

# **Entrepreneurial moments and momentum**

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## **Introduction**

For decades scholars have argued that the entrepreneurship field is immature or pre-paradigmatic. Writers within the field have argued that “entrepreneurship has become a broad label under which a hodgepodge of research is housed” (Shane and Venkataraman 2000, p. 217), and that “in the past, much of the entrepreneurship research has either lacked clarity of purpose or the specified purpose was of little consequence” (Low and MacMillan 1988, p. 141). It has, therefore, yet to gain complete legitimacy as an academic field. The main reason for this lack is that the field has not settled on a definition of ‘entrepreneurship’ and has not been able to agree on a coherent theoretical framework (Bygrave and Hofer 1991; Low 2001). Therefore there has been a strong interest in defining the phenomenon “entrepreneurship” and thereby carving out a unique and clearly stated research field. Identifying the distinctly entrepreneurial, that which defines entrepreneurship as a field, has proven difficult however.

Efforts have been made to locate the entrepreneurial in the characteristics of the entrepreneur (Carland *et al.* 1984; Carland *et al.* 1988). The so-called trait approach has argued that entrepreneurs are characterised by e.g. need for achievement (McClelland 1987), risk taking propensity or internal locus of control. The trait approach, however, has been largely abandoned, although there has recently been a surge in studies focusing on psychological propensities of entrepreneurs resulting from prior experiences, upbringing and socialisation (Chen *et al.* 1998). Other efforts have focused more on the firm, and argued that entrepreneurship is basically about organising (Gartner 1985), innovation (Miller 1983) or new venture creation (Low and MacMillan 1988).

Recent attempts at reconciling firm/innovation and individual oriented perspectives have focused on the notion of opportunities, arguing that entrepreneurship is the nexus of individual and opportunity (Shane 2003; Shane and Venkataraman 2000; Venkataraman 1997) or as “a process by which individuals - either on their own or inside organizations - pursue opportunities without regard to the resources they currently control” (Stevenson and Jarillo 1990, p. 23). The distinctly entrepreneurial thus has to do with opportunities and individuals doing something to/with them.

The dominant perspective on opportunities, the so-called discovery view (Alvarez and Barney 2007), argues that opportunities exist prior to the entrepreneurial process, which is initiated by an

alert individual discovering the opportunity (Kirzner 1997; Shane 2003). Yet the discovery view has been criticised for making problematic assumptions about the nature of entrepreneurial opportunities, process, and agency (Korsgaard 2008). The critics do not, however, reject the notion that the distinctly entrepreneurial is linked to opportunities. Instead they propose alternative understandings of opportunity and the relation between opportunity and individual in the entrepreneurial process. As argued by Sarasvathy (2008, p. 10): “I am in complete agreement with Shane and Venkataraman (2000) that we need to look into the nexus of enterprising individuals and valuable opportunities if we are to understand entrepreneurship better. [...] However, as it will become amply clear later in the book, there is a fundamental difference in the logical framework used by Shane’s entrepreneur, who is, engaged in the discovery and exploitation of opportunities, and the effectual entrepreneur, who ends up fabricating them from the mundane realities of her life and value system”.

But what defines entrepreneurship, and to what extent it might be linked to the opportunity concept are still open questions. In this paper we use the term entrepreneurial moment to designate the distinctly entrepreneurial. Thereby we implicitly argue that the distinctly entrepreneurial has a temporal dimension; it begins at some point in time and ends at a later point, thus having a definite temporal extension; hence the entrepreneurial *moment*.

### **Theoretical background**

In the so-called discovery view opportunities are defined as “situations in which new goods, services, raw materials, markets and organizing methods can be introduced through the formation of new means, ends, or means-ends relationships” (Eckhardt and Shane 2003, p. 336), or as “opportunities to bring into existence new goods, services, raw materials, and organizing methods that allow outputs to be sold at more than their cost of production” (Shane 2000, p. 451). Opportunities originate in the ideas formed by people about the value of resources, but this does not mean that opportunities are subjective. Despite their origin in subjective ideas opportunities have objective existence. “I will argue [...] that opportunities have an objective component that does not exist solely in the minds of entrepreneurs” (Shane 2003, p. 6). Or as phrased by Shane and Venkataraman (2000, p. 220): “Although recognition of entrepreneurial opportunities is a subjective process, the opportunities themselves are objective phenomena that are not known to all parties at all times. For example, the discovery of the telephone created new opportunities for

communication, whether or not people discovered those opportunities”. The name “discovery view” thus stems from the fact that the entrepreneurial process starts with the discovery of an opportunity.

Discovery initiates the process and is followed by evaluation and exploitation of the opportunity, at which point the entrepreneurial process becomes something not entrepreneurial. That is, at some point in time not too long after exploitation is commenced, the process stops being entrepreneurial. The distinctly entrepreneurial thus has a specific temporal dimension. There is a distinctly entrepreneurial moment. It is these moments that both researchers and practitioners eagerly seek: Researchers in their pursuit for a distinct phenomenon to delimit their field; practitioners in their pursuit of innovation and competitive advantage.

The notion that opportunities exist prior to the entrepreneurial process has been criticised in later years (Baker and Nelson 2005; Berglund 2007; Berglund *et al.* 2007; Dimov 2007; Fletcher 2006; Gaddefors 2005; Gartner *et al.* 2003; Garud and Karnøe 2003; Görling and Rehn 2008; Sanz-Velasco 2006; Sanz-Velasco and Magnusson 2004; Sarason *et al.* 2006; Sarasvathy 2004). The critics argue that the discovery view is empirically inadequate. The empirical inadequacy results from the assumptions made about the definite and stable nature of opportunities, linear processes, agency as residing mainly with the entrepreneur; as well as the lack of focus on interpretation, creativity and subjective factors (Korsgaard 2008).

Some of the critics present alternatives that argue that opportunities are in fact formed in the entrepreneurial process in a non-linear fashion (Baker and Nelson 2005; Fletcher 2006; Piihl 2005). Although this critique has yet to converge into coherent and comprehensive alternatives to the discovery view, the critique raises doubt about the entrepreneurial moment. If it does not start with discovery, then what does it start with? And if it does not consist of a sequence of events (discovery, evaluation and exploitation), then how does the process play out? In other words, despite the broadly shared belief that the distinctly entrepreneurial is linked to opportunities (Blenker and Thrane 2007; Gartner *et al.* 2003; Sarasvathy 2008), the temporal and dynamic characteristics of the entrepreneurial moment, and the role of opportunities is still very much a topic in need of empirical and conceptual exploration. This paper thus explores the following research questions:

- *What characterises the entrepreneurial moment?*
- *How does the entrepreneurial moment relate to opportunity?*

### **Research setting and method**

In order to explore these questions a single case study design is used. The case study approach seeks to understand dynamics at play in a single setting (Eisenhardt 1989), thus allowing a more in-depth insight than found in aggregate studies. Such a design implicitly addresses the contention of Shane (2003, p. 262) that: “Much of what we know about opportunities is observed at a very high level of abstraction”. Furthermore the design answers general calls for more qualitative research in entrepreneurship (Gartner and Birley 2002; Grant and Perren 2002).

The case study approach aims at generating theory rather than testing it (Eisenhardt 1989). The purpose of this paper is thus to contribute to formulating theory about entrepreneurship and opportunities rather than testing already existing theories. As indicated above the continued debate concerning the nature of the field of entrepreneurship and the role and nature of opportunities suggests that there may still be an important role for theory generating research.

As the single case study does not allow the standard form of generalisation, the suggestions made in the paper, are merely suggestions. More studies are needed to make definitive statements about the topics involved.

The company Calc-Master was selected using a critical case selection strategy (Neergaard 2003). Such a strategy is well suited to challenge and extend existing theory. The idea behind choosing Calc-Master is that the company represents a successful but somewhat typical recently started Danish company; suggesting that “if it can happen here, it can happen anywhere” (Neergaard 2003, p. 26).

### **Case description and analysis**

Calc-Master is a software company that produces and markets a series of calculation software programmes primarily used in construction and insurance. Since the start up of the company in 2003, the company has grown to ten employees including the two founders, and a professional board assists in the development of the company. Today approximately 800 companies have bought licences for Calc-Master's software generating an annual turnover of 7,5 Dkr (1 million Euro), and the company has generated a profit since year two. The company operates almost exclusively in the Danish market.

Product wise Calc-Master produces Calculus III, the latest edition of the calculation software. A number of versions and combinations of the product are marketed to different markets and groups of companies. Two versions of Calculus III are used in the construction industry, and help contractors of different sizes to calculate tenders and estimates as well as risk-evaluation. This software programme can be combined with a price-list database product, which incorporates standard prices of construction materials in Denmark. Also a smaller version of this programme is sold in Buildshop, a large builders merchant chain, to small scale contractors. Calculus Insure differs somewhat by targeting the insurance industry. This version allows the user to calculate insurance related figures such as replacement value and write-offs.

The basic business model is that the customer buys the product and an annual subscription which covers support, updates and courses organized by Calc-Master, for as long as the subscription lasts.

### *Starting up*

John and Peter, the two founders of Calc-Master met during their studies at the Danish Technological University (DTU), where they were both studying to be engineers. Having met up at the dormitory where they were both living their shared interest in computer programming formed the basis of an emerging friendship. They believed that their self-taught programming skills could assist in generating supplementary income during their studies and they started taking on programming jobs. The first job was a software-programme for a company that books advertising spots for local radio. The second job grew from conversations with Peter's father who was CEO of a construction company. Peter and his father had on occasions talked about the possibility of improving the calculation process, which had so far been done in traditional spreadsheets a la Microsoft excel. Along with John, his father and a third fellow student (who eventually withdrew

from the project), Peter drew up the specifications for the new programme, agreed a price, and the three students started programming.

Eventually Calculus I, the first version of the calculation software programme was handed over to the construction company, and a process of adding and refining features and getting feedback from the employees at the construction company began. John and Peter also made efforts to sell the product to other contractors, but were largely unsuccessful. After a few sales visits John and Peter gave up and their focus turned elsewhere. They did however retain the rights to Calculus, and also met every once in a while to update and make small adjustments to the programme.

Four years later in 2002 investors in the company that John had worked in since finishing his studies pulled the plug, and John was left without a job. At the same time Peter was growing tired of working at the university, as a PhD and Post doc. After some deliberation, the two decided to give it a go with Calculus.

#### *Adding a database*

One of their first things Peter and John did was to contact Price-Base; a company that sells price-books containing standard prices of construction materials in Denmark, both in book and database form. Integrating Price-Base pricebooks into Calculus thus allows the user to calculate using up to date standard prices. For the meeting John and Peter had gotten hold of the Price-Base data and integrated them into Calculus. This apparently impressed the Price-Base people.

*Then we, I think a bit brilliant, took their electronic data, that we had gotten hold of, and took some time to understand them in depth, the technique, and changed them so they could be used in the Calculus programme. And then we called the manager and said that we had something we wanted to show them, and he orchestrated a meeting where we came and showed it. And we did, and that was the right way to do it, to have invested a bit in advance. And he thought it looked really exiting, and wanted to make an agreement with mutual marketing, and I think that was really nice of him, right. We came two guys and brought nothing to the table, had nothing to offer (John).*

The two companies now have a partnership where they both market and sell each others products. Sealing the deal with Price-Base was a major boost for Calc-Master although perhaps at the time they were not really aware how important the integration of standard price-data was.

*At first I don't think we really knew how important these databases would be for us. We just thought that it was clever that you could do it. Later we've found out that for consulting engineers and architects it's essential to have a price-database. [...] If we want to be in that market we need some kind of price-database, we really do (Peter).*

#### *Expanding into the insurance business*

The next pivotal cooperation that boosted the development of Calc-Master was the collaboration with Insure-Centre. Insure-Centre is a company that specialises in optimizing claims flows for insurance companies by using scale advantages in purchasing goods and services for insurance-customers. Having successfully started an optimizing concept for car-repair Insure-Centre was apparently looking to copy the concept in building-damages. For this concept to work it had to be possible to calculate the costs of building damages precisely. In the car-repair area there are standard prices for repairs, but this is not the case in the construction business. Therefore Insure-Centre contacted Calc-Master through their website in 2003, asking for a meeting to discuss a possible collaboration. The idea being that the insurance companies outsource building-repairs to Insure-Centre that in turn has a network of contractors that would then use Calculus to calculate the price of a given repair.

The collaboration with Insure-Centre entailed some reprogramming of Calculus to make it capable of handling the specifics of insurance calculation. Although the core of the programme was retained Calc-Master decided to make it into a separate product called Calculus Insure. The product now makes up a third of the revenue of Calc-Master and is used by most of the Danish insurance companies.

*So it's been really exiting working with Insure-Centre and business wise it's been really good, it has. I think half of our turn over today has been from, arh let's say a third. I think that's more accurate (John).*

*And today I think that all larger insurance companies except (name of a large Danish insurance company) is using the Insure-Centre solution and there is about 100 contractors in Denmark who are part of this concept. And that means that Calculus is being used everywhere to calculate building-damages (John).*

#### *Into retail stores*

In 2004 Calc-Master was contacted by a representative of Buildshop, a large chain of buildings merchants in Denmark, focusing mainly on professional contractors. This particular representative had been hired by Buildshop to explore future business opportunities. Having come across Calculus earlier he thought that offering special services such as a calculation software tool to the customers would help Buildshop maintain and expand their market share. The idea being that the contractors would do their calculation in Calculus and by the click of a button order the materials needed from Buildshop. In the same process Buildshop bought a rival company to Calc-Master, called Pro-Calc. The calculation software Pro-Calc, incorporated an advanced database part, but was, according to John, not nearly as user friendly as Calculus.

*But lucky for us, the guy who owned Pro-Calc was retiring and apparently couldn't sell the company, and the guy from Buildshop identified that. And to make a long story short, Buildshop ended up buying all of Pro-Calc. And we convinced them that the right thing to do was to take out the price-databases from Pro-Calc, build that technology into Calculus, and sort of make a really user-friendly product that way (John).*

As a consequence Calc-Master was able to build a very good technology into Calculus, at no cost. Buildshop in turn got an improved version of Calculus, that was re-labelled with a new name that was integrated into the online-order system that Buildshop already had in place. The sale of the re-labelled Calculus programme came off to a good start with 100 licenses sold in the first three months, where Calc-Master and Buildshop together arranged seminars for the contractors. Later the sales figures have been less impressive although they are now beginning to pick up again.

#### *CAD integration*

At the time of the researcher's data collection, Calc-Master was in the midst of what may very well turn out to be another important venture for the company. Work has been done in Calc-Master to

integrate Calculus with 3 dimensional Computer-aided Design (CAD) software. The basic idea is that 3D CAD software operates with objects, that may in principle be identified as such (e.g. a front door, a plaster wall etc. of given dimensions). It will therefore be possible to transfer data directly from the drawing to the calculation software.

The initial idea of integrating 3D CAD into Calculus emerged from talking with customers, mostly architects in 2004. At first John and Peter were reluctant to take on this challenge. But eventually they were contacted by a Finnish company, who were looking for a partner to help them enter the Danish market. The Finnish company had a solution where CAD, calculation and planning software was tied together through a server. They appeared to be concerned that their calculation software would not be suitable in the Danish market, and therefore saw Calc-Master as an interesting partner. As part of the exploration of the potential for a partnership, Calc-Master developed a solution where data could be retrieved from a leading CAD software programme via the server of the Finnish company into Calculus. Another factor that made Calc-Master invest effort into this particular integration was a large scale project funded by the Danish Government and the construction sector called “Det Digitale Byggeri” (Digital Construction). The purpose of Digital Construction is to improve the quality and efficiency of Danish construction by implementing digital solutions. An important part of this initiative is the introduction of a series of demands to contractors bidding for public construction-projects in terms of their use of digital solutions. In order to compete for public contracts the contractors must thus from 1 January 2007 be able to bid for the contract via the internet, make use of 3D models and project web (an internet site for uploading and sharing documents relating to the construction) and be able to transfer data electronically ([www.digitalconstruction.dk](http://www.digitalconstruction.dk)).

Calc-Master presented the solution at an event organised by Digital Construction:

*And I remember being out presenting it in some forum in Digital Construction at (name of large Danish Contractor), they were just hosting it, and the enthusiasm in the room, it was a whole conference room and it was just, I could feel it (laughs). It was a feeling that said, okay this is something that we really have to do (John).*

The collaboration with the Finnish Company did not move beyond this technical integration, but John and Peter still felt that the integration between Calculus and 3D CAD had potential. They therefore proceeded and created a direct integration between Calculus and a leading international CAD software programme, where data could be exported directly from the CAD programme to Calculus. Later also an integration via the IFC file format (a generic file format for all CAD programmes) was created.

Calc-Master thus sees Calculus as a potentially important part of the digitalisation of Danish construction. Accordingly they try to establish a form of first mover advantage in order to be ready when the architects and contractors start asking for products that can handle this:

*But there's no doubt this is how things work. In a few years in the leading companies and in five years it will be the majority that start using these tools in this way. So it's a strong position for us to have. Right now we're ahead, in a few years it's going to be a requirement that a programme like ours can do these things (John).*

The expectation that things will develop in this direction is also leveraged by Calc-Master in sales situations.

*When I show them the (name of the leading CAD software) integration, I do that sometimes, I only do it to say: Sometimes you've got these spreadsheets that you're really quite happy with. They can see that there is some stuff in Calculus that's clever. So I want to tell them: Look at this. This is how the world will look in five years time. It's all digital. You're not going to do that with your spreadsheets. You're not going to keep up with the development. And then I show it and often it's, well that's not something we use. No probably not, but do you think you might need it in five years when you're doing a big public project where it's a requirement? Yes okay maybe so. And we can see with some of the really big contractors, they're actually starting to loose a couple of projects because they're not in on this. So there is interest in it. And more and more interest (John).*

Whether Calc-Master and the other stakeholders pushing for more digitalisation and integration of software tools in construction will be successful remains to be seen. However, John sees positive indications already.

## Entrepreneurial moments

In order to identify the entrepreneurial moment(s) in the story of Calc-Master we need a set of criteria for selection. Within the entrepreneurship field it is normally stated that the outcome of a successful entrepreneurial process is either innovation/change or a new firm. Schumpeter (1961) argued that entrepreneurship causes change in the economy through the introduction of a new good or quality of good, new method of production, the opening of a new market, the conquest of a new source of material, or the carrying out of a new organisation of an industry. The discovery view follows this line of thinking in arguing that opportunities are situations in which “new goods, services, raw materials, markets and organizing methods can be introduced” (Eckhardt and Shane 2003, p. 336). Others have argued that entrepreneurship is basically about new firm creation, relegating the question of innovation and change to a secondary order. Although these two criteria are oppositions in an ongoing debate, they do come together in the sense that opportunities are often exploited through new companies. As such start up rates can be used as a proxy for quantity of opportunities in a given industry (Shane 2003). In the following we use all the above outcomes to identify entrepreneurial moments in the case. A total of six successful entrepreneurial moments are identified in the case-story and summarised in table 1. There may well be, however, further entrepreneurial moments, which have not been successful and therefore have not resulted in a positive outcome.

	Initiation	Process	Outcome
Moment 1: Calculus I	Peter’ father suggests that Peter and John write a calculation programme	Programming and a process of addition and refinemet based on feed back from Ove Petersen Entreprise.	New product: The Calculus I programme which was used by Peter’s father’s company and few others
Moment 2: Starting Calc-Master	John and Peter find themselves without a job and decide to make an effort with Calculus.	They start the company Calc-Master.	New company: Calc-Master.
Moment 3: Integration with Price-Base database	Peter approaches Price-Base.	John and Peter integrate the Price-Base data into Calculus and demonstrate it at the	New product: Integrated calculation and price-list. Calc-Master and Price-Base have a mutual sales

		meeting with Price-Base. They are impressed and formal collaboration is established.	agreement. This agreement is crucial to the sale of Calculus to architects and contractors.
Moment 4: Calculus Insure	Insure-Centre contacts Calc-Master in order to explore possible collaboration.	A new version of Calculus is written, specifically to the needs of Insure-Centre and insurance assessment of building damages.	New product: Calculus Insure, and a formal collaboration with Insure-Centre. Calculus Insure now makes up one third of Calc-Master's turn over.
Moment 5: Collaboration with Buildshop	Calc-Master is contacted by an employee at Buildshop	A smaller version of Calculus is written and seminars are launched at Buildshop stores across the country.	New market: Small scale contractors through retail stores. A reasonable amount of licenses sold, especially at the beginning of the collaboration.
Moment 6: CAD integration	Conversations with customers and contact from a Finnish company. Reinforced by developments in Digital Construction.	Different technical integrations are made, presentations of the integrations, meetings with international CAD companies, etc.	A new product: Technical integration of the leading CAD software and IFC file formats. Increasing sale as a result of this is beginning to show.

*The interactive dimension of moments*

Across the moments it clearly stands out that they all grow from interaction and combination. The first version of Calculus grows from the talks with Peter's father who has a keen interest in calculation and wishes to improve the current calculation methods. Yet it is in the combination of the fathers' interest and the programming skills and interests of John and Peter that the possibility to create Calculus occurs. Indeed the fact that Peter and John are more interested in graphic design and user-friendliness than calculation has a significant impact on the further development of the programme and Calc-Master as a company.

*And we're also very aware of it (simplicity in the programme). Peter had just taken a course on graphic software design. Interaction with users and that sort of thing. So we were very in to that, and I think programmers have this thing about a proper programme, that it's written in this way and that the user can figure it out and stuff like that. There's some pride in that actually, and we*

*certainly had that. And we've never had any doubts if a customer says, I can't figure this out, well if there's more than one saying it, then we have to change it (John).*

For the same reason the basic structure of the programme was not designed specifically for the construction business. Instead a more open ended approach was used. As Peter later comments:

*But there's a functionality that we try to think it generically. On a larger scale. If it works like this in the insurance business. How can it work in ordinary calculation? (Peter)*

The start up of the company of course is the result of interaction between John and Peter. The two founders combine their resources into a form that stabilises the interaction. More interestingly perhaps is the fact that the following successful entrepreneurial moments of Calc-Master result mostly from contacts and comments made by parties outside Calc-Master. In both moment four, five and six Calc-Master are initially approached by other companies with problems that they believe Calc-Master can help with. All these moments end up producing a valuable area of business for Calc-Master.

Characteristic for all the moments is also that substantial effort is invested into the combination of the resources, technologies and interests. Both Calc-Master and their collaborators act purposefully to combine the elements into a venture that works. The work invested by John and Peter in writing the first version of Calculus is answered by the willingness of the customers to use and give feedback on the programme. This hard work ensures an alignment of the interests of the actors, as well as the technologies involved. The same goes for the collaborations with Price-Base, Buildshop, and Insure-Centre. Both Calc-Master and the respective collaborators add agency. And the agencies applied push the process in the same direction.

The continued agency applied by the relevant actors builds what may be called momentum. Momentum understood here as a strength, intensity and movement in the process. Indeed the momentum is the key for the successful outcomes of the entrepreneurial moments. As the relevant parties continue to add agency and agency is added from other vital parties such as customers, momentum continues and increases. Reversely if agency is discontinued the momentum seizes and

so does the entrepreneurial process. This comes out clearly if we compare the successful entrepreneurial moments with those that did not succeed.

### *Moments without momentum*

John and Peter relate stories of moments, i.e. interactions and combinations that never gain any substantial momentum. (The incidents recounted below were offered in the interviews in the narration following the initial generative question, or in response to the interviewer's request for descriptions of collaborations that were not followed through.)

One example of a moment without momentum, is an approach made by (name of a large Danish based international contractor). They had been trying to make their own calculations software, but were apparently unhappy with the result, and contacted Calc-Master. The proposal made by the contractor could potentially be very profitable for Calc-Master but, John and Peter decide to decline the proposition. Peter explains why:

*Well, a long story made short, they had been doing some development of their own, and failed, and then they wanted, really they wanted the functionality of our programme, but with a twist of their own. And that breaks with the generic principles that we use. It ended up with us having to say, we won't do it. It's a lot of money, but we won't do it. [...] I'll say that when we took on (name of another large Danish Contractor, one of Calc-Master's first big clients), we had a couple of months development in the programme, And that's a lot. But it was manageable. But this thing [...], we would be hung up for six months (Peter).*

Also another major player in the Danish consulting engineers market was involved in negotiations with Calc-Master. A preliminary deal for some additional programming in Calculus (which later becomes an integral part of Calculus III) and purchase of licenses was agreed. But disagreements in terms of the expectations and what had been agreed thus far lead to a discontinuation of the collaboration. According to Peter the additional programming was done at very little expense to the client, in return for them committing to using the programme widely in the company. However the client returned with a new list of additional requirements to Calc-Master before spreading the software. At this point Calc-Master decided against continuing the collaboration.

Finally the above mentioned collaboration with the Finnish company is also comes to a halt, as John and Peter feel that the two companies are not necessarily in agreement on where to go and how fast to go with the collaboration.

*We don't spend any time with (name of the Finnish company) any more. It sort of died out. Hard to say why. But they were trying to push us into signing some agreement, and it was all a bit too fast for us, sign this NDA and all sorts of stuff. So we hit the brakes a bit. We also didn't feel that they really understood the business here in Denmark and could make something profitable out of it. So they were disappointed and then we haven't heard from them (John).*

The collaboration with the Finish company did however play a significant role in the overall entrepreneurial moment relating to the CAD integration.

Whether these moments could have been successful in the sense of leading to new products or markets, is impossible to determine. What can be determined however is that once agency is discontinued the momentum stops and nothing more happens. Entrepreneurship as a process thus seems, based on this case, to be dependent on interaction, two or more agents applying agency to some shared object or objective, causing the moment, but also on continued application of agency from agents. Indeed it may be speculated that the inclusion of further actors, adding agency, increases the momentum of the entrepreneurial process (Latour 1987).

#### *The temporal dimension of moments*

The entrepreneurial moments identified so far in the history of Calc-Master are not isolated at the beginning of the venture. The first entrepreneurial moment actually plays out well before the start-up of the actual company. After the start up of the firm four additional moments occur, that all have significant impact on the development of the firm.

The entrepreneurial moments have a distinct temporal beginning when the first efforts are made to combine elements. We also find that establishing this combination may be a difficult affair, and it may take time to align interests, technologies and actors into a stable formation. Indeed the combination may very well fail. When the combination and formation finds a more stable form, a different kind of agency is needed. The entrepreneurial moments thus seems to fade out after the

combination has been stabilised and the outcome has been created. In the case we find that moments three, four and five become established areas of business for Calc-Master embodied in the mutual sales agreement with Price-Base, in the relabelled Calculus sold at Buildshop, and in Calculus Insure. These business areas then have to be managed, perhaps implementing incremental changes in the business model or product. Also the actual firm, in the form of a combination of John and Peter's resources and interests becomes something to be managed briefly after having started it. In other words, following the entrepreneurial moment, if it is successful, the combination will stabilize. As exemplified by John's concluding comments on the collaboration with Insure-Centre:

*(Calculus Insure makes up a third of your revenue?) Yes the insurance area. I don't think it will be so in the future because we've sort of saturated that market. All the companies have been added. There's not going to be ten new insurance companies and if there is they'll just be taking from the old ones. But it's a good business area, and we've got some subscriptions also in the area also in the future that are going to be a cornerstone in our turn over.*

To summarise we find in the case that entrepreneurial moments are temporally distinct processes. They are initiated when a number of actors act in accordance to create a new combination of interests, technologies and other elements which result in the creation of a new artefact, be it a firm, product etc. The success of such effort is dependent on the continued action of the actors involved, what we referred to as momentum. These characteristics contain potentially generic features that can be extended and explored in further research.

### **Moments, momentum and opportunities**

Having made advances in terms of answering the first research question, we can now proceed to explore the second. Returning to the definition of opportunities given by Eckhardt and Shane (2003, p. 336), as "situations in which new goods, services, raw materials, markets and organizing methods can be introduced through the formation of new means, ends, or means-ends relationships", the case illustrates that the founders of Calc-Master continually find themselves in situations where new combinations are made possible. However four reservations against the discovery view's interpretation of opportunities must be made, given the case story.

1. One opportunity or many? In the discovery view, each entrepreneurial venture, or moment as phrased in this paper, is linked to only one opportunity.
2. Are opportunities discovered or formed in the entrepreneurial process?
3. The relation between resources and opportunity.
4. Agency: Does agency, as indicated in the discovery view, reside primarily in the individual entrepreneur or entrepreneurial team?

### *One opportunity or many?*

How many opportunities are we confronted with? As the case shows six distinct entrepreneurial moments are we dealing with six opportunities (or even more considering the many interactions that could have become entrepreneurial moments, but did not), or is it simply one opportunity being exploited in a number of ways? Neither answer seems satisfactory. Analysing it as one opportunity highlights the initial efforts made by John, Peter and Peter's father, but at the expense of relegating the key actors in later moments to supporting roles. It also makes invisible the many transformations that the opportunity thus undergoes throughout the process. On the other hand, seeing it as several opportunities splits the analysis into independent sequences that can potentially be analysed separately. This would make the close interrelation between the entrepreneurial moments invisible. Instead we may better regard the opportunity as multiple; as more than one, less than many (Law 2004). Such an approach would see the opportunity as plastic or fluid (de Laet and Mol 2000); what an opportunity is depends on the practices in which it is incorporated. So when Calc-Master and Insure-Centre together enact a calculation programme then that is what the opportunity is.

### *Discovered or created?*

Folding this perspective back to the contentions above, we find that the opportunity in question did not have a definite existence prior to the entrepreneurial process, but is in fact created in it. As such this case supports a creation rather than a discovery view of opportunities. Furthermore applying the fluid concept allows us to see the transformations that the opportunity undergoes; and perhaps most importantly that these transformations are not inherent in the opportunity but a result of what is being done to it; how it is enacted by the relevant actors. And finally that different enactments of the opportunity can co-exist.

### *Resources and opportunity*

The discovery view defines opportunities as “situations in which new goods, services, raw materials, markets and organizing methods can be introduced through the formation of new means, ends, or means-ends relationships” (Eckhardt & Shane, 2003, p. 336), meaning that the opportunity precedes the combination of resources. Contrary to this we find in the case that the actual combination of resources creates the opportunity. Furthermore we find that the opportunity is continually transformed in the process as resources, interest, technologies, artefacts, actors etc. are combined in new ways.

This finding contradicts Stevenson and Jarillo’s (1990) contention that entrepreneurs pursue opportunities without regard to already controlled resources. The resources controlled by Calc-Master seem to be absolutely pivotal in the creation of opportunities. Rather than searching out new resources in the pursuit of a given goal, the combination of already available resources drives the entrepreneurial process. And as resources from several parties are leveraged the entrepreneurial process gains momentum.

### *Agency*

Finally the case makes us sceptical of the conception of agency in the discovery view of opportunities. Shane (2003) argues that the entrepreneurial process begins with an individual discovering an opportunity. This discovery is a cognitive and thereby individual process. Furthermore he argues that “entrepreneurship requires a decision by a person to act upon an opportunity because opportunities themselves lack agency” (Shane 2003, p. 7). This emphasis on the individual entrepreneur has been targeted by critics. As Fletcher (2006, p. 425) states: “too much agency tends to be attributed to individual people who make judgements about where there are gaps in the market”.

In the case we find that agency is being attributed from multiple actors in the entrepreneurial process. Indeed the original founders are important, but in the case it stands out clearly that without the agency of other actors, the entrepreneurial process never starts of. Extrapolating on the case we may even argue that entrepreneurial processes are dependent on agency being distributed among multiple actors (Latour 2005), and that it is this distribution that gives momentum to the process.

This finding resonates with other studies of entrepreneurial processes, where agency is found to be distributed (Garud and Karnøe 2003).

### **Implications for research**

The analysis of the case above gave a description of an entrepreneurial process which resonated poorly with the discovery view of opportunities and the notion that entrepreneurship is the pursuit of opportunities without regard to resources controlled. Although the case showed a strong link between the entrepreneurial moment and the opportunity concept, it also showed that the opportunity was created and re-created, that agency was distributed and that the resources already controlled played a significant role in the enactment of the opportunity.

It may therefore be suggested that further research is needed in terms of the entrepreneurial process and opportunities. The findings of this paper have generic features that can potentially be extended beyond the limits of this individual case study. As for the debate on the distinctly entrepreneurial or the entrepreneurial moment; the case suggests that there is indeed a distinctly entrepreneurial moment. In the case these moments were initiated by interactive efforts made by multiple actors, and dependent on this action being maintained, and thereby creating momentum. As such we may suggest that entrepreneurship is basically an interactional phenomenon that may play out in newly started firms, but not necessarily so.

### **Implications for practice**

Making implications for research and practice from a single case study is always a hazardous affair. And the implications can hardly exceed the level of suggestions. This case did, however, demonstrate the value of some of the entrepreneurial virtues not always emphasised. The success of Calc-Master so far seems to have resulted from a strong ability to engage in collaborations with other companies, and openness towards new enactments of the programme Calculus. The collaborative skills of the founders have overshadowed elements such as strategic planning and prediction, which are often emphasised in standard entrepreneurship and management teaching (Sarasvathy 2008). This case thus lends support to a more tactic, non-predictive way of approaching entrepreneurship, where collaborations and networks are valued not just as sources of resources, but as integral parts of the venture.

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