funds require that the investee firm is headquartered in the country (58%), but in some cases investments can be made abroad (34%). Some programmes only allow investments in firms located in a given region with the home country (37%).

10. As seen in the figure below, the total number of equity instruments in OECD countries has grown dramatically over the past five years, in particular relative to tax instruments. Co-investment funds have grown the most but there has also been an increase in the number of fund-of-fund programmes. Meanwhile, the number of direct public funds has been reduced. In terms of volume, from a subsample of 29 programmes covering both tax and equity instruments, for which data on the amount of the programmes was available, there was a 98% increase in government spending.[4] Experience suggests that co-investment funds and fund-of-funds, both of which seek to leverage private sector investment, might be more effective than direct public equity funds. However there is limited evidence to date although it is clear that the design, management and incentive structures of these instruments play a determining role.

Figure 7: Number of tax and equity instruments in OECD Member Countries[5]



Source: Elaboration by the Secretariat, based on OECD Financing Questionnaire (DSTI/IND(2013)5/ANN) and additional research.

3 Size requirements are maximum number of employees, turnover and\or total assets required for a firm to qualify for the government equity programme.

4 The subsample includes detailed information on tax and equity programmes from the OECD follow-up questionnaire (see DSTI/IND(2013)5/ANN) in place in the following countries: Belgium, Canada, Chile, Czech Republic, Denmark, Finland, France, Germany, Greece, Ireland, Netherlands, New Zealand, Norway, Poland, Portugal, Sweden and Turkey.

5 Please note that these statistics do not reflect amounts committed or invested through the programmes.

11. For the subset of instruments for which we have precise data, we can see that, on average, the amounts of these programmes have almost doubled over the past five years. In co-investment programmes, *pari passu* (on the same terms) is the most common investment approach (83%) and investors usually need to be pre-approved (72%). For the direct and fund-of-fund programmes surveyed, only 40% indicated there was a private manager of the fund or fund-of-funds.

6.2.1 Direct Public Funds

12. These are public venture capital funds which invest directly in start-up firms. The rationale behind many of these programmes has been to facilitate the development of a venture capital within the country. A number of these have had a regional focus. Many early efforts to support venture capital followed this approach, however, for the most part, the results have not been positive. Issues such as crowding out, lack of proper incentives, lack of skills and experience to invest often prevented these funds from achieving their goals (Lerner, 2009).

13. As a result, many of these programmes have been modified to include a co-investment from private sector investors, such as the example below (Box 5).

Box 5. Almi Invest

Sweden

Classification:	Equity: Direct\Co-investment	***Year launched:***	2009
Size:	250 employees	***Geographic scope***	Specific regions in Sweden
Age/Stage:	Early stage	***Sector:***	All

Overview

Almi Invest is a public venture capital company currently managing a total of 1100 million SEK available for investments in Swedish companies. It consists of seven, regionally based venture capital funds, all with local offices and experienced local investment managers. The direct investment programme is expected to run until 2014.

Model and structure

Almi *invests and co-invests* together with one or more investors and can take a maximum of 50% of a share issue. Co-investors are: a) other venture capital firms; b) angel investors; and c) other investors in un-listed companies.

- A first-round investment from Almi Invest is usually in the region of 2-4 million SEK.
- During the lifetime of an investment in a company, investments can reach up to approx. 10 million SEK.
- In each investment round, there must be a co-investor investing at least as much as Almi Invest.
- Almi Invest also provides investees with knowledge, experience and access to their network.
- Investments are made on the same terms as an investment partner.
- Almi Invest works as an evergreen fund.

Source: http://www.almiinvest.se/en/

14. Similar to a number of other public equity funds in Europe, half of Almi's capital comes from European Union structural funds, which amounts to SEK 500 million. The other 50% comes from regional public investors (such as local authorities, county councils and regional associations) and Almi Företagspartner (funding from Swedish government). Almi can invest in a wide range of businesses across sectors, but investments must be made in specific regions within Sweden.

6.2.2 Fund of Funds

15. A "fund of funds" is an investment strategy consisting of holding a portfolio of other investment funds rather than investing directly in companies. Instead of investing directly in start-up firms, public fund of funds invest in private venture capital firms, often with the requirement that other private institutional investors also invest (see next section on co-investment). This approach has become more prevalent over the past 5 years.

16. An example of a fund of funds is Argentum in Norway (Box 6). The funding for Argentum increased from 3.7 billion NOK in 2007 to 6.5 billion NOK in 2012. Argentum not only acts as a fund of funds but also co-invests at the firm level. Additionally, and perhaps less common, Argentum also invests in the secondary market in order to free up private investors' resources for new investments. The rationale is that offering liquidity for investors who wish to exit private equity funds can be important in order to ensure that the asset class remains attractive to a wider universe of investors over the long term.

Box 6. Argentum Fondsinvesteringer AS

Norway

Classification:	Equity: Fund of funds	***Year launched:***	2001
Size:	250 employees	***Geographic scope***	Nordic countries
Age/Stage:	All	***Sector:***	All

Overview

Argentum was established with the purpose of developing the Nordic private equity industry, increasing high-growth firms' access to capital by co-investing with private investors and providing high returns from investments in Nordic private equity funds.

Model and structure

Argentum has two different programmes tailored for: *i)* institutional investors; *ii)* smaller investors. Through these programmes, partners can invest in three different types of equity programmes:

- **Nordic Private Equity Programme (2008):** primary investments in Nordic private equity funds. Argentum has invested in over 65 funds and, through these funds, invested in more than 500 portfolio companies.
- **Argentum Secondary (2009):** secondary investments within private equity. Argentum started investing in the private equity secondary market in 2009 through its dedicated subsidiary Argentum Secondary AS.
- **Additional Funding Programme (2012):** co-investments with Argentum's partner fund managers. Direct co-investments are made alongside and in the same terms of private equity funds. Argentum will invest and divest at the same time as private equity funds. Such investments are managed by a General Partner (GP).

Argentum leads and represents the investors throughout the due diligence process and when negotiating terms with potential investee funds and their managers. Investments and divestments take place at same time and on the same terms as the fund which the co-investment is pegged to. The investments will be managed by the fund manager.

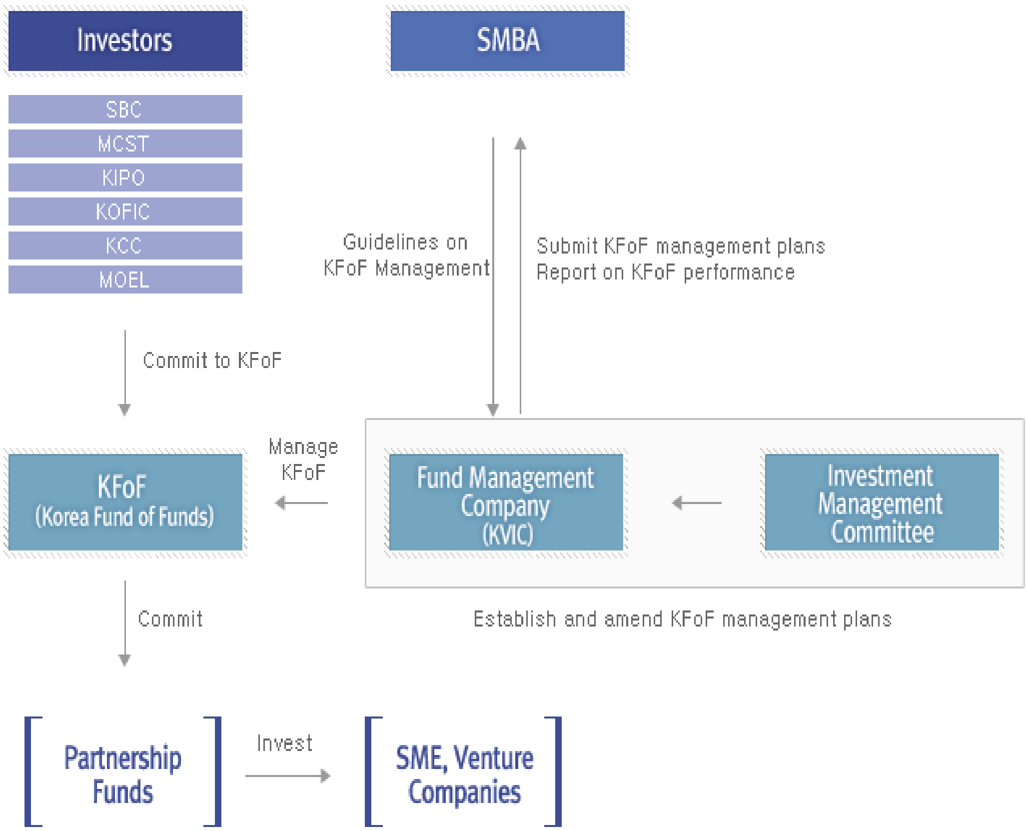
Source: http://www.argentum.no/

17. Argentum provides a flexible framework for fund managers. It imposes no special regional investment requirements and part of the funds may be invested abroad (although only in Nordic countries). There are no particular requirements on firm size, age, sector or stage of development. The flexibility of the fund may be very attractive for private investors which can help meet the government's policy objective of developing the private VC industry.

18. Another example of a fund of funds can be found in Korea. The Korea Fund of Funds (KFoF), was established for the purpose of providing a stable capital source for venture investment. KFoF manages 1.8 trillion KRW in commitments to 251 funds (as of January 2013) and is expected to operate until 2035. Approximately 30 new funds have been created each year, with maturities ranging from 5 to 7 years.

19. One of the interesting features of the Korea Fund of Fund is that it combines the interests of different government agencies with distinct policy objectives. The management is handled by a specialist manager (KVIC) that, keeping the commitments of each agency in separate accounts, co-invests in the creation of new funds, each of which meet the terms initially set by the corresponding government agency. Within that framework, there is flexibility to provide the right incentives for the private sector to participate. The structure of the Korea Fund of Funds is outlined below (Figure 8).

Figure 8: Structure of Korea's Fund of Funds



Source: http://www.k-vic.co.kr/eng/

20. As seen in the previous two examples, fund of funds can be structured and implemented in many different ways. Yet another example is the Istanbul Venture Capital Initiative (iVCi), described in Box 7 below. The main goal of iVCi is to be a catalyst for the development of the venture capital industry in Turkey through investments in independently-managed funds and co-investments. The iVCi does not target specific sectors and it was designed to invest beyond the seed and early stages. The EIF, as an external advisor, plays a significant role in the investment process. Nonetheless, the final investment decision is of the responsibility of the iVCi Investment Committee. iVCi seeks to bring together Turkish institutional investors and experienced international fund managers. It also allows for networking within the Turkish venture capital and industrialist environment through the iVCi Strategic Network, contributing to the development of the entrepreneurial ecosystems (see Section 8).

Box 7. Istanbul Venture Capital Initiative (iVCi)

Turkey

Classification:	Equity: Fund of funds	***Year launched:***	2007
Size:	NA	***Geographic scope***	Only Turkish entities
Age/Stage:	All	***Sector:***	All

Overview

The Istanbul Venture Capital Initiative (iVCi) is a EUR 144 million joint initiative between the Turkish governmental agencies and the EIF, along with private institutional investors. The iVCi, is a dedicated fund of funds investing into funds managed by private sector independent fund managers.

Model and structure

The co-investment at the fund of funds level results from bringing private institutional investors to commit funds to the iVCi. The investors in iVCi are: *i)* Small and Medium Enterprises Development Organisation of Turkey (KOSGEB); *ii)* Technology Development Foundation of Turkey (TTGV*); iii)* Development Bank of Turkey (TKB*); iv*) Garanti Bank; *v)* National Bank of Greece Group (NBG); and *vi)* European Investment Fund (EIF), also advisor to the iVCi.

The iVCi co-invests both in: *i)* intermediary funds and *ii)* firms (up to 50% of iVCi fund).

a) Intermediary funds (only private VC funds qualify):

- **First Time Funds:** managed by a team with no prior joint track record in managing a VC fund;
- **Established Funds:** managed by a team with prior track record but no experience in Turkey, or a joint operation between a first time fund in Turkey and a team with previous track record acquired abroad;
- **Experienced Funds:** managed by a team with a prior joint track record in managing a VC fund in Turkey.

b) Direct co-investment partners: qualified, credible, with extensive experience in the deal and reputation at stake.

The iVCi has a four year investment period that can be extended twice by one year and can commit up to 20% of its total fund size to any particular investment.

Source: http://www.ivci.com.tr/

6.2.3 Co-investment Funds

21. Co-investment funds use public money to match private investment. Typically these programmes work by matching public funds with those of private investors, who are approved under the scheme. Co-investment schemes are often seen not only as a way to leverage private money but also a driver in building, growing and professionalising the seed and early stage investment market by providing a more structured investment process. Co-investments schemes can also be an effective way to attract foreign investors, providing the regulatory environment permits (see section XII).

22. Co-investment funds can be structured in many different ways. The majority of co-investment funds are *pari-passu* (on the same terms).[6] However, some funds are structured to provide either upside leverage or downside protection to the private investors. Asymmetric funding schemes allocate a higher proportion of the returns to the private sector investors and a greater part of the losses to the public sector investors. This provides a premium to private sector investors to compensate for the risk and long term nature of seed and early stage investments. Earlier work showed that these programmes provided the appropriate incentives, without creating unintended disincentives, and resulted in a positive impact on returns when the fund is managed by a private sector manager (Murray, 1999). Interest in asymmetric funding schemes has grown recently warranting further evaluation of these types of measures.

[6] According to the questionnaire, this structure is used in 83% of the co-investment programmes surveyed.

23. Co-investment funds have become increasingly popular in recent years, due in part to the perceived success of existing programmes. New Zealand has had co-investment funds in place for a number of years. Initially, they set up a co-investment fund for venture capital investment (VIF in 2002) and later created one focused on angel investment (SCIF in 2005, see Box 8 below for further details) which was modelled on the Scottish Co-investment Fund (see box below). The rationale was based on the financing difficulties of start-ups with high growth potential (innovative, technology-based firms) at the seed and early stages.

Box 8. The New Zealand Seed Co-Investment Fund (SCIF)

New Zealand

Classification:	Equity: Co-investment	***Year launched:***	2005
Size:	Preference for SMEs	***Geographic scope***	New Zealand businesses
Age/Stage:	Seed and Early stages	***Sector:***	All (restrictions apply*)

Overview

SCIF is an equity investment fund aimed businesses at the seed and start-up stage of development that have strong potential for high growth. SCIF provides NZD 40 million of matched seed funding. It is expected to operate for a period of 12 years in total, with an expected investment period of 5-6 years.

Model and structure

SCIF invests in seed and early stage firms alongside selected Seed Co-Investment Partners. These "approved co-investors" are private investor groups, usually BA groups or syndicates (currently there are 14 approved co-investors);

SCIF can invest a total of NZD 4 million per co-investment partner. Investments through the Fund would be limited to a maximum investment of NZD 250 000 in any one company or group of companies; with the possibility of another NZD 250 000 in follow-on capital at the discretion of NZVIF.

For SCIF to invest, it requires a 50/50 matching private investment and acts as a direct investor on the same terms as the co-investment partner. Follow-on funding rounds are eligible for further co-investment. SCIF invests in line with industry standard terms and takes an active role in tracking investment performance.

*Sectors excluded (except technology/innovation activities): Farming; Forestry; Banking; Infrastructure; Retail.

Source: www.nzvif.co.nz/seed-co-investment-overview.html

24. The overall policy objective of the New Zealand Seed Co-investment Fund (SCIF) is to support the development of the angel equity finance market in the country, by developing a greater professional capacity in the market for intermediating funds between investors and technology-based start-ups, increasing the depth of specialist skills needed to assess and manage early stage investments, increasing the scale and enhancing networks for early stage investment, catalysing investments that would have not have been made without the programme, minimising fiscal risk and covering costs. An impact evaluation is currently underway and should be finalized in 2013. This will include an evaluation of the outcomes of the programme, the level of additionality associated with the outcomes of the programme and the unintended consequences, both positive and negative.

6.2.4 Regional Programmes

25. The Scottish Co-Investment Fund (SCF) was one of the first co-investment funds targeting seed and early stage investment and has been a model for the development of other programmes around the world (Box 9). SCF focuses on angel and VC investment in Scotland and has led to the creation of a vibrant entrepreneurial ecosystem in the region. SCF also allows partners from the rest of the United Kingdom and/or Europe.

Box 9. Scottish Co-Investment Fund (SCF)

Classification:	Equity: Co-investment	***Year launched:***	2003
Size:	250 employees; £16m net assets	***Geographic scope***	Scotland
Age/Stage:	Angel and VC investment	***Sector:***	All (restrictions apply*)

Overview

The Scottish Co-Investment Fund (SCF) is a 72 million equity investment fund, partly funded by the European Regional Development Fund (ERDF).

Model and structure

SCF is part of a portfolio of funds managed by Scottish Enterprise:

- SCF: invests between GBP 100 000-1 million in deals up from GBP 500 000-1 million. The SCF invested GBP 12.3m in 63 deals during 2009/10.
- Scottish Seed Fund: invests up to GBP 100 000 in deal sizes up to GBP 500 000. The Scottish Seed Fund invested GBP 1.7 million in 21 deals during 2009/10.
- Scottish Venture Fund: invests GBP 500 000-2 million in deals between GBP 2-10 million. The Scottish Venture Fund invested GBP 16.7 million in 18 deals during 2009/10.

Partners

SCF is a pari passu investor alongside private sector investors. No public sector investment in a managed partner fund. SCF does not find and fund its own deals. It forms contractual relationships with: *i)* business angel syndicates *ii)* VC fund managers from the private sector. Partners find the opportunities, conduct the due diligence, negotiate the terms of the deal and commit their own resources. SCF automatically matches all qualifying investments from registered partners subject to eligibility.

Investments

SCF can invest up to GBP 1 million in any one company, either in tranches or multiple rounds and total deal size must not exceed GBP 2 million. The investment must be matched by the partner on an equal basis. SE can't own more than 29.9% of the voting rights of the company and public money can't be more than 50% of the total risk capital funding.

Conditions

SCF funds are not placed in a Limited Partner agreement with the partners. Instead the agreed funding is legally guaranteed by SCF and funds are only drawn down once an investment has been legally concluded and subject to meeting all of the criteria. Partners are paid a flat fee of 2.5% of the SCF funds invested and are awarded partnership status with SCF for three years (with funds drawn down over that time period, reviewed every 6 months and with an annual partner review).

Principle

SCF operates at minimum cost to the public finances on a fully commercial basis (and therefore with no subordination of the public funds).

*Sectors excluded: Real estate/property development; Social and personal services; Pubs, clubs and restaurants; Local services; Banking and insurance; Motor vehicles; Nuclear; Professional services; Retail.

Source: Mason 2009, Scottish Enterprise 2010 and www.scottish-enterprise.com

26. A Scottish Enterprise commission evaluation showed that over half of SCF investee companies felt their chances of raising capital would not have been possible without SCF and 78% stated that the fund was vital to their survival (Harrison, 2009). This study also showed that SCF has had a positive economic impact on the companies they have supported in terms of turnover, gross value added and employment.

6.2.5 Cross-country programmes

27. In Europe, the European Investment Fund (EIF) is an active financial institution in the private equity market. EIF invests in venture and growth capital, from the very earliest stages of intellectual properties development into technology transfer, to more mature phases of development (see Box 10).

Box 10. The European Investment Fund

EIF delivers a wide range of innovative risk financing solutions for SMEs which comprise equity, guarantees, credit enhancement and microfinance, and are delivered through financial intermediaries (including venture and growth capital funds). EIF has a unique tripartite shareholding structure combining public and private investors: the European Investment Bank (EIB) 62.1%, the European Union through the European Commission (EC), 30%, and 24 public and private financial institutions, 7.9%.

Equity instruments

EIF's equity activity is principally backed by resources from its main shareholders, the EIB and the EC.

Technology Transfer, Venture Capital, Growth and Mezzanine: EIF covers most of the equity financing value chain for SMEs, from the earliest stages of intellectual property development through to the venture and seed capital and mid- later growth stages. At end 2012, EIF's total net equity commitments amounted to EUR 7bn, mobilising close to EUR 38bn of additional capital from other sources.

European Angels Fund: This pilot initiative, launched initially in Germany, provides equity to Business Angels and other non-institutional investors for the financing of innovative companies in the form of co-investments. The initiative is currently being rolled out in other countries.

Corporate Innovation Platform: This new initiative developed by EIF offers corporate investors efficient access to the European venture capital and innovation space and facilitates cooperation between SMEs, investors and corporates.

Joint ventures and specific programmes involving equity investments

Funds of funds: EIF advises and manages a number of funds of funds for third party investors including national and regional governments as well private and strategic investors. The goal is to support EC policy objectives and provide financial solutions to complement national schemes.

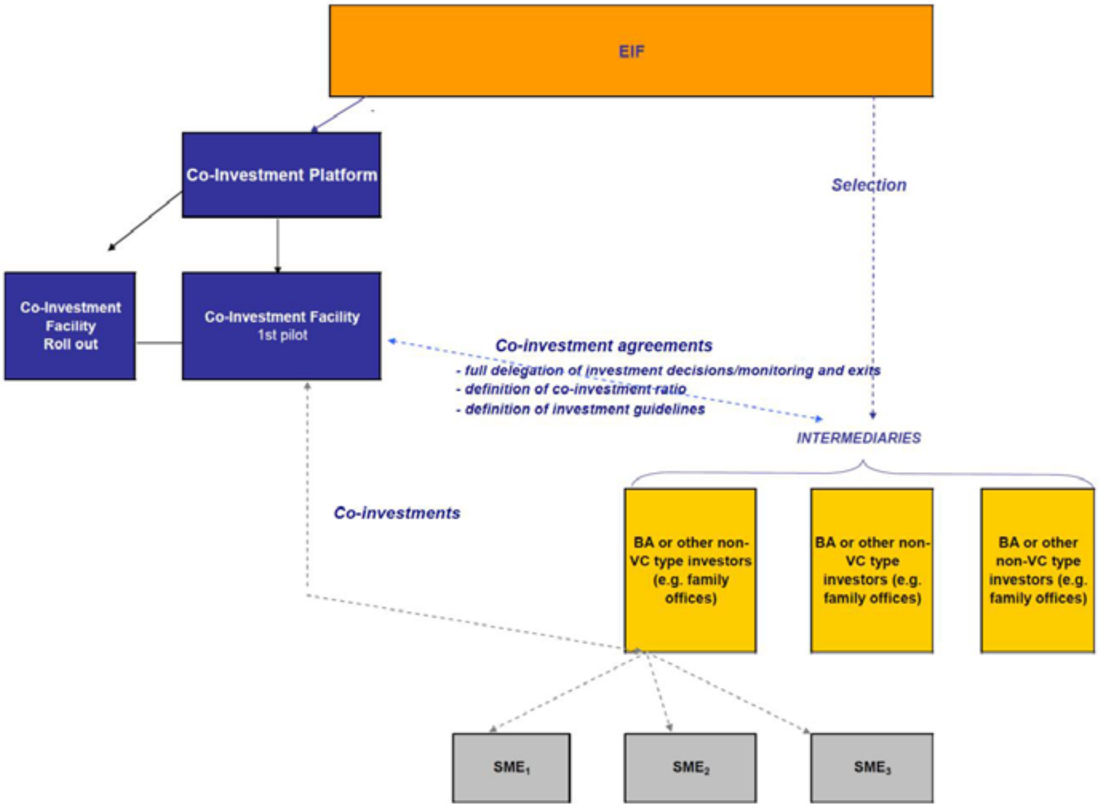
Joint European Resources for Micro to Medium Enterprises (JEREMIE): JEREMIE is a joint initiative of the EC, EIF and EIB to promote SME access to finance and deliver financial engineering using European regions' Structural Funds. EIF manages 14 JEREMIE Holding Funds and is essential in developing know how transfer and capacity building at the local level.

28. Examples of the EIF joint Equity fund of funds programmes include: Istanbul Venture Capital Initiative (iVCi, see Box 7), ERP-EIF Dachfonds, LfA-EIF Facility, UK Future Technologies Fund, and Baltic Innovation Fund. Examples of supported Venture Capital funds in countries and regions where EIF manages JEREMIE Holding funds include: Practica Seed Fund (Lithuania), Eleven Fund (Bulgaria), and Piraeus Equity Advisors (Greece).[7]

29. Most recently, the EIF has launched a pilot angel co-investment programme in Germany and Spain. While most co-investment funds are structured to invest alongside angel groups, networks or syndicates, this pilot provides co-investment with approved individual angel investors. If successful, the program will be rolled out to other countries across Europe. The structure is highlighted below (Figure 9).

[7] From the list in Annex 1, the following funds are managed by the EIF: *i)* ERP-EIF Dachfonds (Germany); *ii)* Early Stage ICT Venture Capital Fund (Greece)*; iii)* New Szechenyi Risk Capital Programme (Hungary); *iv)* JEREMIE Holding Fund (Slovakia).

Figure 9: Structure of EIF European Angels Fund



Source: Pelly and Kraemer-Eis (2012).

6.3 The balance between public and private sector investment

30. Recent evidence from Buzzacchi *et al*. (2013) suggests that higher public stakes in equity instruments can result in increased private venture capital risk aversion and longer investment periods. In addition, evidence suggests that VC-backed firms perform better if the amount invested by the public sector is smaller, and under control of a private fund manager, than if the amounts are larger (Brander *et al*., 2010). This reinforces the argument that the size of the public intervention must be appropriate—i.e. large enough that it makes a difference, but not so large that it affects the alignment of incentives and objectives leading to relative underperformance of VC-backed firms (Lerner, 2009). A commonly held view is that the public co-investment should not exceed 50% of the total investment (EVCA, 2005a).

31. In Europe, there has been a significant change in the mix of institutional investors in venture capital over the past five years with the share of government agencies increasing from 14% in 2007 to 40% in 2012 (Figure 10) [8]. Even though, there was a corresponding 57% drop in the total amount of funds raised during that period, including a 47% drop in seed and early stage venture capital, the amount of funding from government agencies increased by 85.4% between 2007 and 2012. While the increase in government agency funding is a response to the financial crisis, it shows a growing reliance on public sector funds in the European venture capital market, particularly the EIF (EVCA,

8 Please note that the relative importance of different institutional investors varies greatly between countries. The differences in sources of funding have also been associated with greater focus on different investment stages (Mayer et al, 2005).

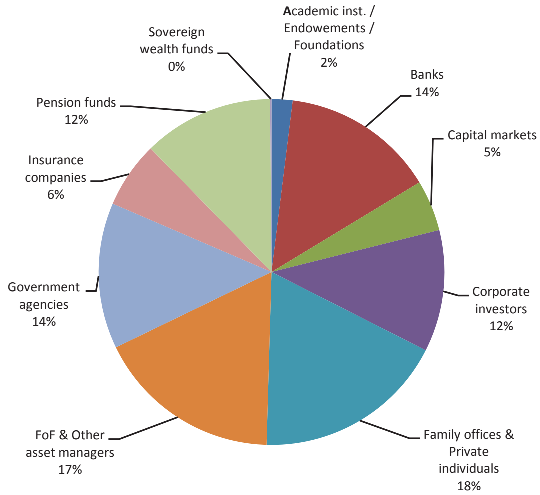
2012). It is important that public support is leveraged by private investment and does not inadvertently serve to crowd it out (Lerner, 2009).

Figure 10: Venture Funds Raised in Europe by Type of Investor[9]

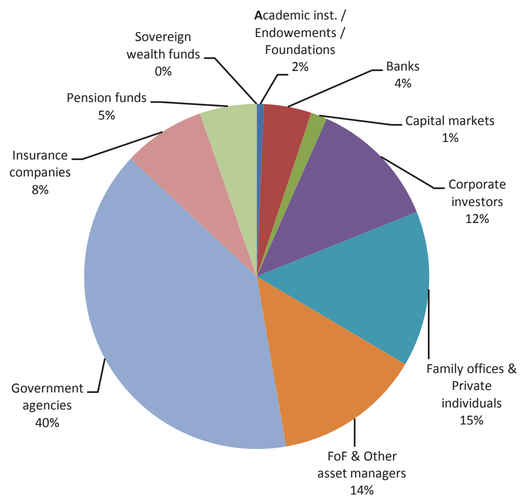
2007 vs 2012

(Incremental amount raised during the year as a percentage of total amount)

2007 — Total EUR 8.3B
3.8B early stage



2012 — Total EUR 3.6B
2.0B early stage



Source: EVCA PEREP_Analytics.

9 Europe includes here Austria, Belgium, Bosnia-Herzegovina, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Former Yugoslav Republic of Macedonia, Montenegro, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Spain, Slovak Republic, Slovenia, Sweden, Switzerland, Ukraine and United Kingdom.

32. Research has shown that public funds should only be utilised where a tangible or imminent market failure in the private sector is evident. These vehicles should be designed in line with the market needs. When public funds are deployed, it is most efficient to channel these through existing market-based systems, namely private funds, and to shape them with a clear market approach to yield the intended results (Lerner, 2010). In addition, public contributions should strive to encourage private funding from both individual and institutional investors (EVCA, 2010).

33. Furthermore, in order to assess their accuracy and efficacy, a periodic review is important to help make adjustments as needed (see section 9 which focuses on evaluation). At the same time, it is important to focus on development of the market, rather than solely on a provision of financing. This requires creating the proper incentives and supporting the development of the necessary quality, skills and experience in the venture firms and angel investors to match international norms (Lerner, 2009).

Position Statement

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CREATING LASTING VALUE

Accelarating Innovation:
Using Public Sector Capital to Attract Private Sector Investors to the European Venture Capital Industry

November 3rd 2011

Executive Summary

European innovation has a problem: the lack of private sector investors in venture capital. In 2007 Government agencies accounted for less than 10% of investment in European venture capital; by the first half of 2011 this had grown to over 55%.

During this same time period venture backed companies performed significantly better in terms of sales and employment growth than other, non-venture backed, high-tech companies[1]. The overall venture capital industry has not, however, delivered competitive financial returns compared to other private equity investment stages.

Venture capital in Europe is now characterised by a reliance on public sector institutions such as the European Investment Fund ("EIF"). It is essential that programmes managed by the EIF and other institutions at a national level are continued. It is also crucial they are built upon and complemented. The investor base must be expanded and diversified if in the long-term the European venture capital industry is to become self sustaining.

In March 2010 EVCA proposed a scheme[2] to complement the EIF and stimulate the demand for high quality venture funds. This would be a multi-annual programme for private sector managed pan-European funds of funds with a high commitment to venture capital.

This programme would enable the European Commission to invest in typical private sector managed private equity funds of funds to:

- Incentivise private sector institutional investors to venture capital
- Create a level playing field with other private equity investment stages
- Scale up the European venture capital industry by increasing the number of high-quality European venture capital funds
- Overtime reduce the requirement for public sector support to venture capital

Challenges for raising venture capital funds

Venture capital, although strategically important, accounts for only approximately €5 billion on an annual basis. This is tiny in comparison to other asset classes. Many institutional investors such as banks, pension funds and insurance companies generally consider the market too small to allocate expertise or resources.

The low performance of the venture capital industry in recent years in comparison to other illiquid asset classes, coupled with tightening EU regulation has compounded the challenge.

Pension funds, insurance companies and banks have fallen from 35% of funds raised to just 5% in the first half of 2011. Government agencies now account for over 55% of venture funding. The changing investor base is illustrated in Fig 1.

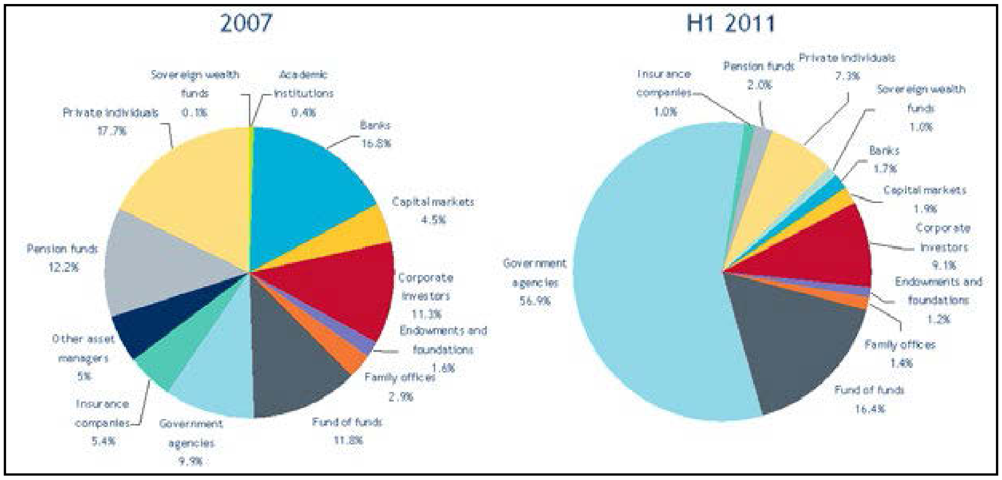


Fig 1. *The changing source of investors in European venture capital* (Source: EVCA)

The use of private sector managed funds of funds

A fund of fund can provide instant access to venture capital, enabling investors to allocate capital without the need to understand the intricate details of the asset class. Overtime the investor will build up knowledge and expertise by monitoring investments.

The private sector manager is required to market the fund of funds to institutional investors, building expertise and knowledge in the institutional investor community. European venture capital fund managers themselves are not inexperienced , just under capitalised.

Funds of funds will also serve to diversify the investor base. Governmental agencies will not be sufficient without co-investors in venture capital funds.

Creating a level playing field for investors in venture capital

In addition to structural issues in the investor base venture capital fundraising has been challenged by low returns to investors in recent years.

Unlike other asset classes such as property or later stage private equity, venture capital investors can not reduce the cost of their equity investment by blending it with cheaper bank financing. This is because innovative, pre-profit companies can not generally access debt financing. This increases the risk to venture capital investors and reduces the equity return. Equity investing is expensive.

This means that venture capital firms have to generate a higher return on their equity investment than other asset classes in order to compete. This is one factor depressing returns to investors in innovation. The funds of funds could be structured to level the playing field.

The European Commission could invest on a non-pari passu basis in the fund of funds. The profits could be distributed in favour of the private sector investor. A number of structures have been used successfully in the past at a fund level - The Yozma scheme in Israel is one example - and a number of scenarios are possible.

- There is a low-fixed, preferred return to the European Commission. After this return has been met the private sector investors capture the rest of the upside and boost the returns of the fund.
- A similar structure to the low-fixed preferred return can be designed with an additional boosting mechanism: the private sector investors also have the option to buyout the European Commission at a fixed low rate capturing all the upside of the fund. This buyout option could be exercised at a certain point in the life of the fund.

These are just examples of how the scheme could work to offer an incentive to the private sector. It is essential the European Commission work with private sector fund of fund managers to create flexible, market appealing, schemes.

General design principles of the scheme

The scheme should be based closely on existing private sector fund of funds following typical market characteristics.

- The scheme should be based on incentives to attract investors and enhance performance: the private sector can not be ordered to invest in venture capital.
- A limited partnership is a negotiated agreement not a product that is bought or sold. The fund of fund needs to work with the public sector investor to develop a compelling strategy to the market - a one size fits all approach will not work.
- The funds of funds should be able to invest across all industry sectors:
  - Different sectors have different funding cycles - directing capital to certain themes or sectors without an accompanying market driver can distort the market
  - The fund of funds manager needs to have the flexibility to develop an investment strategy which will attract private sector investors to deploy capital in a ten year investment programme. A themed approach would reduce the ability to attract private sector investors.
  - Innovation can not be produced on demand. Channeling capital to certain sectors is counterintuitive to how venture capital works in practice and limits the success of public support. This programme aims to create a thriving venture capital industry with its celebrated externalities of job creation and growth.
- The targeted commitment to venture capital should equal, but preferably exceed, the public sector investor's commitment to any funds of funds.
- The funds of funds are pan-European. The venture funds in which they invest should have a high target allocation to European companies.
- The scheme is a multi-annual programme over the next EU Budget period, gradually building capacity in the market with a number of funds of funds.
- The scheme should have a mechanism that creates a level playing field for investors in innovation and venture capital and thereby improve returns - this can be achieved by a

non-pari passu fund structure.

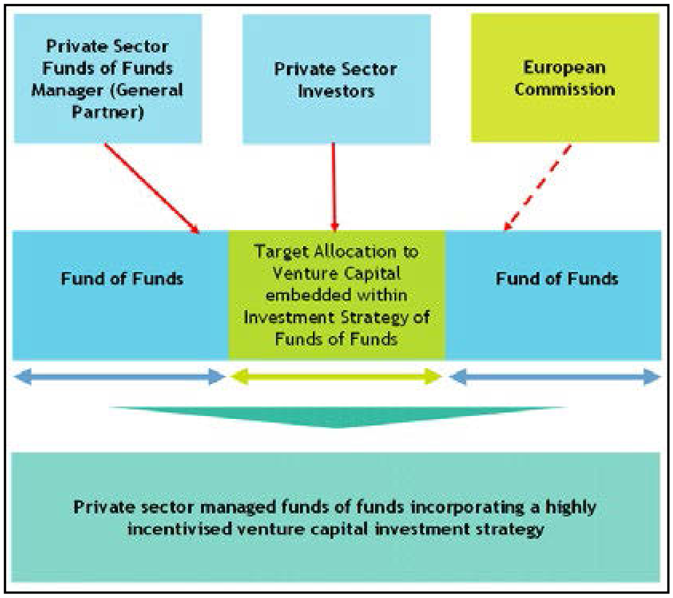


Fig 2. *The Basic structure of a fund of funds*

1. The European Commission is an investor in a private sector managed funds of funds

2. The investment strategy must envisage at least as much investment to venture as the Commission's investment

3. The private sector manager has the responsibility to develop an investment strategy that is compelling for the private sector investor

4. There are a number of mechanisms that can be deployed to "leverage" the public sector commitment

Summary

The European Commission is committed to making "an efficient European venture capital market a reality"[3]. This can not be done without bringing the private sector back to venture capital. The proposals outlined in the document are not a request for subsidies, grants or protection mechanisms such as guarantees, just the smart use of public sector capital to enable institutional investors either to re-engage with, or start, investing in European innovation and high technology growth companies.

1. Venture Capital: policy lessons from the VICO Project. 30/09/11
2. EVCA Venture Capital White Paper. Closing Gaps and moving up a gear: the next stage of venture capital's evolution in Europe. 2/03/10
3. Communication from the Commission "EUROPE 2020 A strategy for smart, sustainable and inclusive growth" 3/3/2010

bpifrance

Background information

2013, the 24th of November

QUEBEC CITY CONFÉRENCE
PUBLIC POLICY FORUM
PANEL 3

Subject: "Government equity financing programs to support the venture capital ecosystem"

PART 1 : ABOUT BPIFRANCE...

PART 2 : THE PLACE OF BPIFRANCE ON FRENCH PRIVATE EQUITY MARRKET

PART 3 : FOCUS ON FINANCING SEED FUNDS

PART 4 : FOCUS ON FRENCH EXPERIENCE ON FINANCING PRIVATE FUNDS OF FUNDS

* * *

PART 1 : ABOUT BPIFRANCE...

1. BPI AS: « PUBLIC INVESTMENT BANK »

"The BPI is a public corporation used to finance and develop companies, acting to support public policies conducted by the State and by the regions." (Article 1 of the law of 31 December 2012 pertaining to the creation of the *Banque Publique d'Investissement*[1]*)*.

The BPI, a state-owned investment and financing group dedicated to serving companies and promoting their expansion, is the partner that French companies can rely on. It is a decisive instrument for revitalising the economy, for restoring competitiveness, for renewing the country's industry, relying on action for the economic development of the territories by its two partners: the French State and the Caisse des Dépôts.

The BPI took the name of Bpifrance.

[1] En français dans le texte

1.1. Bpifrance is not a regular bank

Bpifrance :
- supports very small companies, SMEs and medium-sized companies, throughout their life cycle, both domestically and in the export market;
- is a patient partner, seeking long-term profitability, and acting as the guarantor of the company's continuity;
- encourages innovation from supporting R&D to injecting funds into the equity of innovative companies;
- contributes to the solidity of the industries that are the hopes for the future, by creating links between large and small companies, and it will nurture tomorrow's champions;
- addition to financing, the BPI provides a broad palette of services to assist company heads and will reach out to local providers;
- contributes to sustaining and expanding business in territories that are faced with a difficult economic environment;
- takes into account in some actions and some financing tools the special features of the entrepreneurial approach that is specific to the social and community-based economy.

By bringing together the state stakeholders in company financing, Bpifrance takes advantage of all the skills and symbiotic cooperation among the various industries in order to meet the expectations of companies more efficiently.

1.2. What Bpifrance does

Bpifrance provides its service to an extremely broad spectrum of companies, from start-ups to medium-sized companies, and is the solid state partner of SMEs throughout their development. Bpifrance also have the opportunity to stabilise the shareholding structure of large companies.

Bpifrance's work takes a variety of forms:
- funding innovation (on credits provided by national and regional budgets) in the form of subsidies and repayable advances (around €745 million in 2012, for 2,500 cases);
- guaranteeing loans, and, where appropriate, investing in companies' equity (€3.5 billion in guaranteed financing in 2012, for 50,000 cases);
- jointly funding, alongside regular banks, short- and long-term bank loans, intended to fund the expansion of SMEs and medium-sized companies (via investment, expansion for exporting, etc.) (€4.7 billion in joint funding in 2012, for 5,000 cases);
- investing in companies' equity, and in quasi-equity, directly and via partner funds, in small, medium, medium-sized and large companies (around €1.5 billion in 2012 invested in 1000 companies);
- distributing all available financial support for exports.

1.3. Bpifrance: structure and governance

The structure of Bpifrance became final only once its incorporation process was completed (once the staff representative bodies have been consulted and the necessary permits obtained, particularly from the competition authorities. This technical process, which was completed on the 12th of July, allows Bpifrance to deploy its action by relying on around €20 billion in shareholders' equity and nearly 2,000 employees distributed throughout the country.

Bpifrance consists of three entities:
- a parent company, jointly and equally owned by the State and the Caisse des Dépôts, which provides guidance to the entire group, particularly by using umbrella functions (financial management, risk management, communication, network guidance, etc.);
- a funding division – the ancient Oseo dedicated to funding innovation, to joint funding with banks, and to guaranteeing loans;
- an investment division, called Bpifrance Investment, springing from the contribution of the FSI, CDC Entreprises and its subsidiaries, responsible for investing in companies' equity and quasi-equity.

Governance is provided to Bpifrance through:
- the board of directors of Bpifrance, chaired by the chief executive officer of the Caisse des Dépôts, and comprising fifteen members, equally spread between men and women: the chief executive officer of Bpifrance,

eight representatives of the State and the Caisse des Dépôts, two representatives of the regions, two qualified prominent persons, and two representatives of the staff;
- two guidance committees (the national guidance committee and the regional guidance committees) responsible for giving recommendations on strategic directions, action policy and the procedures by which Bpifrance and its subsidiaries performs their general-interest assignments. The regional guidance committees pass judgement in particular on the consistency between the actions of Bpifrance on the regional level and its national strategic directions.

1.4. Bpifrance's targets and procedures of action

French companies, in particular SMEs, are characterised by inadequate ability to invest, to innovate, to export, to stay the course, and to create jobs. The challenging macroeconomic context and the application of the new accounting and oversight rules encourage banks and private investors to reduce their long-term commitment with regard to companies both on the loans site and the equity side.

Bpifrance attempts to reverse this trend and to create a "pull-along" effect of private stakeholders in funding, in order to strengthen French companies' investment capabilities.

By relying on professional teams, who are responsive and discerning in their investment and funding decision-making, Bpifrance acts as follows:
- as a priority, in partnership with private sector stakeholders: joint funding along with private sector banks and joint investing, whether direct (in the companies) or indirect (via subscriptions in funds alongside other governmental investors (the French State, the Regions) or private investors (institutional investors, industrial investors, etc.), French or foreign;
- when it comes to equity or quasi-equity, as an experienced, socially responsible and long-term investor, at all stages of the companies' development (early stages, venture capital, expansion capital, generational transition, even turnaround). Bpifrance is intended to invest principally on a minority basis in profitable projects and in the long term;
- by taking into account, apart from the assessment of the companies' financial performance, the impact of the projects on the competitiveness of the French economy (criteria such as the potential of the companies to expand abroad, their efforts at innovation, their ESG practices, consideration of the issues of jobs and the areas or their impact on the other stakeholders in the sector);
- by supporting companies beyond a funding offer, via an offer of services, working on a neighbourhood basis (directing companies to seek funding, advice on structuring projects, helping them network with other companies being funded to encourage sharing of best practices, support to improve operational performance, support of exporting companies, particularly by setting up an operational partnership with Ubifrance to contribute to the Government's goal of offering personalised support internationally to one thousand growth-oriented SMEs and medium-sized companies, etc.).

Once it is set up, Bpifrance steadfastly pursue the efforts undertaken by Oseo, the FSI and CDC Entreprises, by implementing the following projects pursuant to the decisions of the national pact for growth, competitiveness and jobs (PNCCE).

2. THE ROLE OF BPIFRANCE TO SUPPORT CAPITAL INVESTMENT

The role of Bpifrance to support capital investment is based on Bpifrance Investment. Bpifrance Investment is a subsidiary of Bpifrance Group. The activity of Bpifrance Investment continues the activity of CDC Enterprises and FSI in one company. To be precise, the FSI subsist only as a holding company named Bpifrance Portfolio (with portfolios but without staff), and CDC Enterprises becomes Bpifrance Investment and remains a portfolio management company. Bpifrance Investment has a staff of three hundred people.

Since 1994, *CDC Entreprises* acts as the group's management company in charge of minority private equity investments in SMEs within various programmes of the Caisse des Dépôts.

At first conducted exclusively on behalf of the Caisse des Dépôts, the SME investment activity led by *CDC Entreprises* gradually expanded to third parties investors. At the time of its inception in 2008, the FSI inherited from almost all the private equity investments of the Caisse des Dépôts in SME financing, especially its historical portfolio, as well as commitments made within the France Investment programme.

Other investors of the funds managed by CDC Entreprises include the French State (especially with regards to the "investments for the future" programme), the European Investment Bank, the Caisse des Dépôts, banks, insurance companies and several corporate investors, who are investors in sector-focused funds managed by CDC Entreprises.

CDC Entreprises had two subsidiaries:

- *FSI Régions* (formerly Avenir Entreprises) : a portfolio management company, of which 80% is held by CDC Entreprises and 20% by OSEO, whose means and missions were considerably increased end 2011. This company will be merged into Bpifrance Investment at the end of this year.
- *Consolidation et Développement Gestion*: a portfolio management company held by CDC Entreprises (49%) and by major French banks and insurance companies (51%), which manages the FCDE, a fund dedicated to SMEs involved in special situations. This company does not change, but CDC Entreprises is replaced by shareholder Bpifrance.

2.1. Missions for the development of SMEs are continued by Bpifrance Investment

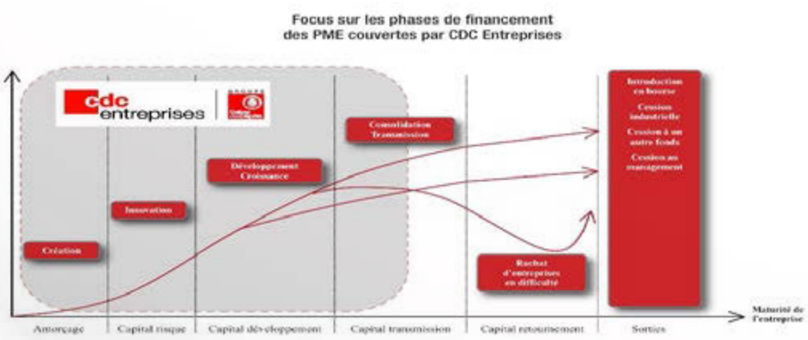
The missions of Bpifrance Investment are:

- **Develop and support industrial and service SMEs, in a strategy based on stability** and the long-term, beyond the vagaries of the economic climate and the search for profitability alone, aiming to structure and reinforce the creation of leading French SMEs
- **Facilitate and organise a network** of financiers willing to strengthen the equity and support the development of French SMEs to stimulate development and employment
- **Finance new management teams developing original investment strategies** to meet the needs of markets that are not yet covered.

Since 2010, CDC Enterprises has started a process with the aim of taking into account extra-financial ESG (Environmental, Social and Governance) criteria in its investment, development and business support strategies. This decision is consistent with its strong adherence to the values of the Caisse des Depots group to which it belongs. It has signed the UN's Principles of Responsible Investment (PRI).

2.2. Bpifrance Investment invests at all stages of business development

Bpifrance Investment invests in regional and national seed capital, venture capital and development capital funds. It also invests directly in companies through specialised or generalist funds and its subsidiaries *FSI Regions* and *Consolidation et Développement Gestion*.
Relying on teams of investment professionals, having proven experience in both funds of funds and direct investment, Bpifrance Investment covers the entire chain of equity financing from seed funding to small-cap buy-outs. Bpifrance Investment invests in SMEs up to a maximum of 10 million Euros directly and 15 million Euros through portfolio funds.



As part of its missions on behalf of Caisse des Dépôts, Bpifrance Investment extends its activities in southern Mediterranean investing in funds, through Averroes Finance II.

Bpifrance Investment in figures :

• € 8b under management, (without FSI's portfolio)

• 3 021 SMEs in activity financed directly or indirectly representing 250 000 employees (without FSI's portfolio)

- 274 partner funds among which 35 national or foreign funds investing part or all of their funds internationally

• € 1.3b invested in 2012 in 881 SMEs

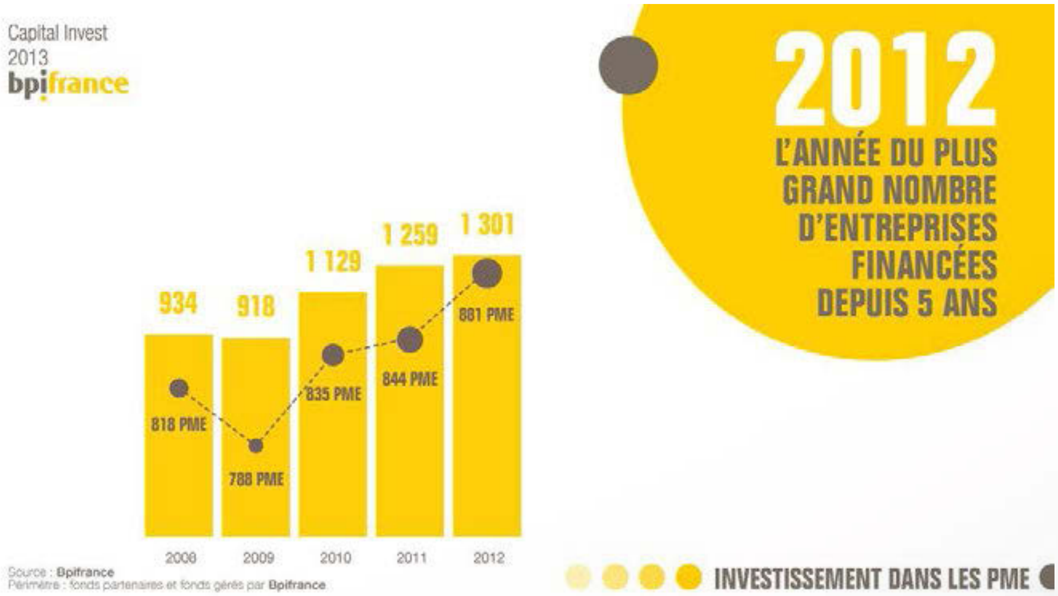
- 1 on 2 SMEs (57%) in France is directly or indirectly financed by Bpifrance Investment on the investment capital market

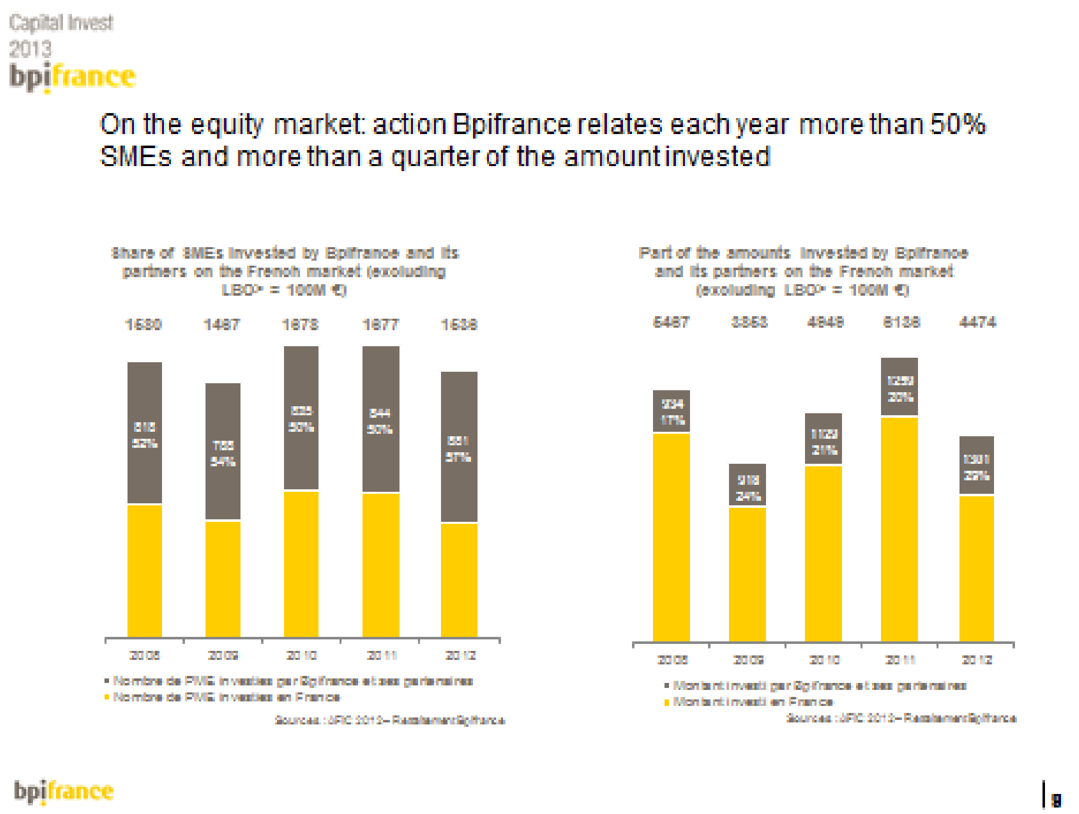
PART 2 : THE PLACE OF BPIFRANCE ON FRENCH PRIVATE EQUITY MARRKET

In France, in 2012, we invested a total of €6b in 1,548 companies. Bpifrance invested €1,3b in 881 SME's. 1 out of 2 SMEs (57%) in France are directly or indirectly financed by Bpifrance Investment on the investment capital market.

Since 2008, the amounts and the number of SMEs invested in by Bpifrance and its partners have been increasing steadily until 2011 after which you can see a reduction in the growth.

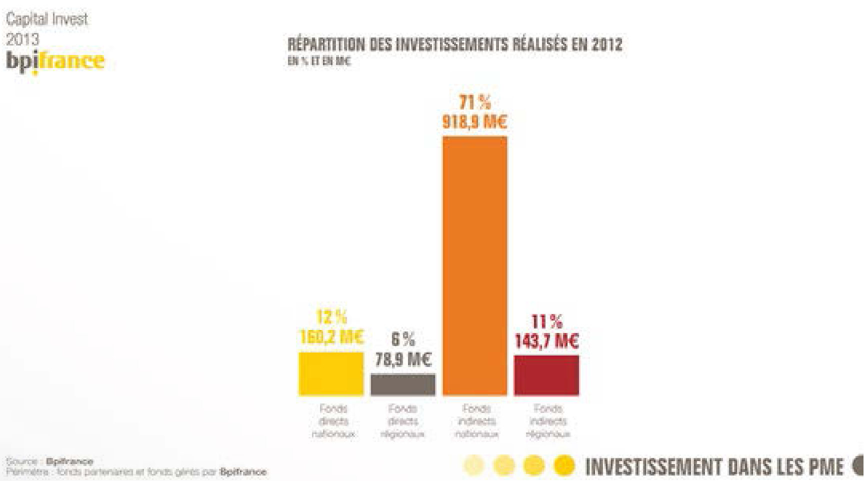
Between 2011 and 2012, as you can see there has been a 3% increase in the amount invested and a 4% increase, in the number of SMEs invested in over the same period.
However on a national level, between 2011 and 2012 the amount invested decreased 38% and 9% respectively on the number of SMEs.





The various funds in the portfolio are:

- National funds and indirect regional funds, mentioned partner funds in which Bpifrance and other subscribers subscribe;
- Direct funds managed by Bpifrance:

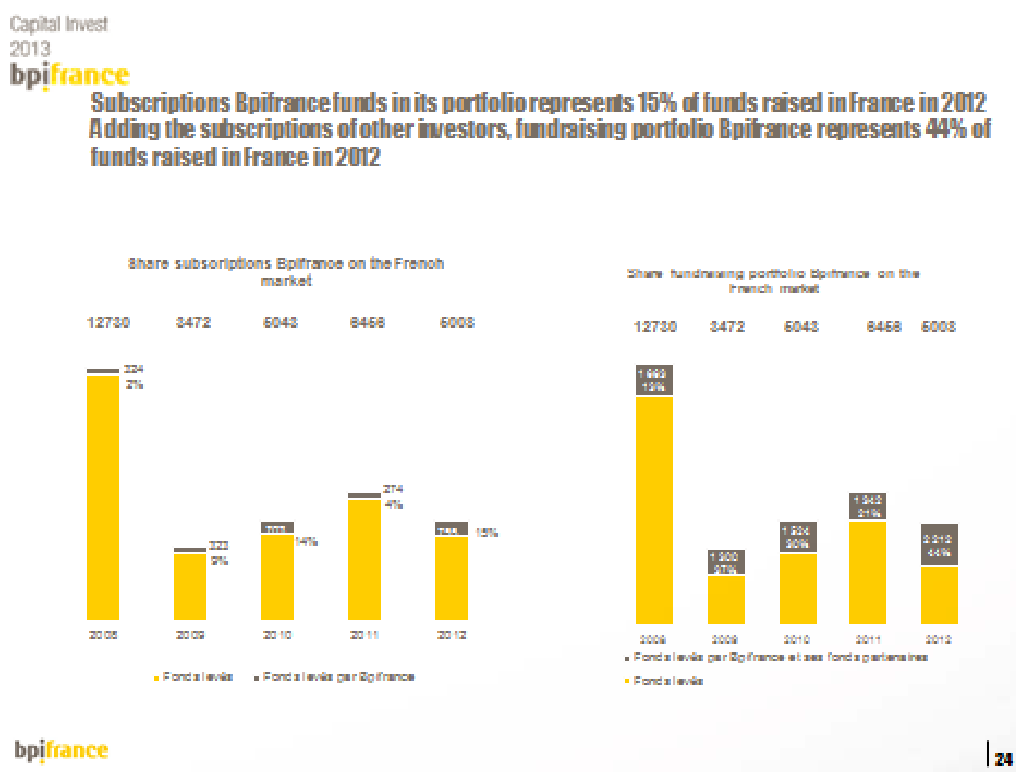


82% of the amounts invested are the result of the work of national partners and regional funds. Direct and indirect regional funds represent only 17% of the amounts invested, which represents a total of 50% of SMEs invested in.

The average ticket investment in 2012 amounted to € 1.23m.
The median value, all funds amounted to € 0.42m: 50% of investments or reinvestments were below €420,000. 90% of the investment of funds of Bpifrance's portfolio are less than € 3.1m, which is less than the average ticket on the French market.

The SME's of Bpifrance's portfolio are very small:

Intervention funds of Bpifrance's portfolio are both focused on small tickets and businesses located in regions. 41% of the companies funded by Bpifrance's portfolio in 2012 were financed by the seed funds and venture capital funds. This feature also explains the low average ticket amount of Bpifrance's funds.



54% of the funds of Bpifrance's portfolio are in an investment phase: € 5.2b out of € 7.8b in funds in the investment phase have not yet been called.
This represents a total investment amount of € 5.2b ready to be used in French SMEs and, approximately 3 to 4 years of further investment.

PART 3 : FOCUS ON FINANCING SEED FUNDS

In 2012, the portfolio Bpifrance, fundraising dedicated to seed and venture capital reached € 1b. This is the best year on record for 5 years in these segments and can be explained by:

- A cyclical phenomenon: the French private equity market is quite small and we have a shortage of Gp's, to smooth over time periods of nonrenewal of funds. 2012 was a very good year in venture capital funds because many of the previous generations came to the end of their investment period, and management teams wanted to raise a successor fund.
- The real return of investors to venture capital, is because the increase of successful startups with potential high yields. This is particularly due to four factors:
    - a public policy from the state very favorable to innovation and consistently for nearly 10 years (research tax credit, innovation aid distributed by OSEO, university reforms, establishment of valorization tool patents and technology transfer, launch "investment program for the future" € 35b...).
    - return of the industrials among the LP's, attracted by a model that allows them to follow the innovations and capture them by acquisition early in the development process.
    - the constant support of Bpifrance Investment, and CDC Entreprises before that, to the French venture capital market, with the funding of many management teams. These teams have a proven track record, and are able to raise funds more easily than it was 10 years ago ("learning" effect). Natural selection in the highly competitive market of private equity means that the teams, who raise funds today, have a good track record and inspire confidence.
    - Recent examples of successful exits (Neolane, Criteo ...) which has enabled venture capital funds to realize multiples of x35 and x65 up, and even with two Nasdaq quotes.
- Maintaining a good level of research in France, especially in information technology, life sciences and technologies related to the environment. Many innovations are converted into industrial projects and provide interesting investment opportunities.
- On the specific segment of seed funds, the creation of a special public fund of funds, "National Seed Fund" (FNA), has been critical to boost fundraising, which had been stopped since 2010:
    - This fund is 100% state financed ,;
    - It's managed by Bpifrance Investment ;
    - It has the agreement of the European Commission to invest more than 50% in private funds;
    - This is a fund of funds that only finances private funds;
    - Since its creation in 2010, it has boosted seed funding (a ten fold increase in 2 years);
    - The FNA has had a ripple effect on other key public institutions (EIB, Regions) and private, and sometimes beyond seed funding.

The FNA is a relatively conventional device for public policy to support seed funds. It does not include support for accelerators, or platform crowdfunding. Bpifrance is sometimes required to finance business angels when they set up a fund. By taking a part of more than 50 % in the seed funds, the FNA takes a level of risk higher than the other private subscribers. However there is *pari passu* with the other subscribers in private funds (not taking first losses). It is a tool that allows private investors to hold stakes in start-up funds but minimizing their exposure. Without FNA, there would not be fundraising in France for seed funds. For venture capital, the situation is almost the same: without Bpifrance, there would be very little fundraising venture capital in France (from Bpifrance can be up to 25% of the fund size).

Bpifrance has been a supporting force in the market for over 15 years in various forms of financial institutions and today has a very influential position on seed and venture capital :

- No fundraising can be done without FNA (managed by Bpifrance Investment) or without Bpifrance as a subscriber.

- Almost 100% of annual investments in seed or venture capital, done in France, are the result of funds of Bpifrance's portfolio.
- Only fiscal tools (FIP funds and FCPI) are beyond the influence of Bpifrance. They represent about 50% of Bpifrance investments in seed and venture capital.

PART 4 : FOCUS ON FRENCH EXPERIENCE ON FINANCING PRIVATE FUNDS OF FUNDS

The main program of support for capital investment in France is called "*France Investissement*", or "*FSI France Investissement 2020*". It was launched in 2006 and renewed in 2012. It was managed by CDC Entreprises from creation, however now managed by Bpifrance Investment. Since the program's inception in late 2006, the funds financed by the "*FSI France Investment 2020*" invested €4.8b in 1586 companies.

At the end of 2012, taking into account the funds being set up, the partner "*France Investissement*", or "*FSI France Investissement 2020*" (share from public and private funds supplied via private funding and the insurance partners) amounted to almost € 3.6b :

- More than € 2b private funds benefiting 147 members (including 52 regional funds) and 7 direct funds managed by CDC Entreprises and its subsidiaries;
- € 401m corresponding to the commitments made in 27 private funds under constitution;
- € 950m allocated to Direct investment activities funded 100% by *Caisse des dépôt* and managed by CDC Entreprises branch and subsidiaries (5 funds);
- the balance covered the staffing of France Investissement Guarantee (€ 122m), a secondary investment activity marginally conducted by partners (€ 36m) and financing support program (€ 8m)

147 private funds with the label "*FSI France Investissement 2020*" received a total of € 1.5b of public money. Theses 147 funds received more than € 9b private money from others investors. They have a superior capacity of investment in € 10b, representing this leverage : € 1 from public investor lead to € 5.8 from private investor.

The public part of the actual program consist in invest € 5.3b over the period 2012-2020, provided by the Future Investment Program ("PIA"), the Caisse des Dépôts and Bpifrance. Public investment takes the shape of investments in funds managed by private managers who themselves are investing in SMEs growth and investment capital directly to SMEs, often alongside private investors.
They focus on segments where private investment is insufficient, especially for innovative companies and small businesses.

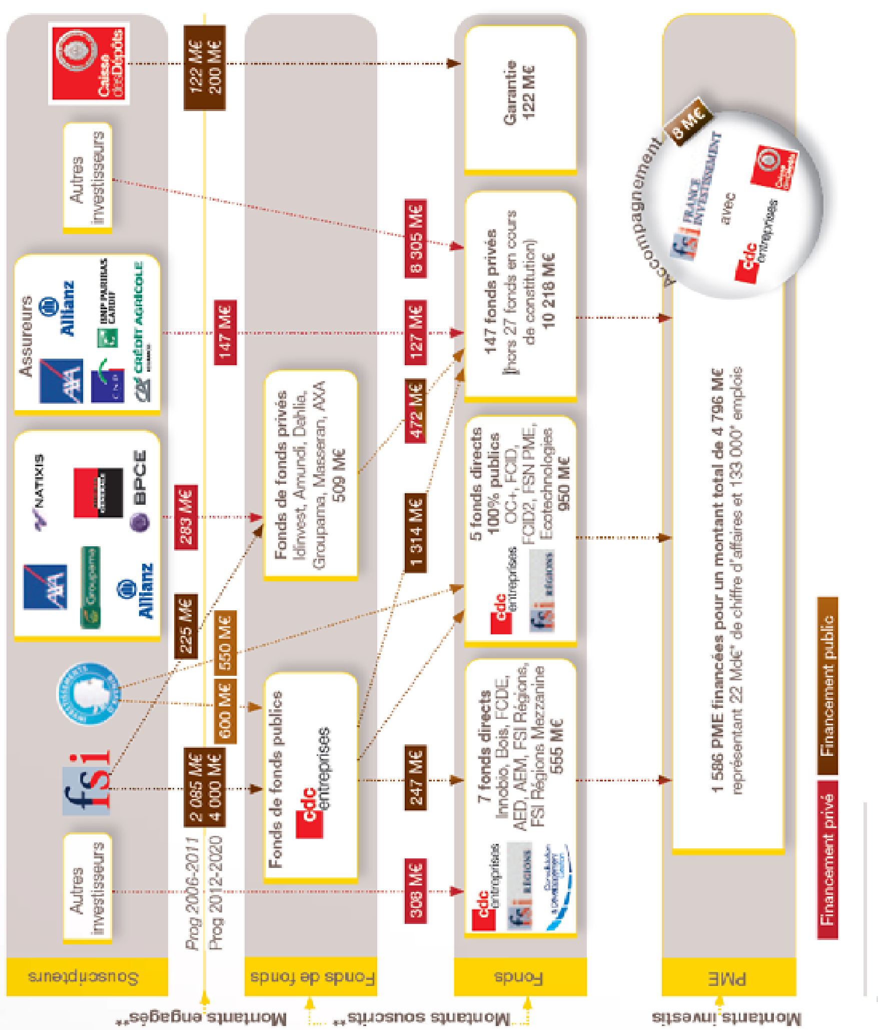
The program description is in the following diagram. Thank you to replace it from now on "FSI" by "Bpifrance" and "CDC Entreprises" by "Bpifrance Investment." "*Autres investisseurs*" means "other investors" (or LP's).

We see from this diagram that public institutions have financed seven private equity funds (totaling € 225M), which themselves are investing in private funds alongside funds of funds managed by Bpifrance. The size of these private funds of funds is only € 509m, while funds of funds managed by Bpifrance totaled €2b in the first program (2006-2012) and will reach more than € 4b in the second program (2012-2020).

In the mind of the creators of "France Investissement" program, half of the action was to pass through private funds of funds financed by the Caisse des Dépôts and the other half in public funds of funds, managed by CDC Entreprises, and matched by private investors. The whole should form an exemplary "public-private" partnership model. In fact it appeared that this model seemed theoretical and found no real economic justification.

Fairly quickly it was agreed that the "public-private" partnership sought would be more effective on the level of funds financed, not at the level of fund of funds.

1. FSI France Investissement 2020 – Schéma général (au 31 décembre 2012)



Moreover, due to the economic crisis of 2008, the French government has waived the financing of private funds of funds, to devote all budgetary efforts to create public direct funds, sometimes even 100% financed by public money. The main reason for this decision was the more rapid response to support businesses. Direct funds could to be created faster than funds of funds, and companies as well could quickly find the necessary capital for their development.

Funds of funds managed by private partners totalize € 508.9m:

- € 79m for "France Investissement APEH I" and € 78m for his successor "APEH France Investment II," created respectively in January 2007 and June 2009 and managed by Idinvest (ex AGF Private Equity);
- € 91m for "SGAM AI France Growth" Société Générale, created in May 2007 and managed by Amundi Asset Management;
- € 50m for "Groupama France Investissement" Groupama managed by Groupama Private Equity;
- € 100.7m for "Masseran France Selection 1" of the Caisse d'Epargne Group, created in November 2007 (including investments began in June 2007) and managed by Masseran Management;
- € 100.2m for "Dahlia France Investissement" Natixis, created in December 2007 (including the investments began in June 2007) and managed by Dahlia Partners;
- € 10m for "France AXA Investment" AXA Group, established in July 2008 and managed by AXA Investment Managers Private Equity Europe.

The joint action of private equity funds, alongside the public sector, proved decisive for the creation of some venture capital funds, including funds “Alven 3”, “Innovacom 6” and “Cathay Capital 1”, allowing them to reach critical mass and create a leverage on other private investors. Private funds of funds have also contributed to the diversification of funds financed by “*FSI France Investissement 2020*” (mezzanine funds, sector funds). Other funds of funds will be able to be created with “*FSI France Investissement 2020*”, mobilizing more private investors.

To be discussed at the Public Policy Forum, I would say that the activities of private "fund of funds" and the activities of public "fund of funds" are not alternatives but complementary approaches. The reasons for this view are the following:

- Investing public money in a private "fund of funds" has the same training role on private investors in funds of funds as the investment of public capital in private funds causes private capital in these funds.
- Investing public money in a private equity fund of fund therefore increases the capacity of investment available in the market segments for small caps. This is the objective prosecuted by the public authorities: increase the size of private equity funds so that there is more money available for business development. Public management of these tools is not an end in itself, especially if there are competent private teams on the market.
- Investing in a fund of funds is safer because of the inherent diversification of this model. This is especially true for a private investor who can look beyond pure financial returns, social and economic impact. This is the case of some "small institutions" (as the “mutual companies” in France) who do not have a specialized team, and for which the presence of a public investor reference to their side and investing in market conditions is reassuring. These small investors may feel more confident if the fund of funds is not managed by a public institution. They may prefer private management teams because they feel closer of them.
- The limit of this reasoning is that the government can’t divest in all investment decisions. The government must be able to continue to drive the market, and to give a chance to new teams, including seed and venture capital. That is why public funds of funds are also needed.

Analysis

European venture: patience rewarded

Source: **unquote** | 02 Aug 2013

European venture is worth looking at again, owing mostly to a 20-year evolution – but VCs are trailing the entrepreneurs, meaning European VCs operate in an underserved market. Kimberly Romaine investigates

Europe's venture story is one of patience - at long last - ready to be rewarded, according to the asset's longest-standing backers. "Strong returns are in the offing in Europe now and they're appearing faster than ever," says John Holloway (*pictured*), director at the European Investment Fund (EIF). This is a relief, since global venture has returned just 6.9% in the decade to 2012, according to Cambridge Associates - roughly akin to that of a mutual fund, but with less liquidity.

With €3.8bn invested across more than 260 European VC funds, the EIF is Europe's largest venture cheerleader and thus understandably bullish. But the fanfare is backed up by data from Cepres: European venture returns (median) stood at 15.6% for 2009-2013 vintages (unrealised based on cashflows), up from 11.48% between 1998 and 2008. And EIF has recorded positive net IRRs for the three years 2007, 2008 and 2009, and suggests that GP reports point to strong years since then.

"In 1999/2000, there was too much capital and there were not enough exits in Europe. It took a while for that to be rebalanced," explains Sonali De Rycker, partner at Accel Partners. The impact of this is a shake-out, according to Warren Hibbert of Asante Capital, an advisory firm that placed Sofinnova, Creandum and Abingworth: "Many have trended towards acting like European later-stage/growth capital managers - only a select few have been able to deliver on the promises of venture returns over the past decade or so. There is a prevailing conservative mind-set in Europe - 'how do we save every euro and every deal?' - which works well on the buyout side, but doesn't apply well to venture. Whereas we're now seeing the experienced venture firms that remain adopting more of a 'Sand Hill Road' approach to managing their venture portfolios - 'how do we access the best ideas, kill the losers quickly and run hard with the winners?'"

Accel's fundraising success suggests increasing faith in European VC; **the GP beat its target to raise $475m earlier this year in just eight weeks.** "The venture ecosystem in Europe has become much more sophisticated over the past few years and we're seeing world-class companies and talent, repeat entrepreneurs, industry clusters, angel investors and more venture capitalists. At this point, venture in Europe should be about accessing great European talent and making it a global success story," De Rycker says.

By and large, this is happening. Says Holloway: "We are seeing a transition of successful entrepreneurs from the first wave of venture (circa 1999) into investors. The upshot is a completely new breed of VCs in Europe - they are experienced and understand entrepreneurs." For example, Skype co-founder Niklas Zennström set up Atomico in 2006 and, in addition to smart money, he provides pulling power for other investors. Brent Hoberman, of Lastminute.com acclaim, set up PROfounders Capital; Xing's Lars Hinrichs is behind HackFwd; MessageLabs' Ben and Jos White now run Notion Capital and Mans Hultman of QlikTech set up Zobito - to name a few.

And others go on to create new start-ups, an erstwhile US phenomenon that seems to have finally caught on in Europe. According to Anne Glover, CEO and co-founder of Amadeus Capital Partners, less than a fifth of Amadeus's businesses in its first fund were led by serial entrepreneurs; this increased significantly to more than two thirds nine years later with Fund III. These start-ups are thinking beyond Europe, too: "Europe is home to many of the world's most innovative companies," says Marcos Battisti, MD of Intel Capital. "In the past 10 years, these innovators have begun thinking internationally, which is crucial for European businesses whose home countries are often the size of a single state in the US," he says.

Amadeus has just hit a first close on $75m for a fund looking to back businesses that are based in mature markets but whose products will be targeted to high-growth markets such as Africa, the Middle East and Asia. The Amadeus IV Digital Prosperity Fund is seeking $150m with global telco MTN Group as its cornerstone.

US invasion

With entrepreneurs in Europe more polished, state-side VCs are taking note. "We were at the vanguard of bringing in US VCs to Europe and it is now more commonplace," says Glover.

Some local players suggest the European market is underserved by local VCs, like Advent Venture Partners' Mike Chalfen: "US investors are flying in to back some of the most promising start-ups, which proves there is a vacuum."

EVCA data backs up the "underserved market" theory, suggesting in a recent report that US VC investment (in dollars) in European start-ups increased 165% between 2009 and 2011, mostly providing later-stage capital. And this trend looks set to continue, with 82 funds currently seeking $13bn in the US against just 27 vehicles raising a measly $2.3bn here (EVCA).

Adapt to survive

Many European VCs still around today have changed their spots in the past 15 years. For example, Sofinnova has a strong reputation but has specialised in life sciences after spending most of its life as both a life sciences and tech specialist. "Many firms are splitting up or shutting one discipline as they realise certain sectors don't always make good bedfellows," Hibbert says. Advent Venture Partners' first three funds backed life sciences and ICT companies, whereas the latest vehicles have been dedicated solely to early-stage life sciences. The latest fund was raised in 2010 and topped up to £101.3m last year.

Other funds retain a sector focus but shift their stage focus - usually towards lower-risk, later-stage investments. "This makes economic sense," says Glover. A few have remained early-stage, including Amadeus, DN, Earlybird, Holtzbrink and Index. "The commitment to remain early-stage is real testament to the belief in disruptive technology. With early-stage, it's about doing great deals, not just the easy deals," she says.

Indeed, DN actually prefers early-stage, according to the firm's founder Nenad Marovac: "Investing in later-stage is incredibly risky for a small fund since the businesses are still unproven, have high burn rates and often a lot of VCs involved, making it harder to have an influence. Pricing is also often very unattractive given the competition for growth deals." He suggests some later-stage investments proved most disastrous for his firm because when they got into trouble they required too much capital to help them. He says: "That is very difficult for a small firm. Alternatively, our early investments such as Endeca (sold to Oracle for $1.1bn) and Shazam among others have worked out really well." DN Capital is currently raising its third fund and has already closed on two thirds of its €100m target.

An increasing number of GPs are adopting a mix - de-risking the early-stage deals with some later-stage ones. Polaris, for example, has expanded into doing both growth capital and seed investing from the same fund. The idea is that the growth deals give LPs security that a handful of riskier seed deals can be pursued as the vehicle is effectively de-risked.

"It is our goal to have one of our first few deals a 'quick-to-exit' business (meaning three to five years)," Glover explains. "This allows us to retain some proceeds for reinvestment and helps to avoid getting cornered at the end of the fund's life." She admits the first and seed funds managed this but the second fund, owing to a difficult backdrop, was less successful.

Smart money

And as the entrepreneurs and GPs come of age, so too have many LPs. Says Holloway: "Since 2006, LPs are more selective about teams. There's little DPI to base it on but, if we're to believe the valuations our GPs are telling us, then TVPI has not been bad since then."

Government support schemes, once accused of backing commercially unviable endeavours and so propping up zombie GPs and dragging down industry returns (average), are now credited with more commercial acumen. Among others, Holloway points to Finnish Industry Investment, Capital for Enterprise and CDC Enterprises in France as three such examples. "Commercial due diligence and sophisticated teams are now in place within these bodies so they're effectively professional funds-of-funds. This has the bonus of increasing returns and sustainability - both crucial to the future of venture."

There are also two initiatives aimed at creating new Europe-wide funds-of-funds. The first is from the European Venture Fund Investors Network (EVFIN), a platform launched in 2011 to respond to European VC's plight, and is said to be looking to channel public money into a new vehicle. Backed by nine national initiatives, including Capital for Enterprise, CDC, KFK in Poland, KfW in Germany and SRIW in Belgium, as well as some commercial groups, including Capital Dynamics, its stated aim is "to create a self-sustained European VC market..." and it recommends "intermediating between European VC funds and institutional investors... best achieved by increasing the number of funds-of-funds financed and managed by national operators (public and private) with the financial support of the EIF or the European Commission". In short, the efforts appear to redirect existing public funds into a new vehicle.

EVCA, on the other hand, is looking to increase the size of the total pie available to invest in European venture by convincing Brussels to provide funding that will be matched by private sector money - effectively providing a leverage effect to the private funds, which should help generate momentum for backing European venture.

EVCA secretary-general Dörte Höppner says: "It is vitally important for jobs and growth to bring the private sector back to venture capital and broaden its investor base. The European Commission's funds-of-funds proposal is the smart use of public sector capital to enable institutional investors to invest in innovative, European firms and we strongly support it. European VCs have teams with a combination of skills comparable with any Silicon Valley outfit. These teams are not inexperienced, just undercapitalised."

European Commission funding to back the EVCA initiative could come from two areas of the 2020 budget: COSME (competitiveness for SMEs) and Horizon 2020 (research and innovation). Together they have €1-1.4bn set aside, with the idea being they would deploy some of the capital across a series of funds-of-funds between 2014 and 2020. The number and setup of those funds is yet to be agreed (there is the possibility to give an upside boost to the private capital), but the momentum and positive reaction from Brussels is testament to the efforts of EVCA since it published its white paper in 2010.

Even the smallest of investors, angels, have positively evolved in the venture space. There are more of them, many former entrepreneurs or VCs themselves, meaning they have the ability to bring expertise to the table and not just cash. Examples of "super angel funds" include Seedcamp, Startupbootcamp and Notion Capital.

But perhaps the most telling sign that European venture is back in vogue is the renewed interest of US institutions, which are putting their money where their mouths are: "In the past 12 months we've seen a far greater prevalence of US capital actively deploying with new managers," says Hibbert. He explains it is being led largely by the endowments in the US, which had been hardest hit in 2009. Since then, many rationalised their fund-manager relationships to focus on their very best existing and select new managers. They have also since seen their denominator effects reversed and so are now again looking to augment their private equity portfolios. "They're back in business, not just with money but actively deploying and, importantly, leading the crowd as far as cutting-edge ideas are concerned. Many are still looking for high-quality, lower mid-market groups in Europe and the US, but they're also open to first-time managers and new ideas - a paradigm shift to 2008-2010. They like the hunger of firms that are genuinely aligned and differentiated."

Make for the exit

Of course, it all comes down to the exits, and they are coming in at last. The week before unquote" went to press, **French VC Auriga made a staggering 33x money on the sale of Paris-based Neolane to Adobe for $600m cash**. The deal marks a 65x multiple on Auriga's initial €1.4m investment, made in 2002. Follow-on rounds saw XAnge and Battery Ventures also back the business. DN managed six exits in an 18-month period and Intel has had more exits in the past three years in Europe than in the previous seven. US trade is increasingly looking to American targets; Oracle bought up two of DN's businesses, while **Latin American wireless business America Movil and Mexican tycoon Carlos Slim pumped $40m into Shazam for a 10.8% stake** - another DN business. IDG had seeded Shazam while Kleiner Perkins Acacia, DN and Institutional Venture Partners are also backers.

Adobe's interest in the French target highlights a growing trend for US trade buyers to look to Europe for certain sectors. "We are hearing from US investors that they find real innovation in terms of IP in European businesses. They feel Europe has a tremendous wealth of publicly financed R&D," says EIF's head of venture capital Matthias Ummenhofer. "Valuations are high, but they're justified in certain sectors in Europe. In fact, it has been suggested Europe is surpassing Silicon Valley in music, finance and software platforms," he suggests, pointing to Shazam,

Spotify, Klarna, Clear2Pay, Wonga and MySQL as examples of excellent European venture-backed businesses.

US trade buyers looking to Europe often benefit from a discount in pricing, according to Battisti. "It will catch up one day but for now, European targets are attractive from a cost point of view. This is because of the perceived risks associated with currency and rigid labour markets."

LPs are waiting less time to see the upside, with hold periods dropping from 10-12 years. Getting products to market in the US, for example, may be quicker following a few years of bottlenecking owing to onerous US Food & Drug Administration (FDA) restrictions. Earlier this year, the FDA announced it would speed up the approval process for certain drugs, suggesting early-stage investments in the biotech space are more likely to pass the trial phase. The FDA's warming to the idea became apparent last year, when the regulator's approval rate was up a third on 2011.

Might the increasing momentum around European venture be the embryonic stages of yet another bubble? "Absolutely not," says Holloway. "This is because, while valuations are up, the short memories do indeed remember the excess of 1999-2000. We've survived excess, collapse and a phoenix-like rebirth. It's been very hard work, but the exits are coming and the LPs are following. By 2019, two decades on from the last bubble, we'll have an extremely healthy venture community in Europe."

- Tags: **European investment fund**, **Accel ventures**, **Amadeus capital**, **Advent venture partners**, **Sofinnova**, **Dn capital**, **Holtzbrinck ventures**, **Index ventures**, **Polaris private equity**, **Cdc entreprise innovation**, **Capital dynamics**, **Evca**, **Intel capital**, **Top story**
- Source: **unquote** ■ Author: **Kimberly Romaine**

Technology Innovation Management Review September 2013

Addressing Canada's Commercialization Crisis and Shortage of Venture Capital: Will the Federal Government's Solution Work?

Stephen A. Hurwitz

"Being a philosopher, I have a problem for every solution."

Robert Zend (1929–1985)
Poet, fiction writer, and multi-media artist

Lack of funding is a major challenge to innovation in Canada's emerging technology industry. This article will focus on this supply-side challenge within the complex venture capital ecosystem and discuss: i) the current shortage of venture capital available to commercialize Canada's R&D; ii) the causes and consequences of that venture capital shortage; iii) how the federal government will address this shortage through its innovative 2013 Venture Capital Action Plan, which commits $400 million and seeks to raise at least another $800 million from outside investors; and iv) how a separate decision in the federal 2013 budget to phase out federal tax credits for labour-sponsored venture capital funds could imperil the 2013 Venture Capital Action Plan.

Introduction

Canada has an abundance of great ideas and the world-class R&D to develop them. This abundance is hardly surprising given Canada's outstanding institutions of higher learning, exceptional research centres, and highly educated population. It is also a result of federal and provincial governments' R&D funding programs that are among the most generous and progressive anywhere, and, as a percentage of Canada's GDP, which is among the highest in the world. However, Canada has a serious shortage of that specialized funding source – venture capital – that is essential to commercializing that world-class R&D into products, jobs, and exports. This is Canada's commercialization crisis.

Because of the critical role venture capital plays in commercializing a country's R&D, this article will focus on the supply-side challenge within the complex venture capital ecosystem. Simply put, traditional sources of institutional financing such as banks are largely unavailable to emerging technology companies because they typically have few bankable hard assets such as equipment, inventory, and buildings; no positive cash flow; little, if any, operational history; and profits, and sometimes even revenues, that may be many years away.

Venture capital is pretty much the only institutional private financing available to assume the risks of funding the commercialization of unproven technologies. That is why it is called risk capital. But, in addition to capital, top-tier venture capitalists also bring specialized capabilities that even the most gifted young entrepreneur often lacks but are essential for successfully commercializing R&D. These capabilities include entrepreneurial experience in operating companies, domain industry expertise, and extensive networks in global customer and capital markets.

This article focuses on Canada's shortage of venture capital and how it limits the commercialization of the country's technology innovations. The next section highlights the extent of this shortage and examines its underlying causes. Then, an overview is provided of the federal government's 2013 Venture Capital Action Plan, which is designed to address this shortage. This is followed by a discussion of the impact of a separate decision in the federal 2013 budget to phase out federal tax credits for labour-sponsored venture capital funds. Finally, conclusions are offered.

How Serious is Canada's Venture Capital Shortage?

Like venture capital industries in many places in the world, including the United States and Europe, Canada's venture capital industry in recent years has faced challenging times. Statistics from Canada's Venture Capital & Private Equity Association (CVCA; cvca.ca) reveal that, in 2010 and 2011, the Canadian venture capital industry experienced its worst fundraising in more than 16 years. Although there was a significant uptick in *fundraising* from $1.0 billion in 2011 to $1.8 billion in 2012 (CVCA, 2012; tinyurl.com/kddkw2k), it was still well below the $3.9 billion achieved in Canadian fundraising in 2001 (BDC, 2010; tinyurl.com/7wg7ouw), with little assurance that the improved 2012 levels will recur in 2013. The levels of venture capital *investment* in Canada in both 2011 and 2012 were $1.5 billion (CVCA, 2012; tinyurl.com/kddkw2k); these levels are a far cry from the $3.7 billion investment level in 2001 (BDC, 2010; tinyurl.com/7wg7ouw).

Even when Canadian companies do obtain venture capital financing, it is often in amounts insufficient to meet their capital needs. In 2011 and 2012, Canadian companies backed by venture capital received on average only 44 cents in funding for every dollar of such funding received by US companies (CVCA, 2012; tinyurl.com/kddkw2k). Yet, these undercapitalized Canadian companies must compete in the same global market as their far-better financed US competitors, not to mention those from other countries. And, Canadian companies that do get funded encounter formidable difficulty in achieving venture capital follow-on financing, which is in especially short supply in Canada.

As a result, rather than blossoming into industry leaders, the author has witnessed many of these promising capital-starved but R&D-rich companies being sold early in their lifecycles – and at low prices – and being then moved, along with the future jobs they will create, to the United States.

Understanding the shortage
No viable solution to the shortage of venture capital can be devised without understanding its underlying causes. In the author's view, the following conditions and actions have limited the currently availability of venture capital in Canada:

1. During roughly the past decade, the Canadian venture capital industry has performed poorly. It did not help that, during this period, there was a burst technology bubble, a serious recession, and insufficient liquidity opportunities (i.e., initial public offerings, mergers, or acquisitions).

2. Because of this poor performance, large Canadian institutional investors that had funded Canadian venture capital firms withdrew from the venture capital asset class.

3. At the same time, venture capital firms in the United States, which in prior years had accounted for as much as 40% of all venture capital funding in Canada, greatly reduced their investments in Canada because of their own fundraising and portfolio company troubles in the United States.

4. Unlike the US venture capital industry, with its long-standing investment experience developed over 60 years, Canada's venture capital industry is relatively young and less experienced, with more than 92% of its venture capital firms formed after 1994 (CVCA, 2009; tinyurl.com/cba2fw).

5. The vast majority of Canadian venture capital firms are sub-scale in size (i.e., well below $100 million) with inadequate funds to fully participate in the major investments needed to grow and scale production of their portfolio companies and to accelerate their sales to enter world markets. These sub-scale venture capital firms are inadequately integrated into the global venture capital ecosystem and do not have the funds to systematically invest large amounts over time in potential big winners through investment networks with other venture capital fund co-investors to fund all the stages of their growth through industry leadership.

6. A significant portion of the Canadian venture capital industry, particularly in its early years, has been composed of government or quasi-government and government-sponsored funds, often with severe constraints limiting their investments to the geography of the funding jurisdictions. These restrictions, in turn, limited the deal flow and investment choices essential for funds to optimize investment performance and returns. In addition, misalign-

Addressing Canada's Commercialization Crisis and Shortage of Venture Capital

Stephen A. Hurwitz

ments of interest often arose between the government funds' investment managers and the companies they invested in, because government fund-compensation structures often did not include the private-industry management performance upside benefits needed to strongly incentivize their investment managers to achieve the liquidity events (i.e., initial public offerings, mergers, or acquisitions) desired by the companies' management and private-sector investors.

No recovery can occur in the Canadian venture capital industry without solving, in particular, problems 2 and 5. Without institutional investors, there is no sustainable solution to the capital shortage in the Canadian venture capital industry. Although individuals and corporate investors play an important role in funding Canadian venture capital firms, the return to the market of giant institutional investors collectively possessing hundreds of billions of dollars available for investment in venture capital funds is key to a successful Canadian venture capital industry. Without large-scale funds, Canadian technology companies will have insufficient investor capital to participate in funding all the stages of their growth through industry leadership.

Canada's 2013 Venture Capital Action Plan

The federal government's solution to the shortage of venture capital is the 2013 Venture Capital Action Plan (tinyurl.com/obstvtw), which commits $400 million and seeks to raise at least another $800 million from outside investors. Of the $400 million in federal funding committed under the plan, the federal government will put a total of $350 million into four funds of funds, each of which is intended to be led by highly experienced private-sector investment managers, and $50 million will be reinvested directly into venture capital firms. More specifically, that $400 million financing will comprise:

- $250 million for two new national funds of funds in the amount of $125 million each
- $100 million for recapitalizing two existing Canadian funds of funds in the amount of $50 million each
- $50 million for investment into three to five high-performing existing Canadian venture capital firms

The four funds of funds collectively will seek to raise at least an additional $800 million from outside investors (especially institutional ones) for a total of $1.2 billion, to be deployed over seven to ten years. The exact incentives the government will offer for other investors to invest $800 million in the new funds of funds are expected to include creative ones such as the right of such investors to fulfill their capital commitments after the government fulfills its capital commitments and to receive returns on investment in advance of the government receiving its returns. To enhance the chances of success with the new funds of funds, the chosen investment managers are expected to be highly experienced and successful in their prior investments, and they are expected to commit their own capital. The funds of funds will focus primarily on early-stage investment (e.g., series A or B), with some growth equity and expansion capital investments throughout the lifecycle of their portfolio companies. See the later sub-section "Perpetuation of sub-scale venture capital funds" for a discussion of why this primary focus on early-stage investing will perpetuate Canada's late-stage financing problem *if the new funds of funds do not invest primarily in large-scale venture capital funds*. The exact investment strategies and the size and number of the funds of funds will depend on discussions with private-sector investors, and the investment strategies selected will be those that are expected to maximize participation from institutional and corporate strategic investors.

Investment managers of the new funds of funds, and of the venture capital firms they invest in, will be required to have a "substantial presence" in Canada, including a principal office engaged in active investing, with senior professionals meeting residency and other requirements. These conditions would allow foreign investment managers to open offices in Canada and partner with local ones in the new funds of funds and in the venture capital firms in which they invest. Foreign top-tier investment managers who are selected would bring to Canada their network of significant relationships in major global customer and capital markets. They would also be bridges to the large higher-priced exits available in the United States and other foreign jurisdictions that have major capital markets.

Venture capital firms receiving capital from the new funds of funds will be required to invest at least a third of their total capital in Canadian-domiciled companies, with the remaining two-thirds investable anywhere in the world. This flexibility to invest outside of Canada will enable relationships with other foreign global investors and markets. These cross-border relationships, in turn, are expected to lead to those same foreign global investors co-investing in Canadian companies with the Canadian venture capital firms.

Thus, in the author's view, the Canadian government has developed the right plan to address Canada's venture capital shortage by:

1. Building a self-sustaining industry that will be led and funded by the private sector and will be market- and return-driven in its investment strategies.

2. Putting up substantial public funding to kick-start the venture capital industry, but playing no role in its investment management.

3. Selecting highly-experienced investment managers from the private sector with a history of successful investment performance.

4. Incentivizing the private sector with special incentives to fund the new fund of funds program in an amount greater than that provided by the government.

5. Structuring the new program so that well-connected, top-tier foreign investment managers can partner with Canadian ones in the new funds of funds.

6. Enabling broad latitude to invest outside of Canada to forge relationships with global investors and markets.

Potential Peril for the 2013 Venture Capital Action Plan

Phase out of federal tax credits for labour-sponsored venture capital funds

In its 2013 budget (tinyurl.com/paqlyqb), the federal government announced that, by 2017, it would phase out all federal tax credits that currently incentivize individual investors to invest in labour-sponsored venture capital corporations (LSVCCs). The timing of this phase-out decision could not be worse. Although it is unclear to what extent various provinces will follow the federal government's lead and abandon their own LSVCC tax credits, or to what extent individual investors in the absence of tax incentives will cease investing in LSVCCs, the outcome for the Canadian venture capital industry is likely to be unfavourable. The federal government's decision could potentially result over time in a drop in available venture capital funding in Canada that exceeds the entire amount expected to be deployed under the 2013 Venture Capital Action Plan. This means that the plan could result in *a net decrease* in venture capital funds available to fund Canadian innovation.

More specifically, according to leading independent venture capital consultant Gilles Duruflé (2013; tinyurl.com/lbw5y6c), Quebec LSVCCs, currently representing over 75 percent of all funding by Canadian LSVCCs, on average invested per year over the 2006–2012 period: i) $69 million in VC funding directly in technology companies and ii) $74 million in private independent VC funds. This total of $143 million per year invested from Quebec LSVCCs alone could by itself be roughly in the range of the amount per year ultimately to be deployed under the government's 2013 Venture Capital Action Plan (assuming it achieves the expected minimum $800 million in outside investor funding). And, this $143 million figure does not even take into account an additional $58 million per year from Quebec LSVCCs in venture capital investments in traditional sectors over the same 2006–2012 period, bringing the total per year to $201 million.

LSVCCs have been major players in Canada in funding companies backed by venture capital and private-sector venture capital funds (Duruflé, 2013; tinyurl.com/lbw5y6c):

1. Beginning in 2004, there was a major shift of Quebec-based LSVCCs and certain Quebec-based institutional investors from investing directly in companies to investing in venture capital funds. For a significant number of Canadian private independent funds raised in the last decade, LSVCC funding directly or indirectly played a critical role without which it would have been very difficult for these private funds to have achieved a first closing.

2. From 2004 to 2012, $5.7 billion was raised by Canadian private independent funds, of which $2.5 billion (45%) included a contribution from LSVCCs.

3. Quebec LSVCCs have committed $830 million to 59 private independent funds within Quebec and across and outside of Canada.

Although LSVCCs, particularly in their early years, have been justifiably criticized for various structural, management, and performance deficiencies (some of which have since been ameliorated), their diminished presence in the marketplace by 2017 could imperil the success of the 2013 Venture Capital Action Plan by depriving the four funds of funds, and the venture capital firms in which they invest, of critically needed LSVCC co-investment capital.

Addressing Canada's Commercialization Crisis and Shortage of Venture Capital

Stephen A. Hurwitz

This problem is further compounded by the possibility that the $1.2 billion to be deployed under the 2013 Venture Capital Action Plan over seven to ten years may itself be insufficient even if LSVCC tax credits were not being phased out. Because it can often take at least two successive successful fundings to ensure future self-sustaining fundings for a venture capital firm's management team, another significant federal financial commitment beyond that in the 2013 Venture Capital Action Plan might still be needed toward the end of the initial ten-year deployment period. On a positive note, the government could always add additional funds at that time if deemed appropriate.

Perpetuation of sub-scale venture capital funds

Another challenge facing the 2013 Venture Capital Action Plan is the sub-scale size of most existing Canadian venture capital firms. If the 2013 Venture Capital Action Plan does not result in a substantial increase in the average size of venture capital firms to be funded in the future, the Canadian venture capital industry may not recover.

In its 2012 Economic Action Plan (tinyurl.com/8a55cu4), the Canadian government highlighted the need to support the creation of "large-scale venture capital funds", meaning in the $200 to $300 million range. However, when the government further detailed this goal in its 2013 Venture Capital Action Plan, it instead referred to large-scale funds of funds. Most observers missed this critical distinction. In addition, because of the significant anticipated reduction in LSVCC investment capital as a result of phased out federal tax credits, the four funds of funds may not have the direct and indirect LSVCC co-investment funding needed to finance large-scale venture capital funds and the technology companies in which they invest. This means that one of the most serious existing flaws in the Canadian venture capital industry – the preponderance of sub-scale venture capital funds – not to mention the shortage of venture capital generally, may be perpetuated.

Why are large-scale venture capital funds so critical for investment success? Studies have shown that VC firms in the $200 to $300 million range have the strongest performance over time, and those that are smaller are less successful (BDC, 2010; tinyurl.com/7wg7ouw). In Canada, the average venture capital fund is well below $100 million; however, for Canada, approximately $200 million is the right size for its venture capital funds, for the following reasons. Large-scale venture capital funds of this size possess:

1. The capital necessary to finance promising technology companies through all the stages of their growth through industry leadership. They are lifecycle investors.

2. The financial heft to provide the competitive compensation needed to attract and retain highly experienced professional venture capital managers with proven records of performance.

3. The financial resilience to weather the economic downturns and droughts in initial public offerings, mergers, and acquisitions that are certain to occur over a venture capital firm's 10 to 12 year life. Without financial strength, small venture capital firms will often fail because they have insufficient funds to provide extended financing during protracted economic downturns.

4. The ability to attract investment from institutional investors, which are unlikely to invest in sub-scale funds.

5. The ability to attract deep-pocket US co-investors and thus can leverage their existing funding on a significant scale. They can assuage the concerns of US venture capitalists who are often reluctant to co-invest with Canada's small sub-scale funds. US venture capitalists justifiably worry that, although Canada's small funds may have capital for early-stage investing, when it comes time for critical late-stage financing infusions, they often fall short.

6. The financial strength to reduce the vulnerability of many small Canadian venture capital funds stemming from their over-dependence on large US venture capitalists, who cherry-pick many of Canada's large-dollar, late-stage financings. US venture capitalists generally invest in at least 10% of Canadian venture capital deals by Canadian companies comprising 31% of exits and 44% of exit proceeds (BDC, 2010; tinyurl.com/7wg7ouw). That harmful over-dependency reflects the financial inability of small Canadian venture capital funds to participate in these late-stage financings and results in devastating dilution of their early investments.

7. The potential to spur angel and early-stage investing by giving these investors confidence that significant venture capital follow-on funding would be available for their companies.

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Conclusion

Canada's 2013 Venture Capital Action Plan is both bold and innovative. However, two dark clouds loom: i) the detrimental timing of the government's phase out of federal LSVCC tax credits (at least as relating to direct or indirect VC investments by LSVCCs) and ii) the related uncertainty as to whether the underlying Canadian venture capital firms financed under the 2013 Venture Capital Action Plan will be large enough to successfully regenerate Canada's venture capital industry.

The success of the 2013 Venture Capital Action Plan could well hinge on whether the government can solve these problems. The government should rescind its phase out of LSVCC tax credits and not revisit that issue until its 2013 Venture Capital Action Plan has succeeded in jump-starting a robust, self-sustaining, private-sector venture capital industry. In addition, the investment managers selected by the government for the funds of funds need to understand in developing their investment strategies the importance of large-scale venture capital funds for a successful venture capital ecosystem.

If these problems are addressed, the 2013 Venture Capital Action Plan will offer a promising, albeit still challenging, path to achieving a critical missing requirement for a successful Canadian innovation ecosystem: a venture capital industry led and funded by the private-sector with the capital and investment expertise to successfully commercialize Canada's outstanding R&D into world-class products, high-quality jobs, and robust exports.

About the Author

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OECD Science, Technology and Industry Policy Papers No. 9

Policies for Seed and Early Stage Finance

FINDINGS FROM THE 2012 OECD FINANCING QUESTIONNAIRE

Karen Wilson, Filipe Silva

EXCERPTS

5. Fiscal/tax incentives

OECD

5. Fiscal/tax Incentives

5.1 Policy rationale for intervention

1. Increasingly, tax incentives are being used as a way to address asymmetries in the treatment of profit and losses (Poterba, 1989, Gendron 2001, Cullen and Gordon, 2007) which can help in removing barriers and encouraging more investment in start-ups (Criscuolo and Wilson, 2013). These include young innovative company schemes, tax credits on investment, reduced capital gains taxes for investors in start-ups and/or provisions for rollover or carry forward of capital gains or losses.

2. Capital gains tax is an important factor that shapes the seed and early stage equity market (Da Rin *et al*., 2006) as tax will influence the investment and exit decisions by angel investors and venture capitalists. Recent evidence suggests that, despite a flight to quality selection effect, higher capital gains tax rates reduce both the number of VC-backed and successful companies (Achleitner *et al*., 2012). Beyond the arguments that increased taxation reduces the incentives to invest in seed and early stage ventures, capital gains taxes have also been argued to work as a barrier to entrepreneurial activity and creation of new firms (Poterba, 1989; Keuschnigg and Nielsen, 2004).

5.2 Public policy interventions

3. Table 4 provides an overview of the answers provided by member countries to the OECD financing questionnaire. The first column indicates countries that have fiscal incentives for “young innovative companies” and how these incentives have changed over the past five years. The second column indicates which countries have “front-end” tax incentives or tax deductions for investment in seed and early stage ventures. The third column indicates which countries have “back-end” tax relief on capital gains, including rollover or carry forward of capital gains or losses.

4. As highlighted during the OECD policy workshop on seed and early stage financing held in Norway in September 2012, the general tax levels in the country – personal income, corporate and capital gains taxes, need to be taken into account when assessing fiscal incentives. In countries with no capital gains tax, such as New Zealand and Switzerland, “back-end” tax incentives are not relevant. The final column in the chart below therefore shows the long-term capital gains tax rate as a reference point.

Table 4: Fiscal/tax incentives (summary of results from OECD Questionnaire)

	YIC	"Front-end" tax incentives	"Back-end" tax incentives	Top long-term capital gains tax rate (2011)[+]
Australia			○	22.5
Austria		▽	▽	0
Belgium*				0
Wallonia				
Flanders		▲	○	
Federal	▲	▲	▼	
Canada	○	○	▲	22.5
Chile				20
Czech Republic				0
Denmark			▲	42
Estonia				21
Finland				28
France	▼	▼	○	31.3
Germany				25
Greece				0
Hungary				16
Ireland	∆	▲		25
Israel	∆	∆	∆	20
Italy	∆	∆	∆	44.5
Japan		▲		10
Korea	▲	▲		0
Mexico				0
Netherlands				0
New Zealand				0
Norway				28
Poland				19
Portugal		▼		46.5
Slovak Republic	✓	✓		19
Slovenia			∆	0
Spain				21
Sweden				30
Switzerland		▽		0
Turkey	○	∆	○	0
United Kingdom		▲	▲	28
United States*				19.1

*Note: The United States only has seed and early stage fiscal\tax incentives at the state level which are not included in the chart above. Belgium provided information at the regional level only, which is included. Iceland and Luxembourg did not complete questionnaires and therefore are not included in the table.

[+]Source: Ernst & Young (2012). Top long-term individual capital gains tax rates on corporate equities. Weighted average based on each country's GDP. Includes both central government and sub-national tax rates.

✓: Country has corresponding programme
▲: Increased
▼: Decreased
○: Remained unchanged
∆: Started in the last 5 years
▽: Ceased during the last 5 years

5. It should be noted that tax incentives can be a "blunt" instrument (i.e. difficult to target effectively) so careful design, monitoring, evaluation and adjustment is necessary to ensure the intended results are achieved (OECD, 2011).

5.2.1 Young Innovative Company Programmes

6. Young innovative company programmes typically provide tax relief and a reduction in social charges for young firms which have a demonstrated innovation focus. This is often specified by a commitment of resources to research and development. The rationale behind these programmes is to address the lack of funding during the first years of a firm's development as well as a weak investment rate in innovation by young firms. Policies that provide tax relief during the early years of a start-up help to increase cash flow and encourage investment (Lerner & Sahlman, 2012).

7. According to the questionnaire responses, only 9 out of 32 OECD countries answering the questionnaire have YIC programmes in place, with three countries indicating these programmes started in the last five years. Moreover, only a few countries have indicated that they have conducted evaluations of these programmes.

8. France, which is one of the countries often referenced for these types of programmes, indicated that government support for these programmes has decreased in the past 5 years. The following box highlights the key elements of the programme.

Box 1. Jeune Entreprise Innovante (JEI)

France

Classification:	Tax: YIC			***Year launched:***	2004
Size:	EU definition	***Geographic scope***	France		
Age/Stage:	<8 years	***Sector:***	All		

Overview

The Jeune Entreprise Innovante (JEI) scheme for YIC allows a tax relief as well as a reduction in social charges for young, highly innovative SMEs.

Approach

Companies eligible for the JEI status benefit from a range of tax reliefs including:

- ***Corporate tax***: full tax exemption from corporate tax in the first year of profit and a 50% relief in the second.
- ***Annual tax***: full exemption of fixed annual tax throughout the period for which it retains the JEI status.
- ***Local taxes***: upon decision by local authorities, exemption from territorial contribution and tax on developed property for 7 years.
- **Social charges***: a JEI is also exempt from employer charges and social security contributions applicable to employees engaged in R&D activity. Full exemption from social security contributions cannot be combined with other exemptions of employer contributions or employment State aid.*

These tax incentives cannot exceed the *de minimis* ceiling set by the European Commission.

Criteria

To be eligible for the JEI scheme, a firm must:

- Have a minimum amount of R&D expenses (15% total tax deductible expenses in the corresponding year);
- Be independent and not result from a merger, restructuration or extension\recovery of existing activity.

Source: http://www.enseignementsup-recherche.gouv.fr/cid5738/le-statut-de-la-jeune-entreprise-innovante-jei.html

9. The Ministère de l'Economie et des Finances, Service des études et des statistiques industrielles (SESSI) conducted an evaluation of the JEI in 2008. The scheme was found to have a joint positive impact on the employment of qualified personnel and total payroll (excluding social contributions). Even though a positive effect upon firm creation could not be disentangled, the JEI was associated with a significant slowdown in the closure of young firms belonging to high-tech services (the majority of firms that applied to the scheme were in ICT and life sciences). The scheme was modified in 2011 to reduce the social allowances allowed.

10. The Ministry for Economic Regeneration conducted another evaluation of the scheme in 2012 (DGCIS - Hallépée et Garcia, 2012) to take into account mid and long term impacts on the YIC. It showed that the YIC in the scheme have strongly increased employment and turnover but less than half of the firms made a profit. It also showed that the scheme improves the survival rate of the YIC. The evaluation concludes that the increase in R&D investment by the firm benefiting from the scheme was higher than the budget cost of the scheme.

5.2.2 Front-end or Back-end tax incentives

11. Front-end tax incentives are tax deductions on investments in seed and early stage ventures. A number of countries have these in place, particularly to encourage investors to invest in young innovative firms. Back-end tax relief is related to capital gains and losses, including rollover or carry forward. Back-end tax relief often aims to encourage investors not only to invest, but also to reinvest, in seed and early stage firms.

12. Many countries indicated that they have "front-end" or "back-end" tax incentives in place for seed and early stage investment. 13 out of 32 OECD countries indicated that they have "front-end" tax incentives in place and in the majority of cases support has increased for these programmes. 11 out of 32 OECD countries have "back-end" tax incentives with support increasing in half of the cases and remaining mostly unchanged in the remainder. Again, relatively few countries indicated that they have evaluated these programmes.

13. Enterprise Investment Scheme (EIS) was introduced by the British government to encourage equity investment in small and medium companies (Box 3). EIS has been in place since 1994 and is the most often cited example of an investor tax incentive programme. Currently, there is income tax relief available to investors at 30% on the amount invested through EIS, as well as two capital gains tax reliefs.

Box 2. Enterprise Investment Scheme (EIS)

United Kingdom

Classification:	Tax: Front-end & Back-end	***Year launched:***	1994
Size:	250 employees; £15m gross assets	***Geographic scope***	UK
Age/Stage:	All	***Sector:***	Only qualifying activities, as defined by HMRC

Overview

There are three tax reliefs available to potential investors, designed to encourage investment into companies which otherwise may struggle to secure equity funding.

Approach

Front-end: The maximum investment on which tax relief is available for individual investors, is GBP 1 000 000. Investors receive 30% of the amount invested as a deduction from their tax liability.

Back-end: There is also scope to defer tax liability on existing capital gains reinvested into EIS-qualifying shares. If the EIS shares are disposed of at a gain, there is no capital gains tax to pay. The tax reliefs are all contingent upon the investor holding the shares for at least three years from date of issue.

Criteria In order to qualify for investment via the scheme, a company (or the group of which it is the parent) must meet certain conditions, the most significant of which are as follows: • It must not be quoted on a recognised stock exchange • It must not be controlled by another company • Its activities must be qualifying ones, as defined by HMRC. Other restrictions apply, to ensure that the scheme is appropriately targeted and is not misused. *Source:* HM Revenue & Customs: http://www.hmrc.gov.uk/eis/index.htm.

14. Earlier evaluations of EIS, mostly conducted by outside experts/academics, were positive and suggested significant additionality in terms of the amount of money invested (over 50%) as well as a positive impact on the companies in which they invested (Mason, 2009).

5.2.3 Regional tax incentives

15. Some countries provide tax incentives at the regional, not the national level. These include the U.S., in which tax incentives are implemented at the state level and Canada, in which tax incentives are at the provincial level, as well as some other countries.

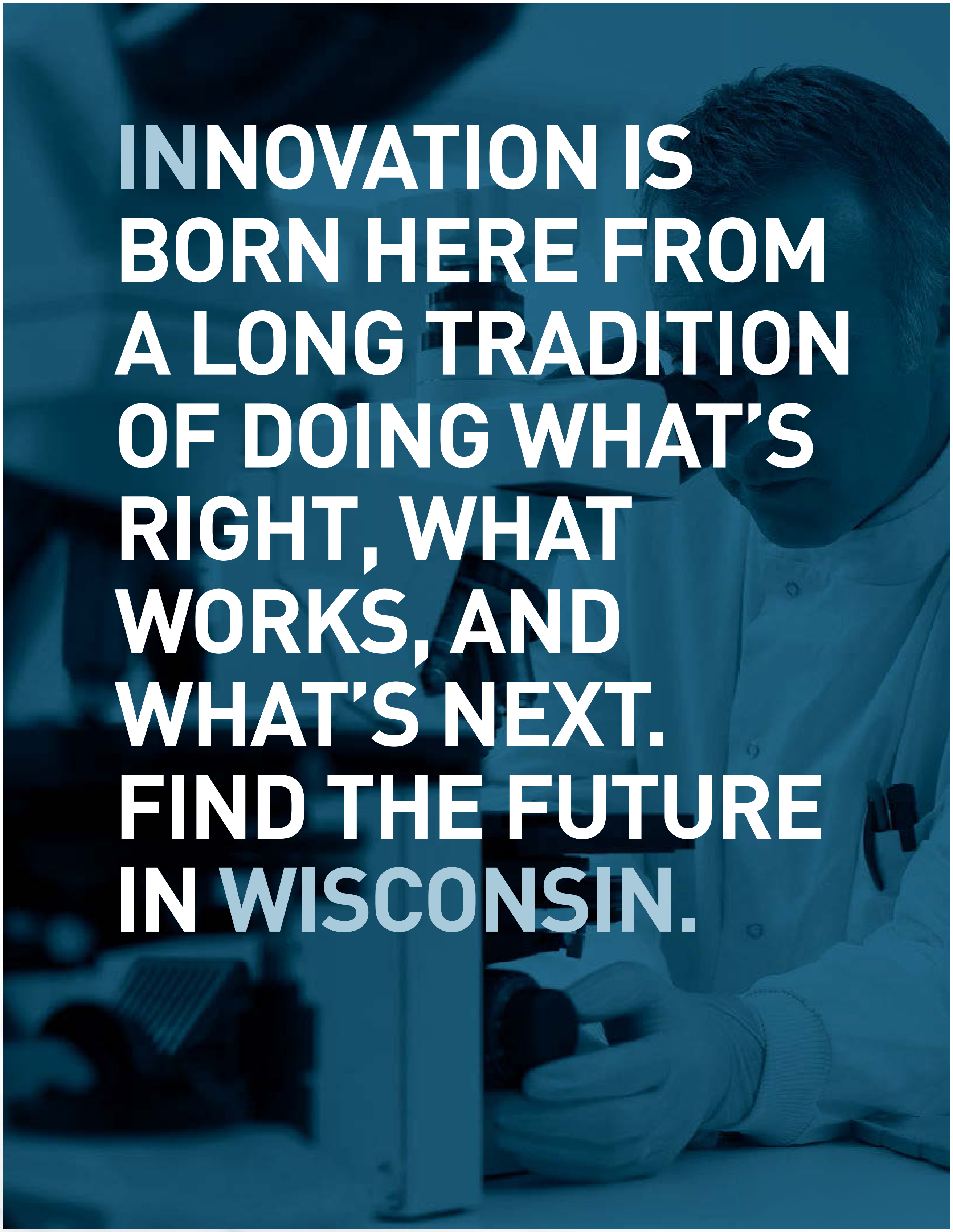
WISCONSIN ECONOMIC DEVELOPMENT CORPORATION

DRIVING INVESTMENT TO HIGH-GROWTH BUSINESSES IN WISCONSIN

QUALIFIED NEW BUSINESS VENTURE (QNBV)

EARLY STAGE SEED BUSINESS TAX CREDIT PROGRAM
2012 ANNUAL REPORT

Wisconsin Economic Development Corporation


INNOVATION IS BORN HERE FROM A LONG TRADITION OF DOING WHAT'S RIGHT, WHAT WORKS, AND WHAT'S NEXT.
FIND THE FUTURE IN WISCONSIN.

Wisconsin has a rich history of home-grown innovation. Visionary Wisconsin startup companies with humble beginnings are today global leaders in their industries—Harley-Davidson, Trek, Cellular Dynamics, Kohler, Miller, Johnson Controls and Rockwell Automation. While our legacy is impressive, Wisconsin needs new businesses based on technology and innovation to remain competitive in a global, technology-driven marketplace.

Given today's financial realities, most new high-growth companies need outside investment to bring their ideas to market. That is where Wisconsin's Act 255 Qualified New Business Venture (QNBV) Program comes into action. This 2012 QNBV Annual Report details the program's success in helping qualified new business ventures leverage tax credits to attract the startup and growth investment they need.

The results of the QNBV Program have been overwhelmingly positive as seen throughout this report. The companies enrolled in the QNBV Program provide jobs with average wages nearly three times the average Wisconsin per capita wage. These high-paying jobs provide opportunities for Wisconsin's skilled workforce and lead to a more productive and resilient economy.

From its inception in 2005 through December 31, 2012, the QNBV Program has distributed $58.8 million in tax credits. More importantly, the companies in the program have attracted over $916 million in capital that has been invested in new technologies.

One of the Wisconsin Economic Development Corporation's main goals is to build the economic infrastructure that allows for robust business creation. By spurring direct capital investments into new, high-growth companies the QNBV Program helps our state foster new ideas and lay the foundation for future business success and job growth.

Reed E. Hall

Reed E. Hall
Secretary and Chief Executive Officer

2012 QNBV Program Highlights

160 CERTIFIED COMPANIES

$12.1M CREDITS ISSUED

$201.8M TOTAL FUNDING

Leverage

16:1 LEVERAGE RATIO

$12.1 million in credits helped certified companies attract over $201.8 million in total funding.

Credits

INVESTING IN NEW BUSINESS GROWTH IN WISCONSIN

The Qualified New Business Venture (QNBV) Program, also known as the Early Stage Business Tax Credit Program, allows eligible investors to claim a 25 percent tax credit on the amount they invest in QNBV company. The tax credit applies to equity investments made by individual investors, angel groups and venture capital investors. This innovative capital incentive program establishes a critical model of cooperation between the public and private sectors.

In 2012, 44 new companies received QNBV certification, bringing the number of companies currently in the program to 160. WEDC verified $12.1 million in tax credits for 63 of those certified companies, directly leveraging $48.4 million of private investment. QNBV companies also attracted an additional $116.3 million of private capital that did not utilize the credit and $37.1 million in grants, bringing the total amount of funding to $201.8 million. However, certified companies indicated to WEDC that their anticipated financial need for the year was $372.4 million, leaving a financial gap of over $170 million for certified companies.

QNBV SUCCESS IN WISCONSIN

Pinpoint Software, a software development company based in Whitewater, has developed Date Check Pro expiration date management software. The company has attracted over $425,000 in capital from angels (both groups and individuals). The company has been certified for up to $110,000 in tax credits through the program.

> "It is certainly a credibility-builder to say that we have been certified."
>
> — Andrew Hoeft, Owner
> Pinpoint Software

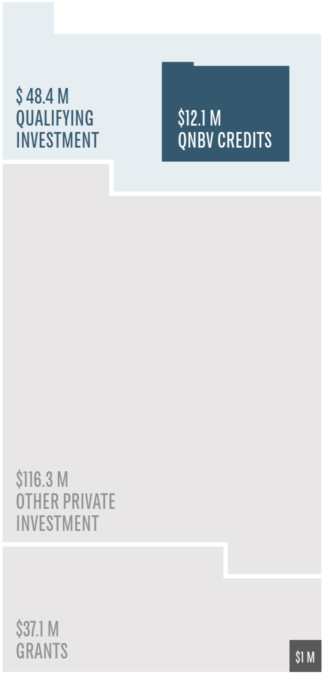
"As a startup, it's been a challenge to be fundraising at the same time I'm developing and testing Date Check Pro and bringing it to the marketplace," said Andrew Hoeft, Pinpoint's owner. "Many investors have asked if we have received QNBV status. It is certainly a credibility-builder to say that we have been certified."

"We have an aggressive vision for growth, including our national sales campaign that we launched at the National Grocers Association conference in Las Vegas in February 2013. We're ready to become a larger company and are taking steps to move out of the startup stage. QNBV certification is a good tool to have as I explore future investment," Hoeft said.

2012 QNBV Summary

$12.1M

$8.1 million in angel tax credits were issued along with $4 million in early stage seed credits. See tables 5 and 6 (page 14), for more detail.



$201.8M

Total funding received by certified companies including qualifying investments, other private investments and grant funding. See table 1 (page 10), for more detail.

LEVERAGING HIGH-TECH BUSINESS INVESTMENT IN WISCONSIN

Since the program's inception in 2005, 237 companies have been certified, and WEDC has verified $58.8 million in tax credits based on $235.2 million in qualified investment. QNBV companies have brought in over half of a billion dollars in additional outside investment and $113.1 million in grant funding to bring the total amount of funding generated to over $916 million.

QNBV SUCCESS IN WISCONSIN

> "The QNBV program with angel investor tax credits is a good program. While it will never be a reason to invest in a company without solid fundamentals, my belief is that it will generally mean a larger investment."
>
> — Pete Marsnik, Manager Chippewa Valley Angel Investors Network

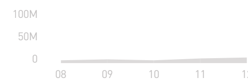
The QNBV (Act 255) Program has provided angel investors additional incentives to invest in Wisconsin companies. Prior to the program, Chippewa Valley Angel Investment Network had invested only $1 million in Wisconsin companies. At the end of 2012, the Chippewa Valley Angel Investment Network had over $4 million invested in nine ventures based in Wisconsin and Minnesota. One has had a positive exit, while another is no longer operating. Five of the ventures are Wisconsin QNBVs, representing a total investment of about $1.9 million. The network, supported by Momentum West, was organized in 2003 to provide private equity financing for early-stage and startup entrepreneurial ventures in the greater Chippewa Valley.

"The QNBV program with angel investor tax credits is a valuable program. While it will never be a reason to invest in a company without solid fundamentals, my belief is that it will generally mean a larger investment. This helps startup entrepreneurs hit their funding targets sooner with fewer investors, saving time to work on the business," said Pete Marsnik, manager of the Chippewa Valley Angel Investors Network.

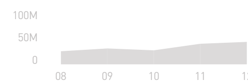
Historical QNBV Summary

$58.8M

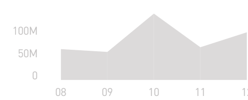
$35.9 million in angel tax credits were issued along with $22.9 million in early-stage seed credits since the QNBV program's inception. See table 5 and 6 (page 14), for more detail.



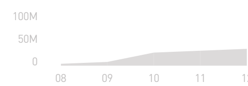
$58.8M QNBV CREDITS



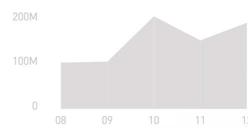
$235.2M QUALIFYING INVESTMENT



$567.8M OTHER FINANCING



$113.1M GRANTS



$916.1M TOTAL INVESTMENTS

$916.1M

Total funding received by certified companies including qualifying investments, other private investments and grant funding. See table 1 (page 10), for more detail.

DRIVING HIGH-GROWTH SECTORS IN WISCONSIN

Emerging growth companies verified for QNBV certification represent a range of industry sectors, but all must have the potential for creating new innovative solutions and have the potential to increase both capital investment and jobs in Wisconsin.

Historically, the biotechnology sector has lead QNBV certifications. However, the number of companies receiving certification has shifted from biotechnology to information technology. Investments in these two key technology sectors represent a total of 60 percent of the qualifying investment activity in the program for 2012.

2012 Industry Portfolio

$48.4M TOTAL QUALIFIED INVESTMENTS

$29.3M QUALIFIED INVESTMENTS IN BIOTECHNOLOGY AND INFORMATION TECHNOLOGY

Biotechnology and information technology represent 60 percent of the total $48.4 million in qualified investments.

QNBV SUCCESS IN WISCONSIN

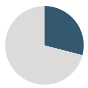
In 2012 HarQen LLC closed the final leg of its third fundraising round, raising $4.3 million in venture funding. This brings to more than $7 million the amount that the company has raised from outside investors. HarQen was certified as a QNBV in 2009.

> "... (T)he tax credits provide that extra bit of incentive to keep good investment dollars in the state."
>
> — Ane Ohm, President
> HarQen LLC

Founded in 2007, HarQen's intelligent Voice Service enables meetings, interviews and other conversations to be captured, enriched, organized and shared, improving collaboration. For example, their Voice Advantage solution allows users to create and share video or phone interviews, allowing companies and job candidates greater interview convenience.

"The ability to offer tax credits to our Wisconsin investors was critical for us to successfully reach our goals during this latest round of fundraising. In our experience, angel investors in Wisconsin like the idea of supporting the local startup community. At the same time, the tax credits provide that extra bit of incentive to keep good investment dollars in the state," said Ane Ohm, HarQen's president.

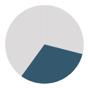
$14.1M INVESTED IN BIOTECHNOLOGY



29% OF QUALIFIED INVESTMENT

$14.1 million in qualified investments have been made in certified biotechnology companies. See table 3 (page 12), for more detail.

$15.2M INVESTED IN INFORMATION TECHNOLOGY



31% OF QUALIFIED INVESTMENT

$15.2 million in qualified investments have been made in certified information technology companies. See table 3 (page 12), for more detail.

EARLY-STAGE IMPACT ON JOBS IN WISCONSIN

The long-term success of the QNBV Program is based on the additional jobs and wages generated as the enrolled companies grow over time. The portfolio companies created 170 net new full-time jobs and 40 part-time jobs in 2012, for a total of 1,102 full time and 220 part time positions. While this is relatively modest job growth, when combined with an average full-time salary and payroll of over $76,000 and $84 million respectively, the total direct economic impact of these companies is significant. Add in the fact that QNBV companies have an average of less than seven full-time employees, and it becomes clear that these companies have substantial room for growth and the potential for tremendous economic impact.

The certified businesses provide annual reports with information on jobs and average wages to WEDC. Companies that no longer are in the program do not report job and salary information to WEDC, so the overall job creation impact of the QNBV Program is well beyond what is reported by companies still in the program.

1,102 2012 FULL-TIME POSITIONS

Full-time positions based in Wisconsin as of the end of 2012. See table 2 (page 11), for more detail.

$76,581 AVERAGE SALARY

Average salary for full-time positions reported by the certified companies in 2012. See table 2 (page 11), for more detail.

$84.4M ANNUAL PAYROLL

Estimated total annual payroll for full-time positions employed by certified companies in 2012.

QNBV SUCCESS IN WISCONSIN

Embedtek, located in Hartland, was formed in 2002. The company designs and manufactures embedded computers and integrated display solutions for original equipment manufacturers.

> "We're not only winning business ... but we're bringing business to Wisconsin by sourcing many components locally."
>
> — Tom Fotsch, COO
> Embedtek

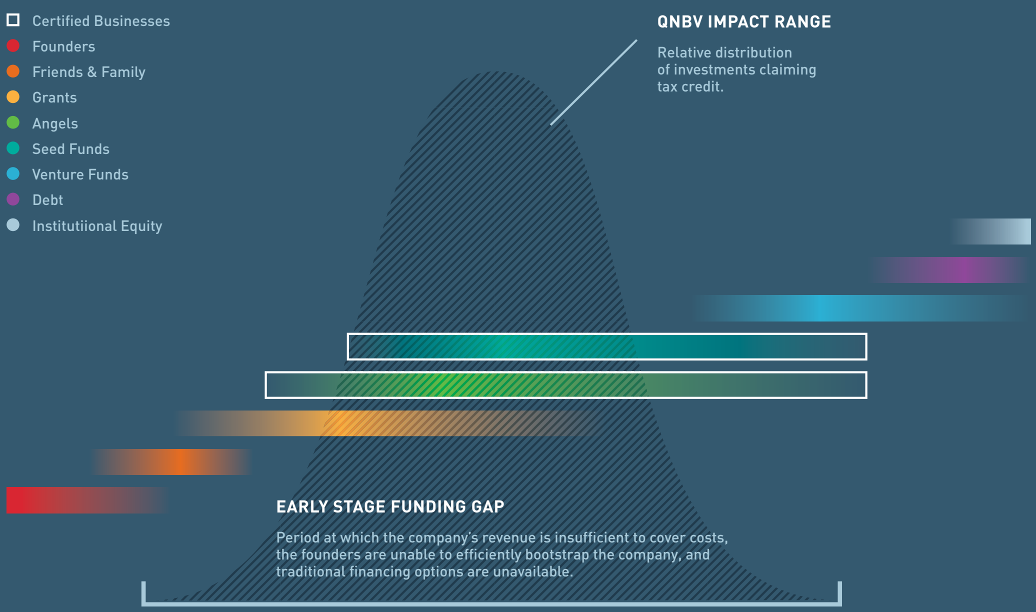
Some of Embedtek's applications include medical equipment, military vehicle simulators, fitness displays and portable AV recorders. The company grew from 23 to 36 full time employees in 2012 and expects its workforce to exceed 50 by the end of 2013. Embedtek had nine employees at the beginning of 2010, the year it obtained QNBV status.

"We're not only winning business, which has been responsible for our recent growth in production and our workforce, but we're bringing business to Wisconsin by sourcing many components locally. This wouldn't have happened if we hadn't been able to expand. Whenever you make an investment to grow a business, you are taking a big risk in building production capacity and a workforce. The QNBV program helped mitigate that risk," said Tom Fotsch, chief operating officer of Embedtek.

FUNDING TIMELINE FOR EMERGING TECHNOLOGY COMPANIES

EFFECTS OF THE QNBV PROGRAM

The QNBV program is designed to target companies at the earliest stages of development, helping to attract angel and seed venture funding. Companies use the program starting late in the conceptualization stage through the early growth stages. However, the program has the most impact in fund-raising during the validation stage, where the investment risk is still very high and the funding needed is significantly more than typical founders or their friends and family can support.



CONCEPTUALIZATION

Company founders develop an idea for a product or service, refine the idea and complete initial prototyping. Actual company formation is not a requirement at this stage.

VALIDATION

The company continues technology development activities including further refinement and testing. The company also starts conducting business development activities such as seeking early market validation and gathering market feedback on its new products or services.

COMMERCIALIZATION

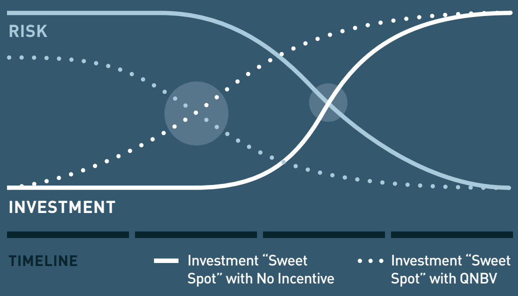
The goal in this stage is to go to market with the company's initial products or services. Activities typically include commercialization planning, production model development, marketing, and new product or service rollout.

GROWTH

Growth after initial commercialization often requires rapid and repeated expansion. However, companies may not yet be profitable or may have insufficient history to support traditional financing.

QNBV MITIGATES INVESTMENT RISK FOR EARLY-STAGE COMPANIES

Any high growth startup faces significant risk, especially in the early stages when funding is the most precarious. As a company secures adequate investment, through any of the various sources, its risk begins to decline, because it has the cash to continue to advance its concept into the market. The QNBV Program helps reduce the risk by providing an incentive for investment earlier in the funding life of a company.



QNBV PROGRAM TRENDS

QNBV PROGRAM IMPACT

Biotechnology companies have lead Wisconsin industry sectors represented in the QNBV Program since 2005.

In the last few years the information technology industry has grown to the same level or slightly above the biotechnology industry in the total amount of qualified investments received on an annual basis. In addition, the number of new businesses certified has declined over time for the biotechnology industry, while there has been recent growth in the number of new information technology businesses certified.

These industries represent over 60 percent of the qualified investment activity and 55 percent of the total businesses certified. The growth potential within these industries underscores the importance of the QNBV Program in helping these companies continue to attract the capital needed to complete development and launch products.

COMPARISON AS OF 2012

BIOTECHNOLOGY

41 QNBV CERTIFIED COMPANIES

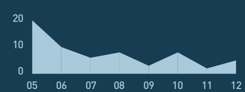
26% OF PORTFOLIO

Of the 160 companies within the QNBV portfolio, 41 were biotechnology companies.

5 NEWLY CERTIFIED BIOTECHNOLOGY COMPANIES

11% CERTIFIED

Of the 44 new companies certified in 2012, 5 were biotechnology companies.



NEW BIOTECH BUSINESSES CERTIFIED TREND

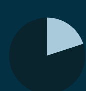
Number of new biotechnology businesses certified each year.

13 BUSINESSES RECEIVED QUALIFIED INVESTMENT

32% CERTIFIED

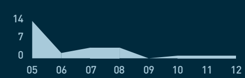
13 of the 41 certified biotechnology businesses received qualified investments.

1 2012 CERTIFIED COMPANY RECEIVED CREDIT



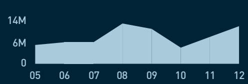
20% AWARDED

One of the 5 new businesses certified in 2012 received QNBV tax credits.



NEW BIOTECH BUSINESSES RECEIVING CREDIT TREND

The number of new biotechnology businesses certified that have been successful in attracting qualified investment in the year they were certified.

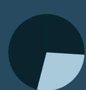


$80.5M TOTAL RECEIVED

Investments that qualified for tax credits for biotechnology companies.

INFORMATION TECH

45 QNBV CERTIFIED COMPANIES



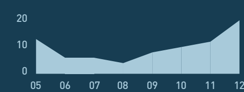
28% OF PORTFOLIO

Of the 160 companies within the QNBV portfolio, 45 were information technology companies.

20 NEWLY CERTIFIED INFORMATION TECH COMPANIES

45% CERTIFIED

Of the 44 new companies certified in 2012, 20 were information technology companies.



NEW INFO TECH BUSINESSES CERTIFIED TREND

Number of new information technology businesses certified each year.

21 BUSINESSES RECEIVED QUALIFIED INVESTMENT

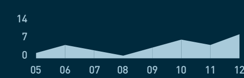
47% CERTIFIED

21 of the 45 certified information technology businesses received qualified investments.

9 2012 CERTIFIED COMPANY RECEIVED CREDIT

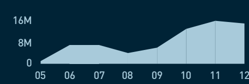
45% AWARDED

Nine of the 20 new businesses certified in 2012 received QNBV tax credits.



NEW INFO TECH BUSINESSES RECEIVING CREDIT TREND

The number of new information technology businesses certified that have been successful in attracting qualified investment in the year they were certified.



$72.1M TOTAL RECEIVED

Investments that qualified for tax credits for information technology companies.

ABOUT THE PROGRAM

SUPPORTING INVESTMENT IN WISCONSIN COMPANIES

Wisconsin's Qualified New Business Venture Program (QNBV) works to spur investment in early-stage Wisconsin businesses with the potential for significant economic impact and job growth. The program is as simple as it is effective, creating mutually beneficial outcomes for investors, businesses and Wisconsin's economy.

HOW IT WORKS

Early-stage businesses developing innovative products, processes or services may be designated as QNBVs. Investments in QNBVs made by angel investors, angel investment networks and qualified venture capital funds are eligible to receive a tax credit equal to 25 percent of the amount of equity investment.

QNBV CERTIFICATION REQUIREMENTS

To achieve QNBV certification, companies must meet the following criteria:

- Headquartered in Wisconsin
- At least 51 percent of employees based in the state
- Have fewer than 100 employees
- In operation for 10 consecutive years or less
- Offer significant potential for increasing jobs or increasing capital investment in Wisconsin
- Have not received aggregate private equity investment in cash of more than $10 million

With a focus on technological advancements, QNBV certification does not apply to companies primarily engaged in real estate development, insurance, banking, lending, lobbying, political consulting, professional services, wholesale or retail trade, leisure, hospitality, transportation, or construction (except the construction of power production plants that derive energy from a renewable resource).

CLAIMING EARLY STAGE BUSINESS INVESTMENT CREDITS*

Businesses can receive up to a total of $8 million in tax-eligible cash equity investment (for up to $2 million in tax credits for the investors).There is no limit on the amount of credits investors can claim.

- A business must be certified as a QNBV by WEDC prior to the initial investment in order to be eligible for investment tax credits
- A venture fund must be certified as a Qualified Venture Fund (QVF) by WEDC prior to the initial investment in order to be eligible for investment tax credits**
- Angel investors are required to be accredited/sophisticated investors and must submit documentation to WEDC following the investment
- The investment is considered complete upon deposit of the cash investment into the QNBV

Investments must be:

- Clearly identifiable as being cash investments
- In the form of common stock, preferred stock, partnership or membership interest, or equivalent ownership interest. Cash exchanged for debt is not eligible unless the debt is later converted into equivalent ownership interest
- Investments made by QVF, with principal offices based outside of this state, must be made side by side with equity investors based in Wisconsin with a minimum participation by state investors as determined by WEDC

The following will not qualify for tax credits:

- 401(k), IRA, Roth IRA or similar tax deferred or tax advantaged accounts are not eligible investment vehicles for the Angel tax credit programs
- Investor cannot control or cannot be closely related (spouse, grandparent, parent, sibling, child, stepchild, grandchild) to someone who controls more than 20 percent of the ownership interest in the company at the time of the investment
- Corporations, operating business entities, non-profit companies or foundations will not qualify under the Angel tax credit but may be eligible if investments are made in a QVF

TAKING ADVANTAGE OF WISCONSIN'S EARLY STAGE BUSINESS INVESTMENT AND QNBV PROGRAMS

For more information about investment opportunities available through the Early Stage Business Investment Program or achieving QNBV certification, contact a Wisconsin Economic Development Corporation (WEDC) Technology Investment Manager:

Chris Schiffner
Technology Investment Manager, WEDC
Division of Entrepreneurship and Innovation
(608) 210-6826
chris.schiffner@wedc.org

Aaron Haggar
Technology Investment Manager, WEDC
Division of Entrepreneurship and Innovation
(608) 210-6825
aaron.hagar@wedc.org

For QNBV certification, you should be prepared to submit an up-to-date business plan or executive summary. The initial review of your QNBV application will take four to six weeks.

* The Wisconsin Economic Development Corporation (WEDC) does not endorse the quality of management or the potential for earnings for the certified Qualified New Business Venture. Furthermore, the Qualified New Business Venture's use of the phrase "certified" and/or "qualified new business venture" is not a recommendation or endorsement of the investment or the company by WEDC.

** Certification of a fund by the WEDC is not an endorsement of the quality of management of that fund. The WEDC is not liable for damages or losses to an investor.

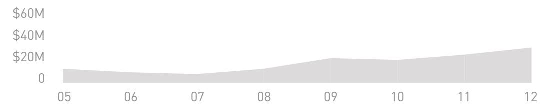
DIAGRAM 1

Annual Results by Investment Type

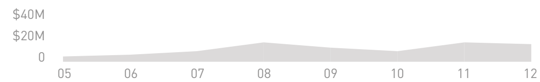
Qualified angel investments have grown steadily since 2007, while qualifying venture capital investments have remained relatively flat. Other financing including investments that do not qualify for credits such as out of state equity, debt and founder's investments have grown since 2005. Please note that the spike in 2010 is primarily due to two companies whose financing amounts represent nearly half of the total other financing for that year. Grants were not tracked separately early in the program. In the last three years federal and other grants have grown to represent nearly twenty percent of the total funding received by qualified companies.

$916.1M TOTAL INVESTMENTS

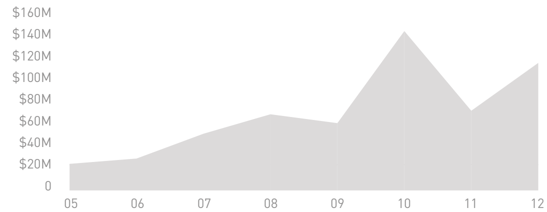
ANGEL INVESTMENTS



VENTURE CAPITAL FUND INVESTMENTS



OTHER FINANCING



GRANTS

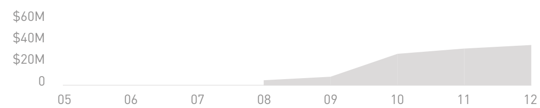


TABLE 1

Annual Results

Source: Reporting from QNBV Certified Companies

	ANGEL	VC FUND	TOTAL CREDITS	OTHER FINANCING	GRANTS	TOTAL
2012	32,214,915	16,229,991	12,111,227	116,254,652	37,177,266	201,876,824
2011	26,802,916	18,486,944	11,322,465	72,498,556	33,155,828	150,944,244
2010	20,160,566	10,267,268	7,606,959	144,561,009	29,400,466	204,389,309
2009	22,116,868	12,902,148	8,754,754	61,487,213	8,141,039	104,647,268
2008	12,423,716	17,137,844	7,390,390	68,116,873	5,358,571	103,037,004
2007	8,201,848	10,400,808	4,650,664	51,573,820	N/A	70,176,476
2006	9,672,712	5,693,752	3,841,616	28,933,536	N/A	44,300,000
2005	11,959,056	501,284	3,115,085	24,339,660	N/A	36,800,000
Total	143,552,597	91,620,039	58,793,160	567,765,319	113,233,170	916,171,125

DIAGRAM 2

Average Employee Base of Certified Companies

Certified companies on average employ 9.2 positions per company. This is up from 6.1 positions per company in 2007.

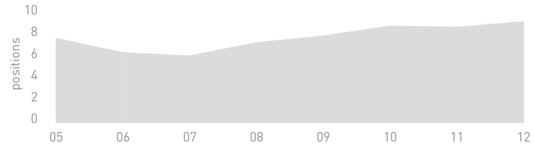


DIAGRAM 3

Average Salary Base of Certified Companies

Average salaries of certified companies have consistently remained well above median household incomes for the state of Wisconsin. These companies help the state attract and retain highly-educated, trained and talented individuals.

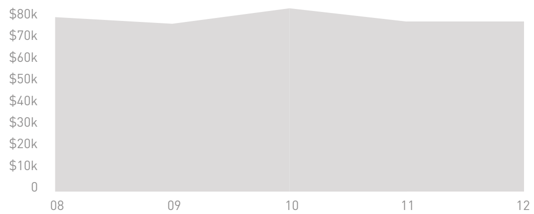


TABLE 2

Annual Employment and Wages

Source: Reporting from QNBV Certified Companies

	CERTIFIED COMPANIES	NET NEW WI JOBS	WI FULL-TIME JOBS	WI PART-TIME JOBS	TOTAL JOBS	AVERAGE SALARY
2012	160	210	1,102	220	1,476	76,581
2011	138	207	934	181	1,206	76,564
2010	125	N/A	N/A	N/A	1,107	83,346
2009	106	N/A	N/A	N/A	846	76,627
2008	89	N/A	N/A	N/A	655	78,582
2007	76	N/A	N/A	N/A	461	N/A
2006	60	N/A	N/A	N/A	384	N/A
2005	44	N/A	N/A	N/A	339	N/A

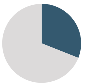
DIAGRAM 4

2012 Qualified Investments by Industry

Qualified investments represent the amount of investments that are eligible for tax credits.

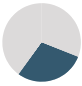
$48.4M TOTAL QUALIFIED INVESTMENTS

$15.2M INVESTED IN INFORMATION TECHNOLOGY



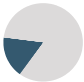
31% CERTIFIED

$14.1M INVESTED IN BIOTECHNOLOGY



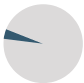
29% CERTIFIED

$7.9M INVESTED IN HEALTHCARE TECHNOLOGY



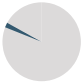
17% CERTIFIED

$1.9M INVESTED IN NANOTECHNOLOGY



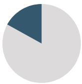
4% CERTIFIED

$1M INVESTED IN ENERGY



2% CERTIFIED

$8.3M INVESTED IN OTHER



17% CERTIFIED

TABLE 3

2012 Qualified Investments

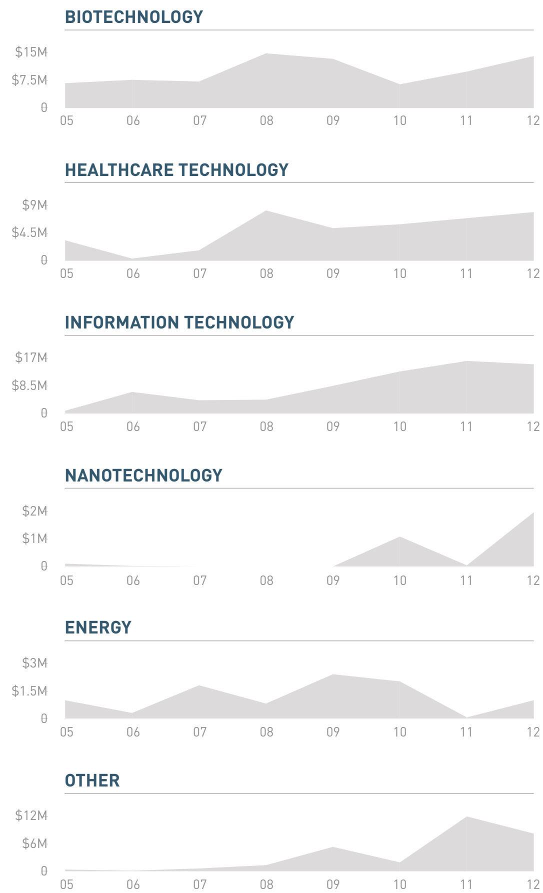
Source: Reporting from QNBV Certified Companies

TYPE OF INDUSTRY	TOTAL PARTICIPATING BUSINESSES	TOTAL BUSINESSES THAT RECEIVED CREDITS	QUALIFIED INVESTMENT	OTHER FINANCING	GRANTS
Biotech	41	13	14,124,638	36,118,731	17,083,698
Health Technology	29	15	7,907,684	19,975,707	1,145,229
Information Technology	45	21	15,174,447	32,601,819	1,096,853
Nanotechnology	4	3	1,954,998	194,000	100,000
Energy	7	1	1,000,000	17,484,078	5,065,000
Other	34	10	8,283,139	9,880,317	12,626,486
Total	160	63	48,444,906	116,254,652	37,117,266

DIAGRAM 5

Annual Qualified Investments by Industry

In 2012 Biotechnology and Healthcare technologies returned to funding levels previously seen in 2008 and 2009. IT and Other products appear to be on the up swing in 2012, being at or near the highest activity levels since the program's inception. Energy was coming off a low point in activity in both number of certified companies and investments. Nanotechnology certifications and funding were more active in 2012 than at any other point.



$235.2M TOTAL QUALIFIED INVESTMENTS

TABLE 4

Annual Qualified Investments

Source: Reporting from QNBV Certified Companies

	BIOTECH	HEALTH TECH	INFO TECH	NANOTECH	ENERGY	OTHER	TOTAL
2012	14,124,638	7,907,684	15,174,447	1,954,998	1,000,000	8,283,139	48,444,906
2011	9,981,389	6,953,353	16,261,914	45,000	66,900	11,981,308	45,289,864
2010	6,434,855	5,926,707	12,975,731	1,080,000	2,064,502	1,946,030	30,427,825
2009	13,311,025	5,347,361	8,562,056	0	2,412,772	5,385,800	35,019,014
2008	14,915,461	8,206,001	4,264,903	0	820,200	1,355,000	29,561,565
2007	7,260,451	1,741,000	7,188,012	0	1,838,200	575,000	18,602,663
2006	7,604,047	473,699	6,775,219	5,004	338,500	170,000	15,366,469
2005	6,825,504	3,350,552	874,094	105,000	999,998	305,194	12,460,342
Total	80,457,370	39,906,357	72,076,376	3,190,002	9,541,072	30,001,471	235,172,648

TABLE 5

Angel Tax Credit

This table represents the total amount of Angel tax credits available to the program in each year less the actual credits issued. In 2009 and 2010 unallocated credits were transferred to the Jobs Tax Credit Program. The remaining balance of credits available is then rolled into the next year' s available credit limit. In 2012 there were $28 million in unallocated credits that will be added to the 2013 credit allocation for a total of over $48 million in credits available for 2013. (Source: Reporting from QNBV Certified Companies)

	INITIAL CREDITS	PREV YEAR ROLLOVER	TOTAL AVAILABLE	CREDITS VERIFIED	BALANCE AVAILABLE	ALLOCATED TO JTC	AVAILABLE ROLLOVER
2012	20,000,000	16,373,967	36,373,967	8,053,729	28,320,238	0	28,320,238
2011	20,000,000	3,074,696	23,074,696	6,700,729	16,373,967	0	16,373,967
2010	6,500,000	2,997,479	9,497,479	5,032,178	4,465,301	1,390,605	3,074,696
2009	5,500,000	3,343,609	8,843,609	5,529,217	3,314,392	316,913	2,997,479
2008	5,500,000	949,538	6,449,538	3,105,929	3,343,609	0	3,343,609
2007	3,000,000	0	3,000,000	2,050,462	949,538	0	949,538
2006	3,000,000	0	3,000,000	2,418,178	581,822	0	0
2005	3,000,000	0	3,000,000	2,989,764	10,236	0	0

TABLE 6

Early Stage Seed Credit (Venture Fund Credit)

This table represents the total amount of Early Stage Seed tax credits available to the program in each year less the actual credits issued. In 2009, 2010, and 2011 unallocated credits were transferred to the Jobs Tax Credit Program. The remaining balance of credits available is then rolled into the next year's available credit limit. In 2012 there were $28 million in unallocated credits that will be added to the 2013 credit allocation for a total of over $48 million in credits available for 2013. (Source: Reporting from QNBV Certified Companies)

	INITIAL CREDITS	PREV YEAR ROLLOVER	TOTAL AVAILABLE	CREDITS VERIFIED	BALANCE AVAILABLE	ALLOCATED TO JTC	AVAILABLE ROLLOVER
2012	20,500,000	11,481,201	31,981,201	4,057,498	27,923,703	0	27,923,703
2011	20,500,000	2,602,937	23,102,937	4,621,736	18,481,201	7,000,000	11,481,201
2010	8,000,000	2,615,337	10,615,337	2,566,817	8,048,520	5,445,583	2,602,937
2009	6,000,000	2,615,337	8,615,337	3,225,537	5,389,800	2,774,463	2,615,337
2008	6,000,000	899,798	6,899,798	4,284,461	2,615,337	0	2,615,337
2007	3,500,000	0	3,500,000	2,600,202	899,798	0	899,798
2006	3,500,000	0	3,500,000	1,423,438	2,076,562	0	0
2005	3,500,000	0	3,500,000	125,321	3,374,679	0	0

NZ's Angel Investment Market - Overview

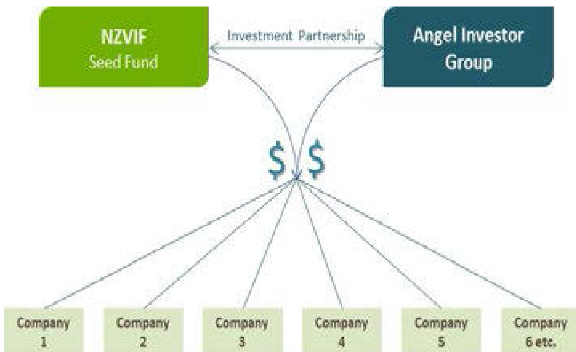
Public Policy Forum on Venture Capital and Innovation
3 - 4 December 2013

NZVIF Funds

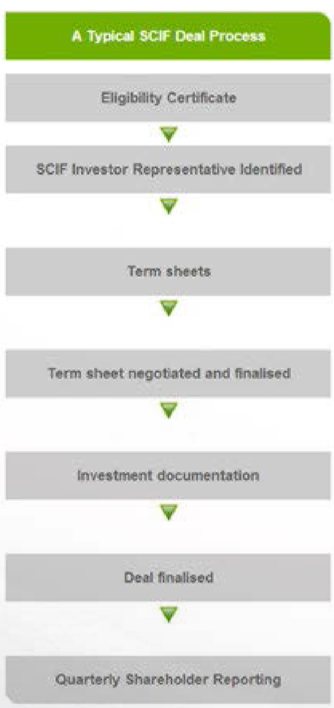
- NZVIF currently has $300 million of funds under management. It is invested through two vehicles:
  - $260 million Venture Capital Fund of Funds. NZVIF invests indirectly through privately managed venture capital funds (managed by pre-qualified venture capital and private equity fund managers).
  - **$40 million Seed Co-investment Fund. NZVIF invests directly into portfolio companies (alongside pre-qualified private Angel investment partners).**

Seed Co-investment Fund

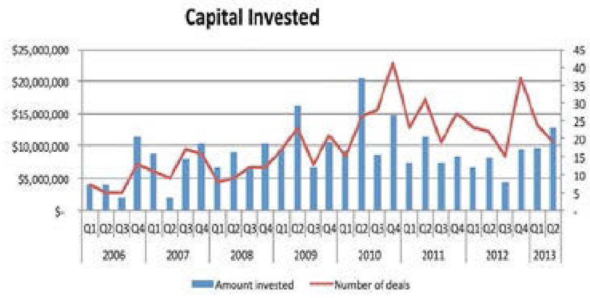
- $40m co-investment fund investing since 2007
- Invests alongside approved private investors/partners on a 1:1 basis
- Eligibility
  - NZ Based companies – technology and innovation
  - Excluded industries: Property, financial services, mining, retail
  - Maximum of NZ$250,000 initially and NZ$750,000 in total in any one company



The Co-investment process



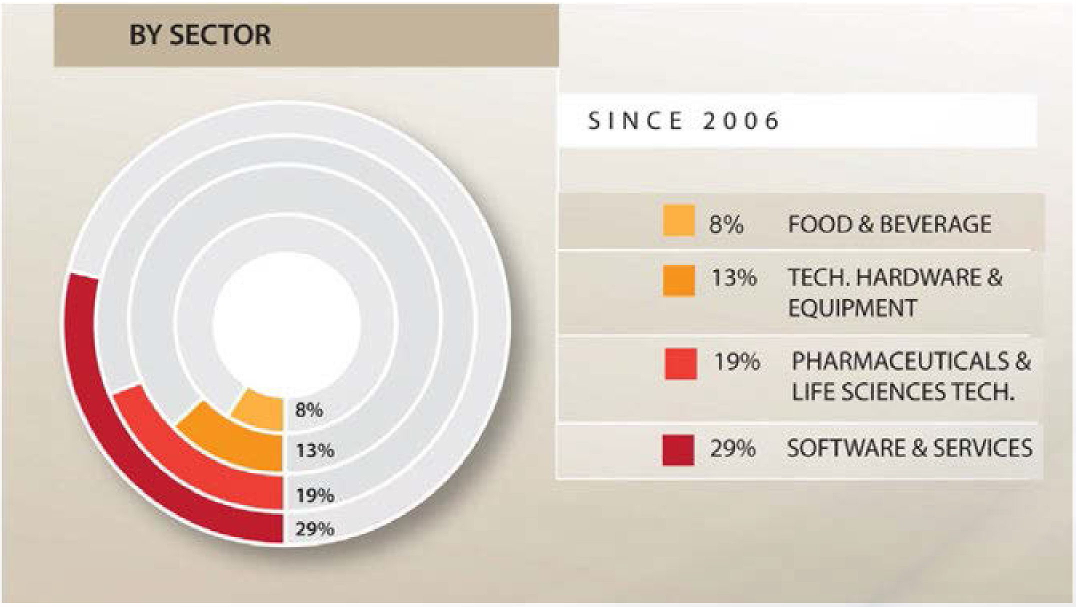
- 13 investment partners
  - Angel networks
  - Angel funds
- 110 portfolio companies
- NZ$27m invested
- NZ$130m committed (private and NZVIF)
- Targeting approximately 120 – 130 portfolio companies in total
- US angel Bill Payne compares NZ's angel sector (size and activity) to that of Boston (both have equivalent populations)



Seed Fund Impact	Pre-SCIF	2013
Angel groups/networks	<5	15-20
Number of active angels	<100	500
Annual investment	<$20m	$40-50m

What are they investing in?

NEW ZEALAND venture INVESTMENT FUND LIMITED



Seed Co-investment Partners

What do the deals look like?

- High rates of syndication between NZ Angel groups (70%)
- Pre-money company valuations from NZ$100k - $2.0m (US: $80k-1.6m)
- Average investment size NZ$300k (US$250k)
- Most investment is tranched (Linked to agreed milestones)
- 27% Convertible Loans, 46% Ord Shares, 27% Pref Shares
- 3 – 5 months to complete the deal on average
- > 95% of companies will require follow-on funding
- Use common “industry” investment documentation
- Some successful “Exits”

100+ portfolio companies

Healthcare/biotech

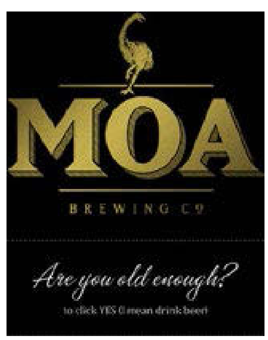
ICT

Beautiful accounting software

LearnKo

Food and Beverage

BioVittoria



biolumic
harvesting light

Technology

Key current trends

- Increased diversity of Angel capital sources
  - Crowdfunding **(Kickstarter, Snowball Effect)**
  - Specialist Angel Funds
  - Super Angels
  - Public Listing **(IPO)**
  - Investment incubators
  - Aqui-hires **(Xero)**
- Ongoing evolution of investment terms
- Increasing focus on ‘exit’ strategies

Information and Resources

NZVIF Early Stage Company Valuation Report – Dec 2012

- Covers > 300 company funding rounds

Young Company Finance Index (YCF)

- Twice yearly report providing news, comment and analysis on the Angel investment market in NZ. Data gathered since 2006. World class database.

Seed and Early-Stage Investment Standard Documentation

Available at: www.nzvif.co.nz

YOUNG COMPANY FINANCE

News, comment and analysis on the young company market in NZ

ISSUE 15
September 2013

IN THIS ISSUE

ANGEL PROFILE
SAM KNOWLES

YCF NEW COMPANIES

2013 ANGEL SUMMIT

SUBSCRIBE OR COMMENT

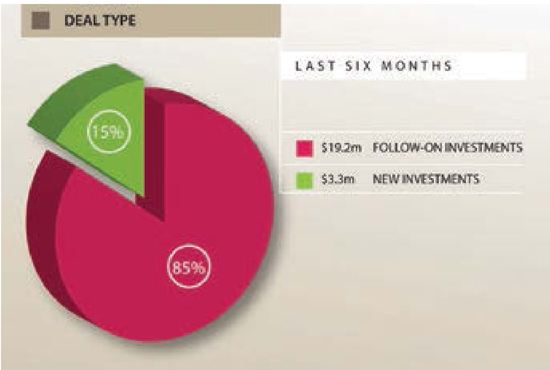
Email: ycf@nzvif.co.nz

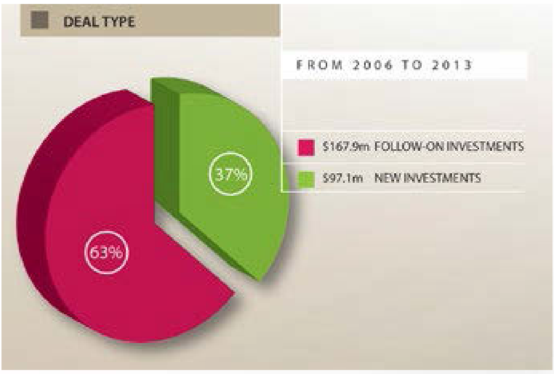
Angels bounce back

Angel investment bounced back in the first 6 months of the year with investment up 50 percent compared to the first half of 2012, according to the Young Company Finance Index.

Angels invested $22.5 million across 43 deals involving young New Zealand companies in the first half of 2013. In the first six months of 2012, $15 million was invested across 45 deals.

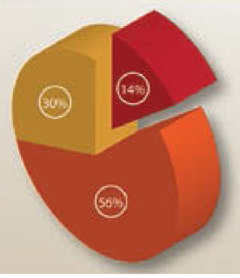
In the 12 months to 30 June 2013, $36.5 million was invested into young companies, up 18 percent on the year to 30 June 2012 when $30.9 million was invested. Cumulatively, $265.1 million has now been invested into young companies by angels since the Young Company Finance Index began measuring activity in 2006.





YOUNG COMPANY FINANCE

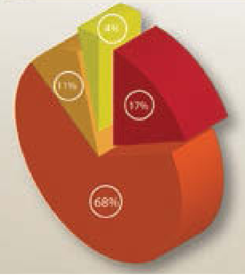
DEAL STAGE



LAST SIX MONTHS

$3.1m	SEED
$12.7m	START-UP
$6.7m	EARLY EXPANSION
$0	EXPANSION

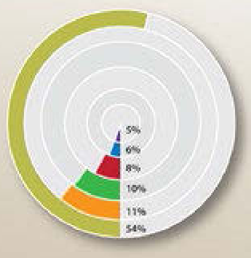
DEAL STAGE



FROM 2006 TO 2013

$44.8m	SEED
$179.9m	START-UP
$28.7m	EARLY EXPANSION
$11.7m	EXPANSION

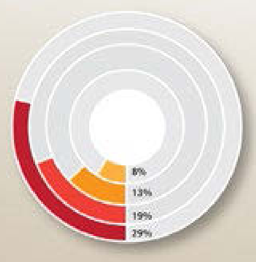
BY REGION



SINCE 2006

54%	AUCKLAND
11%	CHRISTCHURCH
10%	WELLINGTON
8%	DUNEDIN
6%	PALMERSTON NORTH
5%	HAMILTON

BY SECTOR



SINCE 2006

29%	SOFTWARE & SERVICES
19%	PHARMACEUTICALS & LIFE SCIENCES TECH.
13%	TECH. HARDWARE & EQUIPMENT
9%	FOOD & BEVERAGE

INVESTMENTS

CAPITAL INVESTED 1st HALF

1H2006	$7,981,667
1H2007	$10,893,890
1H2008	$15,685,334
1H2009	$25,703,348
1H2010	$29,720,027
1H2011	$18,727,776
1H2012	$15,055,619
1H2013	$22,542,626

INVESTMENTS

CAPITAL INVESTED-YEAR TO 30 JUNE

2006/07	$24,279,188
2007/08	$33,929,792
2008/09	$42,587,417
2009/10	$45,955,259
2010/11	$42,017,611
2011/12	$30,853,620
2012/13	$36,452,466

2

NZVCA | NEW ZEALAND venture INVESTMENT FUND LIMITED | ANGEL ASSOCIATION NEW ZEALAND

YOUNG COMPANY FINANCE

The first half of 2013 saw 79 percent of deals syndicated between different angel groups – the highest level recorded - with 21 percent of deals not syndicated. Thirty percent of investments were convertible loans, 49 percent were ordinary shares, and 21 percent were preference shares.

Franceska Banga

NZVIF CEO

Angel investment has bounced back well from low levels which is positive and will hopefully continue. This is good news for the growth company pipeline. What we are also seeing is the sector maturing and becoming more professional in the way in which angel investors are operating.

Investors are showing strong support for existing companies which can demonstrate good progress. Of the $22.5 million invested in the last six months, 85 percent – or $19.2m - was follow-on investment. While new investments are relatively low, we expect this will pick up as more active angel investors are recruited by networks – something we are working with the Angel Association NZ to support.

Ray Thomson

Angel Association NZ Chair

It is pleasing to see improving levels of investment in angel ventures. There is a real sense of building momentum and interest in the high growth opportunities available to angels. Growing levels of membership in angel networks should see improvements in both the quantum of funding but also the numbers of angel deals receiving funding next year. The increasing interest in the innovation sector is reflected by much greater media coverage this year and increased government interest reflected by the formation of Callaghan Innovation. These are all helping to build a positive investment climate.

The higher proportion of funding going into follow-on rounds should be seen in a positive light. Astute investors are only pouring more money in when ventures are meeting sales and revenue targets. It is also pleasing to see the levels of syndication growing. The collaboration reflected in 4 of every 5 deals receiving money from other networks and funds shows that investors are working together. It bodes well for success as these ventures are exposed to wider networks of skills and connections to markets.

3

NZVCA | New Zealand venture Investment Fund Limited | Angel Association New Zealand

ANGEL PROFILE

The lure of angel investing

by Lesley Springall

***Sam Knowles** is best known for his role as CEO of Kiwibank. In 10 years, under his guidance, Kiwibank went from start-up to 700,000 customers, 1000 employees and more than $20 billion under management. Since leaving the bank in September 2010, Sam's been linked with a host of companies: some big like Trustpower; some growing like Xero and dairy processing company Synlait; and some just starting out, through his involvement with Wellington-based angel investment network, Angel HQ. Sam took time out to tell us why he decided to become an angel investor...*

The reality is I've always been a bit of an angel if you mean making private investments in risky ventures. But I formally got involved in angel investment when I helped set up Angel HQ about 7 years ago.

What attracts you to angel investment?

It's not so much the returns, but the wider societal outcomes of having a vibrant investment ecosystem. Angel investment is critical to the New Zealand economy. We just don't have enough new growth businesses coming through or growing fast enough.

It also infects your whole life if you're working with people who are enthusiastic and energised.

How many investments have you made over the years and how's it going?

Probably about 20. But a lot are just friends and family. I've made seven formal angel investments, but I've made a lot of investments in bigger, growth companies as well. The bigger ones are going exceptionally well, a couple of the smaller ones have fallen off the wagon, as you'd expect, but there are another couple which are looking very promising. But it's still early days.

It's really about the totality of your portfolio. For people who are competitive, and enjoy risk taking, angel investment is a great thing to do.

How much time do you spend being an angel?

I don't really differentiate my angel from my next stage growth investments. I work with one mature company, Trustpower; all the rest are growth companies. Xero may employ 500 people, but it's still facing all the growth challenges of new markets.

If you're actively involved in governance, probably about six to eight companies is the maximum. But you can still actively help people on the sidelines. There are a number of people I have coffee with every month to give them some advice. And that's also great for growing your own capabilities; to be talking to people about different problems and how they might solve them.

Is there anything that New Zealand could be doing better to support more angel investment?

We don't celebrate angel investing or risk taking nearly enough. If we want to have a first world society, we've got to have more economic growth and it's got to be high value growth – and that involves structured risk taking. Yet we're becoming more risk averse as a society.

Our universities are also not aligned to our commercialisation needs. No university in New Zealand teaches sales. Yet for every start-up, sales is the difference between success and failure.

We also need to change our legislation to make it far easier to give people equity in lieu of remuneration. We're never going to be anything like Silicon Valley if we don't give enough upside to our best and our brightest. The basis of all success in entrepreneurial societies is the ability to share.

Any tips for budding angels?

Understanding what makes success. Be really clear what the problem is you're solving and make sure you've really thought through how you're going to get scalable growth and you've got the beginning of a great team. If you haven't got someone who knows how to commercialise products and sell them, it can be a pretty difficult problem to overcome.

5

NZVCA

New Zealand venture Investment Fund Limited

ANGEL ASSOCIATION NEW ZEALAND

Participants List

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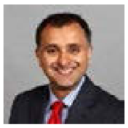

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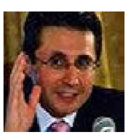

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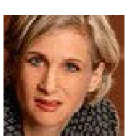

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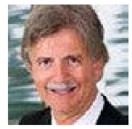

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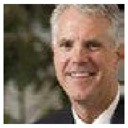

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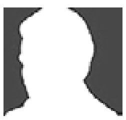

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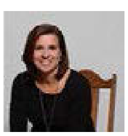

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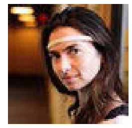

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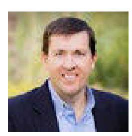

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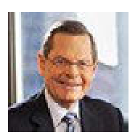

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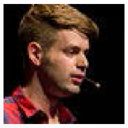
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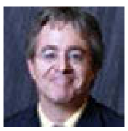

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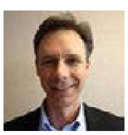

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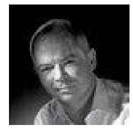

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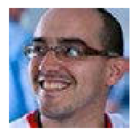

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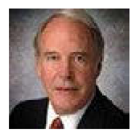

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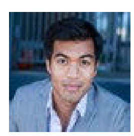

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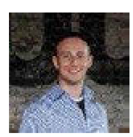

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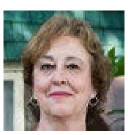

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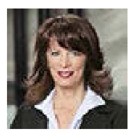

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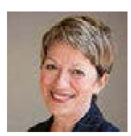

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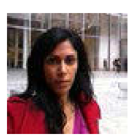

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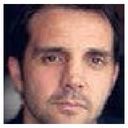

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Xanthoudakis, Steve
Director, Licensing and External
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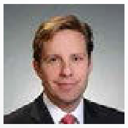

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