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Collaborative innovation:

Creating opportunities in a changing world

prof.dr.ir. Vareska van de Vrande





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Library of Congress Classification (LCC)

http://lcweb.loc.gov/catdir/cpso/lcco/

lcco_h.pdf

HF 5001-6182 Mission: HD 30.28 Programme:

Paper: HF5549.5.T33

Journal of Economic Literature (JEL)

http://www.aeaweb.org/journal/jel_class_

system.html

Mission:

D 21, L 20 Programme: Paper: O31

Classification GOO

Mission: 85.00 Programme: 85.10

Paper: 85.15

Keywords GOO

Mission: Bedrijfskunde /

Bedrijfseconomie

Programme: Strategisch

management,

organisatievernieuwing

Paper: Technologisiche

> Innovatie. samenwerken. concurrentie

FREE Keywords

Entrepreneurship Corporate venturing

Corporate venture capital

Collaboration Innovation Coworking Start-ups

Erasmus Research Institute of Management - ERIM

The joint research institute of the Rotterdam School of Management (RSM) and the Erasmus School of Economics (ESE) at the Erasmus Universiteit Rotterdam Internet: www.erim.eur.nl

ERIM Electronic Series Portal

http://hdl.handle.net/1765/1

Inaugural Addresses Research in Management Series

Reference number EIA-2017-071-S&E ISBN 978-90-5892-486-5 © 2017, prof.dr.ir. Vareska van de Vrande

Layout

www.panart.nl

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Collaborative innovation:

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prof.dr.ir. Vareska van de Vrande

Address delivered in shortened form on the occasion of accepting the appointment of Professor of Collaborative Innovation and Business Venturing at the Rotterdam School of Management, Erasmus University on Friday, June 2, 2017.

Rede in verkorte vorm uitgesproken op 2 juni 2017 bij het aanvaarden van de bijzondere leerstoel hoogleraar in Professor of Collaborative Innovation and Business Venturing ingesteld door het Erasmus Trustfonds aan de Rotterdam School of Management, Erasmus University.

Rotterdam School of Management Erasmus University Rotterdam P.O. Box 1738 3000 DR Rotterdam

E-mail: vvrande@rsm.nl



Samenvatting

De omgeving waarin bedrijven vandaag de dag opereren wordt gekenmerkt door snelle en veelvuldige veranderingen, die vaak lastig te voorspellen zijn. Als gevolg hiervan dienen bedrijven continu te investeren in de ontwikkeling van nieuwe producten en diensten om concurrerend te kunnen blijven. Vanwege de toenemende complexiteit van de omgeving schiet de interne ontwikkeling echter vaak tekort en wordt samenwerking steeds belangrijker. Er zijn drie gebieden die onze aandacht verdienen. Ten eerste, de interesse onder werknemers en organisaties om ondernemende initiatieven te ontplooien, roept vragen op rondom het management en de organisatiestructuren die nodig zijn om deze initiatieven te ondersteunen, en de manier waarop intern ondernemerschap het beste ingericht kan worden. The tweede, het toenemende aantal startups brengt mogelijkheden met zich mee voor bestaande organisaties om toegang te krijgen tot opkomende technologieën door middel van samenwerking met startups. The derde, de veranderende manier van werken biedt kans aan bestaande organisaties om de relaties met hun medewerkers te heroverwegen en een manier te vinden om slim gebruik te kunnen maken van de flexibiliteit van hun eigen medewerkers en de medewerkers van anderen. Ik zal een aantal onderzoeksvragen benoemen en de richtingen voor verder onderzoek in dit gebied uiteenzetten.

Abstract (English)

Today's business environment is characterised by fast and frequent change, which is often difficult to predict. As a consequence, companies need to continuously invest in the development of new business to remain competitive. However, due to the increasing complexity of the environment, internal development is often not enough, and collaborative innovation is becoming more important. There are three areas that warrant our attention. First, interest among employees and organisations to pursue entrepreneurial initiatives raises questions around the management and support that is needed to foster these initiatives and how to best organise internal corporate venturing. Second, the increasing number of start-ups provides opportunities for existing companies to tap into emerging technologies and business areas through corporate – start-up collaboration. Third, the changing nature of work provides an opportunity for existing organisations to rethink the relationship they have with their employees and to find a way to benefit from the increased flexibility of their own and other's workers. I will raise a number of research questions in these areas and provide directions for future research in the field.

Table of contents

Same	nvatting	6
Abstra	act (English)	7
Table of contents		9
1.	Introduction	11
2.	A changing world	13
3.	Corporate innovation in a new era	15
4.	The future of collaborative innovation & business venturing	17
5.	Words of thanks	21
Refere	ences	23
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1. Introduction

Dear Rector Magnificus of Erasmus University,
Dear board members of the Vereniging Trustfonds,
Dear Dean of Rotterdam School of Management,
Dear family, friends, colleagues and students,
Dear distinguished guests.

"Goliaths are the new Davids." 1

There is no doubt that the world in which we live is rapidly changing. A recent report published by the World Economic Forum stated that we are at the beginning of the fourth industrial revolution (World Economic Forum, 2016). Technological progress, and in particular, developments in genetics, robotics, nanotechnology and artificial intelligence, has accelerated the pace of change of our world today. More importantly, perhaps, is the fact that these developments have created a business environment that is both uncertain and unpredictable, and where change and disruption may come unexpectedly.

In such turbulent environments, companies continuously need to invest in the development of new business to remain competitive. Traditionally, firms invested in the creation of new business in-house. In their large R&D labs, new inventions were made on an almost daily basis. For example, AT&T's Bell labs, the first large industrial R&D lab, discovered the transistor, the laser, and the Unix operating system. Xerox's Palo Alto Research Centre developed some of the well-known elements of the computer such as the mouse, the graphical user interface and the Ethernet protocol. Closer to home, Philips Natuurkundig Laboratorium (or NatLab) is where the pentode radio tube was invented, along with the rotary shaver and the compact disc. In the second half of the 20th century, large, industrial R&D labs thrived, and many great inventions as we know them today were developed in those labs.

However, in the late 20th century, changes in the business environment increasingly put pressure on the R&D activities of large, incumbent organizations. Customer demands changed more rapidly and more frequently, and product life cycles became shorter and shorter. This pressurised organizations to develop new products and services even more quickly than before. Moreover, trends in labour mobility started to play an important role.

In the past, people used to work for the same organization for almost their entire career. My father, who is here today, is a good example. After graduating from Eindhoven University of Technology, he worked for Philips until he retired a few years

1 Neil Gross, CEO of Chumhum in The Good Wife (Netflix, Season 7, Episode 14)

ago. Now, it is not so common to spend your entire career at the same organization. Driven by the desire for personal development, many employees leave the organization they work for in search of new challenges and opportunities. I am sure that many of you no longer work at the company where you started working when you graduated, and that at this very moment, some of you are thinking about which challenge to take on next.

These trends in labour mobility generate a greater dissemination of knowledge throughout industries and the world (Arrow, 1962), leading to the erosion of the competitive advantage of large companies with their internal R&D labs (Agarwal et al., 2009; Campbell et al., 2012). Moreover, many people choosing to leave the company they work for move to another company, possibly a competitor. But many others choose to create a new company or to become self-employed (Agarwal et al., 2007).

The development of Silicon Valley shows us why this trend is important: well-known semi-conductor companies such as Intel and AMD were founded by employees of Fairchild Semiconductor, which itself was founded by employees of Shockley Semiconductor, run by William Shockley, who was a physicist at Bell labs.

A more contemporary example is the evolution of the restaurant business in and around Copenhagen. I am sure many of you have heard of Noma, which has repeatedly been awarded the title "best restaurant" in the world. But how many of you have heard of Geranium, Relae, Bror, or Amass? All of them are award-winning restaurants in Copenhagen, mentioned in the Michelin guide 2, and founded by former Noma chefs.

2. A changing world

In the coming years, we will see an amplification of the trend described earlier. First of all, the nature of work is changing. People are taking more control over the way they work and are increasingly looking for flexibility. Flexibility in the way they work, the hours they work, the locations they work from, as well as flexibility in their careers. Second, there is a tremendous interest, both among young people and experienced employees, to engage in start-up activities. As a professor, I witness this trend from close by. When I asked my students 10 years ago about their career plans after graduation, eight out of ten expressed an interest in working for one of the big corporates in the Netherlands, like Shell, Unilever, and the like. Now, when I ask my students the same question, I get a variety of responses. It is not uncommon that at least one or two out of my 10 students are already running their own business, and if they aren't, they often say that they would like to start their own company and try that for a bit, or that they want to work for a start-up. Sometimes it doesn't even matter what kind of start-up, as long as they can be part of that environment.

This is also reflected in some of the recent developments we have seen here in the Netherlands when it comes to supporting start-up activities. Many universities now have a Centre for Entrepreneurship, providing diverse types of support to new, start-up companies. And the number of incubators and accelerators in the Netherlands has grown from 30 in 2005 to more than 60 today. In other words, start-ups are hot.

So why should we care about these developments? First, all these new start-ups further increase the dispersion of knowledge. Smart engineers used to work for either a university or for one of the major R&D labs. They can work anywhere now. Driven by advances in technology, the growth of the internet and the importance of web-based technologies and solutions, you don't need much to start a new firm these days. Well-known examples such as Airbnb and Uber have very few assets, yet they have brought about major disruptions in their respective industries.

Second, technological complexity is increasing exponentially, and new innovations often require the combination of different technologies. As a result, industry boundaries are becoming blurred, making it more difficult to predict where new innovations are coming from. Think, for example, about the automotive industry. Would anyone have expected an internet company to become a player in this industry? Yet, the Google self-driving car is far beyond being just a pet project of two billionaires and a bunch of geeks.

Finally, small start-ups have a few advantages over large, incumbent firms. They are more agile, they can experiment with different business models and solutions, and they can easily change their course of action. Start-ups are not necessarily all stronger than big corporates. They are just taking many more lucky shots at goal. It is in their nature to do new things, because their limited history is not yet imprinted in the organization.

This is especially important when it comes to developing innovations. And this is also why innovation and experimentation in a corporate business environment is so difficult sometimes. In fact, when I was planning this inaugural speech, I raised the question whether I really needed to hand out a printed version of the speech afterwards. The common response in my organization was "That's what we always do. Why do you want to do things differently?".

"That's not how we do it here!" 3 has become a corporate mantra that stifles innovation.

^{3 &}quot;That's Not How We Do It Here!: A Story about How Organizations Rise and Fall-and Can Rise Again." (2016). by John Kotter and Holger Rathgeber.

3. Corporate innovation in a new era

As product cycles are shortening and innovations are originating from new and unexpected sources, the internal development of new products and services is often not enough, and collaborative innovation is becoming more important. Collaborative innovation refers to new business development efforts in which external partners play an important role. Also referred to as open innovation (Chesbrough, 2003a), this type of innovation is playing a crucial role in the corporate innovation process and the development of new business.

Collaborative innovation thus presumes the inflow of external ideas and technologies to the new business development process. Using a broad range of external parties such as universities, start-ups and other incumbents, firms can get access to innovative ideas and developments that reside outside their own organization. Including these ideas and technologies in their own business development efforts allows them to speed up timeto-market while sharing the costs and risks associated with innovation. Research as well as practice in this area has primarily focused on the roles of mergers and acquisitions and strategic alliances in this regard, and the choice firms have between these two strategies (Hagedoorn and Duysters, 2002; Vanhaverbeke et al., 2002). With the rise of start-ups, firms have also become aware of other strategies, one of which is corporate venturing, or corporate venture capital. Investing alongside traditional venture capital investors, these corporate venture capital investments allow firms to tap into innovative ideas, get access to new technologies at a very early stage of development, and identify new opportunities (Chesbrough, 2002). Although much academic research on strategic alliances and mergers and acquisitions has been conducted, the field of corporate venture capital is much less developed, and researchers have only just begun to uncover the implications of corporate venturing.

Research in this area has shown that firms engaging in corporate venture capital investments have greater innovation rates and higher market performance (Dushnitsky and Lenox, 2005; 2006; Wadhwa and Kotha, 2016; Yang et al., 2014). However, the variety of tools available to incumbent firms to access external knowledge raises several questions. For example, what is the role of different tools in the various stages of new business development? In particular, what is the added value of corporate venture capital, and what does the "ideal" sourcing portfolio look like?

My colleagues and I have explored these questions in a number of studies, in which we investigated the technology sourcing portfolios of more than 150 pharmaceutical companies. We collected data about their mergers and acquisitions, strategic alliances, joint ventures and corporate venture capital investments over a 15-year period. We also collected their financial records and data about the patents they hold and apply for.

A first study, which was published in the Journal of Business Venturing (Van de Vrande et al., 2009), investigates the role of uncertainty when firms choose between different types of investments. Using a multinomial logit model to analyse almost 2000

interorganizational relationships, the results of this study show that companies use corporate venture capital investments primarily when investing in new technologies, or when investing in technologies that are more distant from their ongoing business.

In two follow-up studies, we also estimate the impact of corporate venture capital investments on the innovative performance of the investing firms (Van de Vrande et al., 2011a: 2011b). We find that corporate venture capital investments contribute to the overall innovation performance of companies, particularly when used as a complement to other strategies, such as strategic alliances and mergers and acquisitions. Taken together, these findings support the notion that different tools are used to tackle diverse types of uncertainty, and that an "ideal" sourcing portfolio combines different strategies to effectively target the various sources of knowledge around them.

In an article that was published in the Strategic Management Journal (Van de Vrande, 2013), I find empirical support for this hypothesis. The results of this study show that firms are better able to benefit from the technological diversity in their technology sourcing portfolio when they also invest in a variety of sourcing modes to target this knowledge. Greater sourcing mode diversity increases the effectiveness with which external knowledge can be transferred.

I therefore argue that it is time to start thinking about different interorganisational strategies as part of an integrated growth strategy. However, this integrated growth strategy is subject to environmental forces as outlined in the introduction of my talk. Despite the increasing interest among companies to set up their own corporate venturing unit, academia has provided only limited guidance for these companies. Although these forces may appear to be major challenges for many companies, they offer several opportunities for future research. In particular, they provide an opportunity to bridge perspectives from the strategic management and entrepreneurship literatures.

4. The future of collaborative innovation & business venturing

In my opinion, there are three themes within the area of collaborative innovation θ business venturing that deserve more attention from academic research, and that are leading for the research efforts as part of this chair.

First, business venturing, which refers to the creation of new business within established organizations, unites strategic management and entrepreneurship in a single organizational context. Also referred to as corporate entrepreneurship, this type of venturing requires established firms to create an entrepreneurial mindset (McGrath and MacMillan, 2000) and to adapt principles of entrepreneurship as part of their corporate culture. While this may seem as a contradiction in terms, literature on organizational ambidexterity has consistently shown that firms that combine short-term exploitation of current business with long-term exploration of growth opportunities outperform others (Cao et al., 2009; He and Wong, 2004; Lubatkin et al., 2006). Central to the notion of ambidexterity is the combination of exploitation and exploration, either at the firm level by separating the two in different organizational units, or at the unit or even team level by combining the two in single innovation activities (Gibson and Birkinshaw, 2004; Raisch and Birkinshaw, 2008; Smith and Tushman, 2005).

Prior research has shown that 71% of all new ventures are created from an idea that the founder came up with during a previous job (Bhide, 1994). Moreover, data from the Panel Study on Entrepreneurial Dynamics, collected by the University of Michigan, shows that 13% of people in full-time employment are currently trying to start their own business, but only 32% are doing so as part of their current job. According to these figures, one out of eight employees is involved in some kind of start-up activity, but only one out of 24 employees is starting up a new business for his or her current employer. This raises questions such as "how can entrepreneurship be motivated and stimulated in such a way that the firm can capture some of these ideas and use them to advance their own business development processes"?

Another central theme in collaborative innovation is the outflow of knowledge through corporate spinouts and spin-offs (Agarwal et al., 2004; Campbell et al., 2011; Cirillo et al., 2013). Employees may leave to start their own company (spinout), possible financially backed by the parent organization (spin-off). Such constructions allow incumbent firms to put promising new developments outside the corporate structures that are often not very supportive to new ventures with uncertain potential (Chesbrough, 2003b). I am currently working on a study that focuses on the new ventures that were formed by former employees of Intel. One of the key observations is the diversity of motives of both employees and Intel to maintain an ongoing relationship. For example, some ventures are financially supported by Intel because they may help grow Intel's market, whereas others are interesting because of the new technological developments that are being created. Research questions

in this area focus on the further development of these new ventures: what type of support structure (if any) is necessary to support these ventures? What happens to these ventures once they are more developed? Can and should these ventures be reintegrated into the parent company?

Another theme concerns the increasingly important role of start-ups. Over the past decades, we have witnessed many industry disruptions, often induced by new entrants with innovative new business models. As the overall interest for start-ups is growing worldwide, the number of start-ups is increasing, posing an imminent threat (or opportunity) to existing companies. Many firms have tried to find ways to tap into the knowledge of these young, entrepreneurial firms, for example, by setting up venture capital funds, incubators and accelerators. Nevertheless, little is known about how the incumbent – new venture relationship can be best organized. While both need one another, collaboration between the two remains difficult due to organizational and cultural differences (Weiblen and Chesbrough, 2015).

Questions currently warranting our attention focus on these relationships: how can incumbent firms collaborate with start-ups? How is the relationship best managed? And what can incumbent firms offer, besides capital, that can help new companies grow while developing a fruitful relationship? Together with the Erasmus Centre for Entrepreneurship, Corporate Venturing Network and colleagues here at RSM, we have recently concluded a first study to uncover some of the best practices in the area of corporate – start-up collaboration. Tapping into the experience of leading Dutch companies 4, we have collected a number of best practices and developed an online tool with which firms can measure their readiness to collaborate with start-ups. Following from this project, the following two research questions have arisen: When working with start-ups, what is the best and most effective way to scale-up? And, once a company has set up a number of collaboration efforts with new ventures, what is the best and most effective way to manage the entire portfolio of growth opportunities? A truly integrated growth strategy requires an understanding of each relationship that goes beyond the individual partner, but looks at each partnership as part of a bigger puzzle.

Finally, the changing nature of work not only leads to the development of more start-up companies, but also to an increased mobilisation of employed and self-employed individuals. Looking for flexibility, they gather in coffee shops and shared office spaces, or coworking spaces, as an alternative to the regular office at the firm or at home. During a recent study at Seats2meet.com, the largest provider of coworking spaces in the Netherlands, we found that users of such flexible office space benefit more than just having a desk and a place to work. Being part of a community makes people feel better, and one out of four people has started collaborating with someone they met at the coworking space.

⁴ Companies involved in this project included Akzo Nobel, ANWB, ASML, DSM, Eneco, ING, KLM, KPN, NS, Philips, Port of Rotterdam, Rabobank, Shell, Thales, and Unilever.

These developments offer opportunities for existing companies as well. In 2012, Google opened their first Google Campus in London, a meeting space for entrepreneurs and self-employed professionals to learn, share and develop their ideas. In the Netherlands, several companies have followed this lead. Mazars in Breda, Interpolis in Tilburg and Centraal Beheer Achmea in Apeldoorn have all opened a coworking space as part of their strategy to connect with entrepreneurs and flexible workers. These developments raise a number of questions, such as: How can companies get the most out of coworking spaces, how can they effectively connect with the flexible workers, and how can they capture and co-develop ideas? In a study that is currently being conducted at a number of coworking spaces, we hope to shed more light on these questions.

To conclude, the field of collaborative innovation and business venturing offers clear theoretical opportunities, but also important practical implications. Research in this area helps strategic managers to improve their understanding and skills in formulating and implementing collaborative strategies for new business development. Moreover, the development of tools and techniques will help managers to gain insight in the role of their organization vis-à-vis other firms in a turbulent and complex environment. For example, Ready to Team Up ⁵ is a tool that provides insights into how ready your company is to collaborate with others, and it helps identify your company's strengths and weaknesses in this area. Finally, research in the area of collaborative innovation and business venturing will help managers to understand the promises and pitfalls of corporate venturing.

I started this talk with a quote from Neil Gross, the CEO of Chumhum in the Netflix series The Good Wife: "Goliaths are the new Davids". The metaphor of Goliath and David is often used to explain why small companies succeed when taking on a large corporation. Personally, I don't think Goliaths are the new Davids. But I do think that corporate innovation would be a lot more successful if Goliath were able to think and act like David. Finally, as long as the world keeps changing, corporate innovation will be subject to numerous challenges and opportunities that will continuously change the rules of the game. I am happy to be a researcher in such an exciting field!

5. Words of thanks

I would like to express my gratitude to some very important people during the process of my appointment as Professor of Collaborative Innovation & Business Venturing.

First of all, I would like to thank the Vereniging Trustfonds of the Erasmus University Rotterdam, the Executive Board of Erasmus University Rotterdam, and the Dean of the Rotterdam School of Management, Steef van de Velde, for appointing me as endowed professor. I would also like to thank all members of the steering committee and Hans van Oosterhout, the former chair of my department, for their support throughout this process of appointment.

Becoming an academic is not something many people dream of when they are a child. In fact, I dreamt of becoming a fighter pilot when I was young, so you may wonder why I ended up in academia.

There have been a few crucial moments. The first was a conversation with my mother when I was about 11 years old. We were walking down the street in our village when she told me about the meaning of doing a PhD. Her explanation was simple: "to do research in an area that has not been done before". I was so disappointed. I thought that by the time I graduated from university, this would obviously no longer be possible, because by that time, they would have figured out everything. Without knowing it, I believe it was during this conversation that my mom planted a little seed in my head that would grow to where I am now.

Nevertheless, even during my studies I was convinced that I would have a career in business. It was only during a conversation with my Master thesis advisor, that the little seed my mom had planted was watered and started to grow. While walking to the train station with my supervisor, Geert Duysters (I didn't actually have to go to the station, but it was the best moment to meet up with a busy professor and get some advice on my thesis), asked me whether I had ever thought of doing a PhD. My answer was clear and simple: "I have studied for 5 years now! As soon as I graduate, I'm going to find myself a proper job."

To cut a long story short: That "proper job" turned out to be a PhD position at Eindhoven University of Technology where I started my research in the area of corporate innovation. I am indebted to Geert Duysters and Wim Vanhaverbeke for their support, guidance and above all our ever-inspiring conversations. I enjoy working with you and I hope we can continue to do so in the future.

I am also grateful to Chris Tucci from École Polytechnic Fédérale de Lausanne, who offered me a postdoc position at his chair, allowing me to work on my research, undisturbed and in a beautiful environment. The collaboration and interaction with the people at EPFL has not only led to great projects, but also to close friendships, and I am really happy that some of you are able to join me here today.

A special word goes to my colleagues here at the Department of Strategic Management and Entrepreneurship. Henk Volberda, I would not be standing here today if you had not hired me at the department - twice! A big thank you also to Pursey Heugens, for your ongoing belief in my abilities and above all for your support and mentoring throughout this process. I look forward to many more lunches at Bagels&Beans.

Pepijn, Michiel and Jurriaan. I have so many good memories of the times we spent together. Thank you for being great colleagues and friends, and for being there when I needed you most. Don't forget about our Master plan 🕲

Numerous other colleagues at the department have enriched my life in academia. Thank you for being there, for listening, for providing honest feedback, for challenging my assumptions and for your laughs. Justin, Luca, Giuseppe, Pengfei, Jitse, and Hamzeh: let's keep pushing the frontiers of corporate venturing research together.

I would also like to thank the partners of the Corporate Venturing Network. In particular, I would like to mention Corina Kuiper and Rob Kirschbaum, who were among the first people I got to know in this area back in 2003, and all the other members that were kind enough to share their experiences with me and to act as quest speakers in my courses on corporate venturing and strategic management. In a similar vein, I would like to thank Ronald, Marielle and Lenneke from Seats2meet.com for their openness and support throughout the coworking research. I hope that together we will move the field forward in a way that is not only of academic value, but also of practical relevance.

I am also grateful to have family and friends who are not academics. They keep me focused on the other important aspects of life and help me to develop skills that exceed the academic world, such as shopping, snowboarding and playing soccer.

Most importantly, I want to thank Marc, Lotte and Daan. Marc, our life together has been an exciting journey through unknown territory. I am grateful to have you by my side, for your belief in me (even when things get tough) and for giving me the freedom to do what I need to do. I look forward to continuing our travels. And to Lotte and Daan: thank you for accepting me the way I am and for never having to put up a charade. As we say in our household: Normaal is saai!

And now it's time to celebrate. Drinks will be served at the Erasmus Pavilion – I will see you there!

Ik heb gezegd.

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Vareska van de Vrande is Professor of Collaborative Innovation and Business Venturing at the Rotterdam School of Management, Erasmus University.

Vareska joined RSM in 2007 after completing a PhD in Industrial Engineering and Management Science at the Eindhoven University of Technology. Her expertise focuses on the areas of corporate venturing and collaborative innovation, including external technology sourcing, corporate venture capital investments, strategic alliances, joint ventures, and mergers and acquisitions. Other research interests include (corporate) entrepreneurship, patents, and venture capital. She has published articles in leading academic journals, including the Strategic Management Journal, the Journal of Product Innovation Management, IEEE Transactions on Engineering Management, and the Journal of Business Venturing. At RSM, Vareska teaches courses and modules in Strategic Management and Corporate Venturing at different levels.

In addition, Vareska is also the director of the Part-time PhD Programme in Management at RSM, a visiting professor at the École Polytechnique Fédérale de Lausanne in Switzerland, the founder of two web-portals on open innovation (www.openinnovatie.nl and www.openinnovation.eu), and a trained facilitator of LEGO® SFRIOUS PLAY® method and materials.

In her inaugural address, Vareska will call on companies to start thinking about different interorganisational strategies as part of their integrated growth strategy. Today's business environment is characterised by fast and frequent change, which is often difficult to predict. As a consequence, companies need to continuously invest in the development of new business in order to remain competitive. However, due to the increasing complexity of the environment, internal development is often not enough and collaborative innovation is becoming more important. The address will outline recent developments, their influence on collaborative innovation and business venturing, and how these will have short- and long-term implications for organisations.

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T +31 10 408 1182
E info@erim.eur.nl
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