

# Opportunity and Implications of Grocery E-Commerce

Vangkilde, Mads

*Document Version*

Final published version

*Publication date:*

2005

*License*

CC BY-NC-ND

*Citation for published version (APA):*

Vangkilde, M. (2005). *Opportunity and Implications of Grocery E-Commerce*.

[Link to publication in CBS Research Portal](#)

**General rights**

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

**Take down policy**

If you believe that this document breaches copyright please contact us (research.lib@cbs.dk) providing details, and we will remove access to the work immediately and investigate your claim.

Download date: 04. Oct. 2022



# **WORKING PAPER**

**Nr. 3, 2005**

**Opportunity  
and Implications  
of Grocery E-Commerce.**

**by**

**Mads Vangkilde**

**INSTITUT FOR AFSÆTNINGSØKONOMI  
COPENHAGEN BUSINESS SCHOOL**

**SOLBJERG PLADS 3, DK-2000 FREDERIKSBERG  
TEL: +45 38 15 21 00 FAX NO: +45 38 15 21 01**

# Opportunity and Implications of Grocery E-Commerce

Mads Vangkilde<sup>1</sup>, Copenhagen Business School

## ABSTRACT

**Purpose:** To incorporate the element of sustainability of advantages into the concept of First-Mover Advantage for analysis on grocery e-commerce. Grocery e-commerce is a relatively unexplored phenomenon in Denmark and I seek to explain this via the concept of FMA. In order to fully understand the complexity of the situation, sustainability of advantages needs to be incorporated into the concept. **Design:** Via a literature review on the subject of first-mover advantage, uncover the lack of sustainability of advantage. Hereafter construct a framework for analysis based on this literature review and coupled with previous empirical findings on grocery e-commerce. **Findings:** a) Providing insights into the concept of first-mover advantage, b) sustainability of advantages and c) providing a framework for analysis on advantages sought by acting entrepreneurial. **Value:** The applicability of the concept of first-mover advantage is very descriptive to date. With this paper and hopefully more to follow, I wish to transform the FMA concepts into a tool for analysis addressing the very crucial element that is not dealt with today – sustainability.

**Keywords :** First-Mover Advantage; e-commerce; grocery industry; sustainability

## 1. INTRODUCTION

In the grocery industry as in most other industries, endless opportunities seemed available with the commercialisation of the Internet. Producers, wholesalers and newly established pure-players dawned the possibility of dis-intermediating the ever so strong supermarket chains servicing the end consumers. As in most other industries, initial attempts to break this new market failed. In Denmark, a few attempts of breaking into this new market have been made, mostly with devastating results. Remarkably, none of the attempts to enter the new arena of competition have involved the major actors in the industry.

---

<sup>1</sup> Department of Marketing, Phone: +45 3815 2119, Fax: +45 3815 2136, Email: [mv.marktg@cbs.dk](mailto:mv.marktg@cbs.dk)

A number of reasons explain this lack of success. Most prominent among the different reasons is a lack of attention to operational handling and the implications hereof for overall business success (Kornum et al. 1999; Johnsson & Kornum 2001; Kornum 2002). It seems that the dazzling new opportunities blinded the need for old-fashioned business understanding and handling of materials. Calibrating operational set-up, service level and consumer potential have proven lethal to most attempts of establishing e-commerce solutions in this industry – foreign and domestic. The most common answer as to why there have been no renewed interest in entering this new market channel is lack of profitability. Does lack of potential profit really account for the lack of attempts to enter the e-commerce channel? There is little doubt that operational set-up and the ensuing profitability are significant factors in the question of lacking e-commerce solutions.

I propose the concept of *First-Mover Advantage* (FMA) as a tool to dissect the complexity of understanding the extent of e-grocery existence. In order to understand why some industry members have acted on the new opportunity of grocery e-commerce while others have applied a wait-and-see strategy, the potential gains and losses need to be uncovered. This does not suggest a “mere” economically based analysis, rather an in-depth look at the motivating and inhibiting factors determining the individual behaviour of each actor. Simply stated, we need to understand the perceived net benefit (rents, market shares, etc.) versus the perceived net expenditures (time and all tangible and intangible resources). While this is simple to state, it is by far simple to outline and analyse. The core issue of this statement is captured via the concept of FMA. While a new opportunity offers a means of offsetting the existing balance of competition and promises payback, it also involves investments proportionally overshadowing those of competitors pursuing a successful entrepreneur. The grocery industry is a prime object of analysis to explore these exact dynamics; that is, for analysis of the grocery industry and its collective response to the opportunity of establishing e-commerce solutions.

An issue that appears pivotal in connection with FMA generally, and with e-grocery initiation specifically is that of durability of advantages. Any given company may or may not be able to harvest advantages from being first. Crucial to understanding why a company would refrain from seeking such advantages in the first place is “durability/sustainability”. Durability in connection with competitive advantages is a heavily debated subject. Durability can be discussed both in a context where it is eroded by time and/or money, but also as having a more intangible nature where money and/or time

has less of an effect. An advantage should be sustained long enough for a company to break-even or earn rents. Given the importance of durability of advantages in a FMA perspective, how does the concept treat this factor? Although accounting for many and very different possible sources of first-mover advantages, the FMA literature contribute very little to understanding on durability of those advantages. I will therefore examine the extent of focus on durability of advantages within the FMA framework.

In sum, the aim of this article is to:

- Uncover the extent to which durability of advantages is explored within the literature concerning FMA.
- Suggest a model for incorporating the element of durability of advantages into the concept of FMA.
- Suggest a model for analysis on the grocery industry

The outline of this paper begins with definitions of first-moving and pioneering as these definitions are critical in establishing an explicit language concerning the area of attention. Following the definitions, there is a short review of the FMA literature. Hereby an understanding of the concept is illustrated, and more importantly the lack of attention towards sustainability is apparent. The overall issue of FMA is then linked to a context of pioneering e-commerce in the Danish grocery industry. Having outlined the different components, I then proceed to present my strategic framework for analysis and evaluation, suggesting an incorporation of sustainability of advantages into the FMA concept.

## **2. FIRST-MOVERS**

FMA is a term, which most scholars and business people unstintingly find familiar. The term itself is rather self-explanatory at first eyesight. There is however more than meets the eye. When asking more specifically to the nature of pioneering advantages most people fall short of stating the obvious – that it denotes gains won by acting entrepreneurial. This section seeks to outline the elements of pioneering and establishing an explicit understanding of a first-mover.

Firstly, it is necessary to examine what a first-mover is characterised as, and which functions a pioneer fulfils. The reason why this is necessary links back to a reoccurring question concerning pioneering advantages – are they a real opportunity? The answer to this very valid question is given via the definition of a first-mover.

There should be no doubt that empirically proving the existence of first-mover advantages is difficult. Lieberman & Montgomery (1988) define a first-mover in the context of earning positive rents as a consequence of early entry. Although simple, this definition is operational and recognisable, leaving discussions on degrees of innovation, processes and idea creation vs. market introduction behind. Two quotes address these more complex elements of pioneering.

*A firm can achieve first-mover status in numerous ways. For example, the first firm to (1) produce a new product, (2) use a new process, or (3) enter a new market can claim this distinction. (Kerin et al. 1992, p. 33)*

*Inventor - the firm(s) that develop(s) patents or important technologies in a new product category.*

*Product pioneer - the first firm to develop a working model or sample in a new product category.*

*Market pioneer - the first firm to sell in a new product category. (Golder & Tellis 1993, p. 159)*

Kerin et al (1992) introduce the notion that first-mover advantages can be achieved via new processes and/or new markets. Most often, first-movers are associated with new products. Pioneering advantages can be won through process innovation and new market generation. Golder & Tellis (1993) capture the distinction between idea generation, prototype production and market penetration. In most instances, market pioneers will be remembered as the “inventor”, but this may not be the case.

A crucial factor in discussing first-mover advantages is addressed when looking at the degree of novelty of a new idea. Radical change versus incremental change and disruptive innovation versus dynamically continuous innovations (Cooper 2000) are terms applied in such a discussion. The disadvantage of engaging in a discussion on first-mover advantages using this terminology is that there is an element of intangibility. It is simply too difficult to make this terminology operational.

Through these statements, the problem of defining a first-mover becomes apparent – who was first, and with what? To sum the three definitions, a first-mover is one that earns positive rents from early entry. Early entry can be as an inventor of an idea, producer of a

prototype or the organisation leading the market introduction. Rents can be earned at all three stages, and individual success is not determined by market introduction alone. Lastly, the object of novelty to be introduced may encompass more than a new product. It can be a new process, or the creation of a new market such as the new market of grocery e-commerce.

### **3. THE CONCEPT OF FMA**

The concept of FMA was broadly recognised with the seminal article by Lieberman & Montgomery in 1988. The FMA concept has been widely discussed since before the 1988 article and is still debated today however. This section seeks to briefly outline the history, nature and extent of explicitly addressing the sustainability of advantages as scholars have treated the concept over time.

As early as in 1956, Bain argued that pioneering brands were able to build advantages via consumer awareness. Bain argued that early entry resulted in early preference, and promotional advantages that competitors could not overcome without massive investments in marketing and/or critical cost reductions. Mansfield et al (1981) examined the cost of imitation and patenting, thus addressing sustainability of advantages implicitly. In 1985, Mansfield performed a second study on the phenomenon of technological diffusion. He found that imitation cost on average was 65% of innovation cost, leaving the time lag from pioneer to followers pivotal for success of the first-mover.

Between the two studies lead by Mansfield, several other authors contributed to the understanding of first-moving. Lippman & Rumelt (1982) examine pre-emptive innovation hereby introducing the term uncertain imitability, addressing the notion that imitation can be more difficult than purely copying a product or process. The term *causal ambiguity* denotes this phenomenon, which is critical in a discussion on sustainability of advantages. Schmalensee (1982) looks at buyer uncertainty and preference asymmetry in the context of product differentiation as a function of entry time. Conrad (1983) focuses on imperfect information as a source for pricing advantages and market shares though pioneering while Smiley & Ravid (1983) points to cost advantages, pricing and demand elasticity caused by learning advantages as the key of pioneering advantages.

Robinson & Fornell (1985) and Robinson (1988) investigate the existence of pioneering advantages in the context of consumer and industrial goods, respectively. Ultimately

finding that pioneering advantages are more likely to occur within consumer goods industries. Consumer goods pioneering advantages being influenced by relative consumer information, marketing mix and relative direct cost. While the industrial goods industry was impacted by switching costs, marketing mix and direct costs. By looking at 82 brands across 24 product categories, Urban et al (1986) found that pioneering brands held advantages on account of order entry, market position, advertising expenditures and time lags between competitor entries. Also in 1986, Schnaars found both first-mover advantages and disadvantages by examining entry timing in growth markets. Mechanisms accounting for first-mover advantages were image, experience, brand loyalty and entry barrier erection while forces working against first-mover advantages ranged learning from mistakes, resolving early uncertainty, product enhancements and lower production costs. This study provided the first explicit account of mechanisms against pioneering advantages. Mary Lambkin published a study on 129 start-ups and 187 adolescent companies naming a multitude of mechanisms for FMA stemming from three sources; relationship to parent organisation, entry strategy and competitive strategy. Hereby explicitly acknowledging the overlap with existing business strategies.

In 1988, Lieberman & Montgomery published the first article treating FMA on a conceptual level, providing a framework for understanding the components and dynamics of FMA. The origins of first-mover advantages were categorised into three main groups: technological leadership, pre-emption of assets and buyers' switching costs and uncertainty (Lieberman & Montgomery 1988). A second important feature of this article was the grouping of second-mover advantages; free-riding, resolution of technological and market uncertainties, shifts in technology and customer needs and finally inertia by the incumbent. Kerin et al. (1992) provide a new model for a conceptual understanding of FMA encompassing both the strategic choices of first-movers and later entrants, later entrants' advantages as well as identifying four factors of FMA: economic, pre-emptive, technological and behavioural. Also in 1993, Patterson addresses the strategic nature of FMA, building on the preservation of advantages via the creation of strategic barriers. Here, a taxonomy of strategic emulation barriers supporting first-mover strategy is provided. Gilbert & Birnbaum-More (1996) elaborate on the notion of strategic application of timing strategies. This work yields a model to evaluate the advantages of being first or second to enter a new market.

Kardes & Kalyanaram (1992) investigated order entry effects on consumer memory and consumer judgement, stressing the potential for FMA within consumer goods. As a spin on the consumer aspect, Mahajan et al (1993) found branding and product life cycles at the heart of their study within instant photography. More recently, Lopez & Roberts (2002) examined entry timing in regimes of weak appropriability, Shamsie et al (2004) market share versus survival rate and Carow et al (2004) proprietary technology as a source of pioneering advantages among 1042 manufacturing companies.

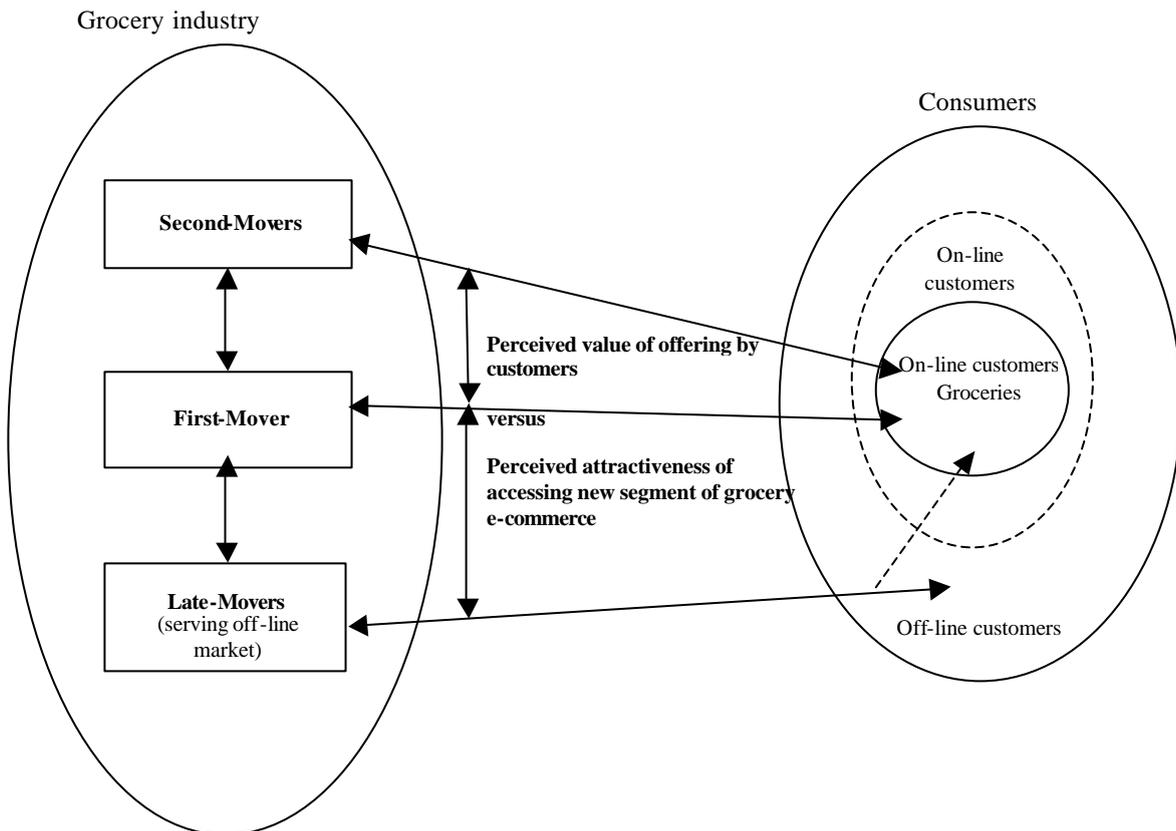
First-mover advantages do exist – there are gains to be won from acting entrepreneurial. However these advantages do not come automatically. Any advantages that can be identified from acting entrepreneurial, as a first-mover should be considered on what premise they are achieved and how fast competitors can catch up. Sustainability in the context of FMA is dealt with – implicitly. The entire concept is built on the balance of exploiting first-mover advantages and avoiding the pitfalls of competitors harvesting second-mover advantages. Essentially, this balance concerns durability of advantages. The problem with this approach in relation to durability is the lack of means to assessing the durability. We are given a frame of reference and a terminology to describe the durability, but no real means of assessing it, and therefore no means of understanding why firms would or would not embark on a new business venture. This applies to both the conceptual work of Lieberman & Montgomery (1988) and the application oriented (decision support) work of Gilbert & Birnbaum-More (1996). To extract any real value from the concept of FMA, we need to develop a model to assess the durability of first-mover advantages.

### **3.1. FMA in the context of the grocery e-commerce**

Studies show that consumers in Denmark are reluctant to pay a delivery fee for grocery goods, shopping is considered a social activity by many and reservations towards shop employees picking the best quality exist to name a few consumers related barriers (Friese et al 2003). From a firm-centric and industry perspective, barriers are just as plentiful. Operational costs to name just the most apparent one. Uncertainty about online shopping behaviour (risk of losing 40% sales revenue from impulse purchasing), risk of cannibalisation of physical outlets, investments in buyer education and security of transactions etc. are just a few of the elements influencing the retailer's situation (Kornum & Bjerre 2005).

Despite the staggering odds of overcoming these obstacles, attempts have been made to enter the e-commerce channel. In Denmark, these attempts have been most frequent in the specialty segment of the grocery industry. Early mainstream attempts failed and are only now beginning to move tentatively forward. Below illustration depicts the situation of acquiring first-mover advantages from grocery e-commerce in Denmark.

**Figure 1 – Roles and positions in grocery e-commerce**



Source: Own illustration

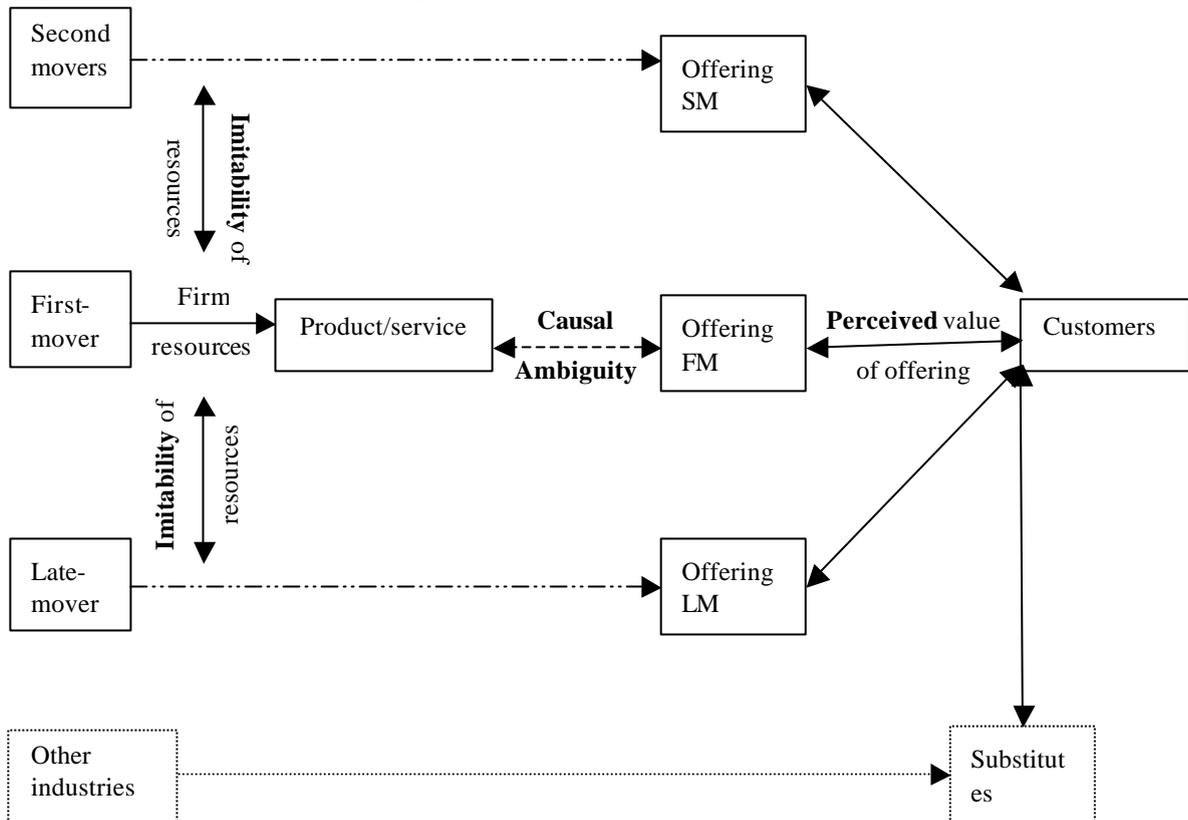
This figure illustrates the implications on an industry level from pioneering, following or waiting out the development of the new market of e-groceries. The strategic implications of each individual organisation can be far-reaching in a fiercely competitive industry such as the grocery industry. Therefore, it is pivotal to understand the situation; both of one's own company and the possibilities of developing a new market, requiring extensive resources. Also, it is necessary to understand the implications by and for competitors – what do they stand to gain, can they be caught in time or do they have the strength to catch up? Finally, the market itself needs to be understood. Is it mature; is there a critical mass to secure positive rents within a reasonable timeframe? How large is the new market and can a single actor broaden it? In essence, we need to understand the relative attraction of the

market by the first-mover, and of the relative attraction of the first-mover by the market. If an attractive market is feasible, then we must understand the mechanisms proposed to secure a position long enough to break-even and preferably to generate positive rents.

## 4. ASSESSING FIRST-MOVER ADVANTAGES

In order to understand the influence of durability of advantages on the FMA concept, the dynamics or causalities in offering a new product or service must be explained. To be successful in servicing a new market two aspect need to be fulfilled; customers in sufficient numbers must value the new offering and temporal barriers must exist to prevent potential competitors from duplicating the offering. An illustration hereof can be seen below.

**Figure 2 - Causality of moving first**



Source: Own illustration

A critical element contained in above model is *causal ambiguity* between a product or service and the offering that consumers ultimately judge. This distinction is crucial because of the two prerequisites mentioned for successful pioneering of a new market; consumers valuing the offering and temporal barriers. When investigating durability of advantages,

both need to be accounted for as the new offering needs to be perceived as valuable in order to generate rents. An early problem encountered by e-grocers, was number of customers. As the market has developed, critical mass is reached and rents can be earned. Now, the perceived value of the offering by the single e-grocer needs to be distinct from others to attract or retain consumers. Multiple seemingly similar offerings that consumers cannot differentiate between will decrease the durability of (first-mover) advantages. Likewise, if a new market has proven profitable, temporal barriers need to be in place to prevent the erosion of resources applied in producing the product/service. Durability is therefore a function of both the imitability of resource constellations applied to produce a product or service as well as the perceived value of a specific offering.

Arguing that durability of advantages (effectively addressing competitive advantages) stem from both the relative number of alternate choices (externally derived), and from resources applied in the production (internally derived) is rare - not because of the individual external and internal view, but because of the combination of them. When discussing competitive advantages, research often subscribes to one particular line of reasoning for the existence of such advantages. Very often this choice stands between a model based on the resources found within a firm, or on a model that builds on the external environment of a firm. Adopting a view solely concentrated on either the internal or external view would be inappropriately limiting in the context of first-mover advantages. A first-mover is dependent on the procurement of an innovative idea and the acceptance by the market hereof. Thus implying that the external environment (consumer's perception of alternatives) and the internal functionalities (resources applied in the production) play an equally significant role in the analysis of durability of first-mover advantages.

From an analytical perspective, the model indicates that the process of dissecting durability lies in analysing consumer perceptions, and then proceeding to the resource-constellations underlying the production of these value propositions. It is necessary to have an indication of which elements in an organisation to analyse in order to keep the internal analysis on a manageable level. This means asking consumers about the perceived value of the offerings in the market. A single consumer when dealing with a consumer-market problem may not be significant. Exposing the potential in different segments and quantities does however. It is therefore necessary to identify relevant segments and placing each customer in these segments. With these insights, the dependence analysis can then be performed on both the focal firm and the market to construct the indicated value and also on the competitive

environment to determine the imitability of those resources producing different offerings for the market. This implies an investigation of the value proposition as indicated by the consumers as well as the underlying resource-constellations. Both the value proposition and the resources hereto should, in order to yield a representative picture, be reflected on by both the focal firm as well as the later-movers and potential competitors with substitute product offerings. Performing these two analyses will yield an answer about the durability of advantages gained by the first-mover.

The Resource-Based View of the firm (RBV) and Resource Dependence Theory (RDT) will provide the models to analyse the perceived value of offerings by consumer and imitability of resource-constellation by competitors. Barney (1997) provides a framework for the internal resource-constellation and the imitability hereof by competitors via the VRIO model. Pfeffer & Salancik (1978) on the other hand support a model of relative dependence to understand the possible durability of advantages in a relationship. Treating the relationship between the first-mover and the consumers on a dyadic level provides an effective tool to understand how this can result in durable competitive advantages.

The VRIO model examines the competitive implications of resources by analysing each resource, capability or core competence on four variables: Value, Rareness, Imitability and Organisation (to be exploited). The components can be seen below.

**Figure 3 – Assessing competitive impact of resources**

The question of VALUE	The question of RARENESS	The question of IMITABILITY	The question of ORGANISATION
<p>Question needed to conduct analysis on <b>value</b>:</p> <p>Do firm's resources and capabilities enable the firm to respond to environmental threats or opportunities?</p>	<p>Question needed to conduct analysis on <b>rareness</b>:</p> <p>How many competing firms already possess particular valuable resources or capabilities?</p>	<p>Question needed to conduct analysis on <b>imitability</b>:</p> <p>Do firms without a resource or capability face a cost disadvantage in obtaining it compared to firms that already possess it?</p>	<p>Question needed to conduct analysis on <b>organisation</b>:</p> <p>Is a firm organised to exploit the full competitive potential of its resources and capabilities?</p>

Source: Own illustration after Barney (1997)

A precondition of gaining competitive advantages from any kind of network or relationship is power. Mutual dependence and power in a cooperative relationship are determined via the control over resources (Weber 2002; Gelderman & van Weele 1999). Applying this

approach to the subject of evaluating the durability of advantages in a firm external perspective provides the tool necessary to supplement the VRIO analysis for the firm internal perspective. Gelderman & van Weele (1999) present a model on the situation of dependence. The relative dependence between two actors determines the relative power. As both parties in a relationship must be assumed to draw a benefit, a mutual dependence must exist. This dependence is described as the net dependence of each actor. Pfeffer & Salancik (1978) and Emerson (1962) propose that the relative power position between two actors is determined via three variables – importance of resources, scarcity of resources, and discretion over resource allocation and use.

**Figure 4 – Assessing perceived value of resources**

Importance of resources	Scarcity of resources	Discretion over resources allocation and use
<b>Measured on:</b> Relative magnitude of resource Criticality of the resource	<b>Measured on:</b> Concentration of resources Relative number of alternatives	<b>Measured on:</b> Ownership Access External use

Source: Own illustration after Pfeffer & Salancik (1978)

As explained, the intent of this framework is to perform the analysis on consumer perception firstly. The implication hereof is that by looking at perceived output through offerings, the factors that go into the creation of advantages are already *explored*. Implicitly these need to be *organised* by the firm to be exploited – otherwise there would be no effect to observe. I will be applying a modified model – Value, Rareness and Imitability – for the sake of my study on the imitability of resource constellations causing advantages. Modifications are also applied to the RDT analysis. The perceived value is analysed on the Importance, Scarcity and Discretion over resource allocation and use. While Importance (relative magnitude and criticality) and Scarcity (concentration of resources and relative number of alternatives) impact the dependence between the firm and the customers, Discretion (ownership, access and external use) does not influence this relationship. The reason is found in the buyer/seller relationship of the context. Ownership is changing for the purpose of *access*. Discretion in this study is not a relevant factor and I will be applying a modified model consisting of Importance and Scarcity.

Semantically, the elements found within RDT are closely linked to that applied within the RBV theory. The all-important distinction lays in the context in which it is applied – on firm internal resources versus the perceived value of an offering in the external environment. I argue that the VRI(O) model (Figure 3) is crucial in identifying how fast competitors can copy the elements of a given offering. It cannot however, evaluate the *perceived* value of a firms offering in the market. Causal ambiguity or the chance hereof denies the theoretical possibility of using just one of the two approaches. The VRI(O) analysis does not under the assumption of causal ambiguity allow for the estimation of the end effect (offering) of resources that create value in the market. Also, RDT does not necessarily reflect the ease with which competitors could imitate a given valuable offering.

Looking beyond semantics it is relevant to examine how the two approaches differ and are comparable. To do so, it is necessary to revisit the variables.

**Figure 5 – Modified variables for analysis**

<b>Imitability of resources</b>	<b>Perceived value of offering</b>		
Valuable	Important	Attractiveness	Durability
Rare	Scarce		
Imitable			

Source: Own illustration

Barney (1997) links the questions of *value* to the capability of resources to the internal analysis of strengths and weaknesses and the external analysis of opportunities and threats. Resources are hereby valuable if they harness strengths, eliminate weaknesses, support opportunities and prevent threats. More specifically, resources need to either reduce a firm's costs, or increase its revenue compared to a situation where the firm did not possess these resources. Rareness is dealt with in terms of its relative existence measured in the potential to generate competitive advantages. If a valuable resource is not rare, then this can never be more than a competitive parity. Valuable and rare resources however can result in a temporary competitive advantage.

Imitability is dealt with in an economic sense, i.e. what would the cost of acquiring the resources be, if not possessed already? This notion is build on the concept of *strategic factor markets* where resources can be acquired, and relevant is the relationship between

the cost of the resources, and the returns to a strategy once implemented (Barney 1991). If the cost of acquiring these resources to competitors, then the imitability is low and these resources can become no more than a source of competitive parity. However, cost of duplication can vary and sustained competitive advantages can stem from such resources given four special conditions. *Unique historical conditions* are the first of these conditions. First-mover advantages and path dependence are the sources of unique historical conditions. Secondly, *causal ambiguity* explains the lack of understanding between resources and competitive advantages. *Social complexity* including relations between managers, firm culture, firm's reputation among suppliers and consumers is the third condition for costly imitability. Lastly, *patents* are mentioned as a condition. Patents are only a source of sustained competitive advantage in some industries and may even ease imitation in other industries (Barney 1997).

The concept of strategic factor markets and the costliness in acquisition of resources has been contested by Dierickx & Cool (1989) arguing for the existence of *non-tradeable assets*. Non-tradeable assets are accumulated over time in asset stocks that cannot "simply" be acquired in a market. The argument is that factor markets are not imperfect but rather incomplete, thus implying that certain asset stocks cannot be bought freely but must be built over time. The point here is to demonstrate both the elements contained in imitability and to show the difficulty in determining the exact nature of imitability. With the insights from Barney (1997) and Dierickx & Cool (1989), this element and especially the complexity hereof are analysed.

Relative magnitude and criticality of a resource determines the *importance* hereof, according to Pfeffer & Salancik (1978). These two variables are not completely inseparable. The *relative magnitude* of an exchange is assessed via the proportion of total inputs, or the proportion of total outputs entailed in the exchange. Dependence, in other words, increases towards consumers as the number of output(s) is low or one primary input to operations is critical. *Criticality* is more intangible by nature and describes the degree to which an organisation can continue functioning in the absence of an input resource, or absence of an output market. *Scarcity* is related to *concentration*. In other words, it is important whether many or few actors possess the resources that are perceived as being valuable. It becomes pivotal whether the focal firm has access to this resource. Sanctions become an issue here. As the *relative number of alternative* firms, their size and importance in the industry influences the scarcity of resources. Freely opting to source a

resource from an alternative firm can be restricted, because of these factors. Fear of retaliation by a powerful actor can lock other firms into a relationship.

In applying the knowledge of firm internal resource constellations, and the impact on imitability of resources by competitors from RBV with the relational focused knowledge of RDT, we find a tool to dissect the complexity of sustainability of first-mover advantages. The fundamental premise being that the dependence between the perceived values of respective offerings will determine the worth of a new market, as well as the worth of a single offering by a firm. If a relative and mutual attraction should exist, value, rareness and imitability of the resources acquired to produce a given offering, will determine the overall sustainability of this offering in the market.

## **5. CONCLUSION**

How do we begin to understand the dynamics and complexity of grocery e-commerce? I suggest the concept of First-Mover Advantage. Here, we find a framework that can encompass the dynamics such as market maturity, consumer acceptance of new ideas, evaluation of consumers hereof compared to existing alternatives, sources of advantages from pioneering a new market (and implicitly recognised, the disadvantages or reasons to wait), and a terminology to understand why different firms have different potential gains and losses – to name a few. In essence, FMA provides a concept to understand the state of grocery e-commerce, as we know it today. Well, almost – we can understand that competitors perceive the advantages won by pioneers to be less attractive or easily eroded because of second-mover advantages. That is, we know which mechanisms second-movers seek to exploit to catch up. We do not have a scientific tool to dissect their perception. Are the initial advantages of initiating grocery e-commerce really that easily eroded?

The FMA concept offers little insights into this question. The literature on FMA and related issues has become comprehensive over time. A crucial bridge still needs to be built for a comprehensive understanding of timing advantages – sustainability of first-mover advantages. FMA have been the target of investigation in relation to different industries (consumer and industrial alike), qualitative and quantitative studies, conceptual frameworks have been suggested, FMA in connection with specific events or mechanisms (innovation, pricing, marketing mix, path dependence etc.) and many other instances. Although the bulk of these studies suggest a picture of how sustainability relates to FMA,

there is no explicit comprehension or model to understand the interrelationship between the two phenomenons.

I suggest a combination of two approaches to analyse sustainability. Firstly, we need to understand how the new market will perceive the value proposition of a new offering in the market. This will be a relative judgement of the suggested value of the new offering compared to alternatives. I propose applying Resource Dependence Theory to uncover this element. If a new idea is accepted by the market (critical amount of customers adopt this new idea), then imitability of the resource constellations producing the new offering need to be understood. The second component in an analysis of sustainability of first-mover advantages therefore needs to entail a tool to evaluate imitability of resources. The Resource-Based View of the firm deals explicitly with this element. As causal ambiguity dictates, that there is no natural relation between resource constellations and offerings, both analysis need to be performed to understand the complexity of the situation. From a managerial perspective it is therefore not sufficient to look at firm internal resources or market position alone – both need to be addressed in combination.

It should be stressed, that the success or failure of a new idea cannot be foreseen. We can however, apply models to approximate an understanding hereof – and also apply it retrospectively to understand the evolution of a new market. Such as it is suggested on the grocery industry and its response to e-commerce. Applying this analysis in Denmark is especially interesting as the maturity of grocery e-commerce is still developing – and still does not include any of the major actors of the industry. There are a number of conditions in the Danish market that suggest caution when dealing with grocery e-commerce. Left unattended, the new market is being dictated by specialty grocers – determining the standards for later followers and gaining market shares on specialty segments that allow higher margins. The proposed framework can suggest whether the wait-and-see strategy of the major actors leaves the new e-grocers to determine the shape of the battlefield and positioning themselves on the lucrative segments that allow operational profitability.

When the movie “Blade Runner” was released in 1982, the producers chose 10 multinational corporations (Pan Am and Atari among others) to be featured in the movie to create a realistic picture of society in 2019. The companies were chosen, because they most realistically would still exist nearly 40 years later. Of the 10 companies believed to survive into the 21<sup>st</sup> century, only Coca-Cola has existed continuously until today. Regardless of

the nature of a business idea, nothing is everlasting and advantages gained by pioneering need to be supplemented to secure longevity.

## REFERENCES

- Bain, J. S. (1956), *Barriers to new competition*, Harvard University Press, Cambridge.
- Barney, J. B. (1991), "Firm resources and sustained competitive advantage", *Journal of Management*, Vol 17 No 1, pp. 99-120.
- Barney, J. B. (1997), *Gaining and sustaining competitive advantage*, Addison-Wesley Publishing, Ontario.
- Carow, K.; R. Heron and T. Saxton (2004), "Do early birds get the returns? An empirical investigation of early-mover advantages in acquisitions", *Strategic Management Journal*, Vol 25 No 6, pp. 563-585.
- Conrad, C. A. (1983), "The advantage of being first and competition between firms", *International Journal of Industrial Organization*, Vol 1 No 4, pp. 353-364.
- Cooper, L. G. (2000), "Strategic marketing planning for radical new products", *Journal of Marketing*, Vol 64 No 1, pp. 1-16.
- Dierickx, I. and K. Cool (1989), "Asset stock accumulation and sustainability of competitive advantage", *Management Science*, Vol 35 No 12, pp. 1504-1511.
- Emerson, R. M. (1962), "Power-Dependence Relations", *American Sociological Review*, Vol 27 No1, pp. 31-41.
- Friese, S.; M. Bjerre; T. Hansen; N. Kornum and C. Sestoft (2003), *E-Bizz Øresund Report - Barriers and Motivators of Online Grocers Shopping in Denmark*, Research Report January 2003, Copenhagen Business School - Department of Marketing, Copenhagen.
- Gelderman, K. and A. van Weele (1999), *New perspectives on Kraljic's purchasing portfolio approach*, Paper presented at the 9<sup>th</sup> International Annual IPSERA Conference.
- Gilbert, J. and P. H. Birnbaum-More (1996), "Innovation timing advantages: From economic theory to strategic application", *Journal of Engineering and Technology Management*, Vol 12 No 4, pp. 245-266.
- Golder, P. N. and G. J. Tellis (1993), "Pioneering advantage: Marketing logic or marketing legend?", *Journal of Marketing Research*, Vol 30 No 2, pp. 158-170.
- Johnsson, M. and N. Kornum (2001), *Designing Distribution Systems for Consumer Related E-Commerce*, Paper presented at the 13<sup>th</sup> NOFOMA Conference, Iceland.
- Kardes, F. R. and G. Kalyanaram (1992), "Order-of-entry effects on consumer memory and judgment: An information integration perspective", *Journal of Marketing Research*, Vol 29 No 3, pp. 343-357.
- Kerin, R. A.; P. R. Varadarajan and R. A. Peterson (1992), "First-mover advantage: A synthesis, conceptual framework, and research proposition", *Journal of Marketing*, Vol 56 No 4, pp. 33-52.
- Kornum, N.; M. Bjerre and R. Langberg (1999), *Elektronisk handel - udfordringer for logistik og distribution. [E-commerce - Challenges for logistics and distribution]*, Forskningsministeriet og Foreningen af Dansk Internet Handel, København.
- Kornum, N. (2002), *Characteristics and Development of Store Based - and Specialty E-Grocer*, Paper presented at the 14<sup>th</sup> NOFOMA Conference, Trondheim.
- Kornum, N. and M. Bjerre (2005), *Grocery E-Commerce: Consumer behaviour and business strategies*, Edward Elgar Publishing Limited, Cheltenham. (Forthcoming).

- Lambkin, M. (1988), "Order entry and performance in new markets", *Strategic Management Journal*. Vol 9 (Special Issue: Strategy Content Research), pp. 127-140.
- Lieberman, M. B. and D. B. Montgomery (1988), "First-Mover Advantages", *Strategic Management Journal*. Vol 9 (Special Issue: Strategy Content Research), pp. 41-58.
- Lippman, S. A. and R. P. Rumelt (1982), "Uncertain imitability: An analysis of interfirm differences in efficiency under competition", *Bell Journal of Economics*, Vol 13 No 2, pp. 111-118.
- López, L. E. and E. B. Roberts (2002), "First-mover advantages in regimes of weak appropriability: The case of financial services innovations", *Journal of Business Research*, Vol 55 No 12, pp. 997-1005.
- Mahajan, V.; S. Sharma and R. D. Buzzell (1993), "Assessing the impact of competitive entry on market expansion and incumbent sales", *Journal of Marketing*, Vol 57 No 3, pp. 39-52.
- Mansfield, E.; M. Schwartz and S. Wagner (1981), "Imitation costs and patents: An empirical study", *Economic Journal*, Vol 91 No 364, pp. 907-918.
- Mansfield, E. (1985), "How rapidly does new industrial technology leak out?", *Journal of Industrial Economics*, Vol 34 No 2, pp. 217-223.
- Patterson, W. C. (1993), "First-Mover Advantage: The opportunity curve", *Journal of Management Studies*, Vol 30 No 5, pp. 759-777.
- Pfeffer, J. and G. R. Salancik (1978), *External Control of Organizations. A Resource Dependence Perspective*, Harper & Row Publishers, London.
- Robinson, W. T. and C. Fornell (1985), "Sources of market pioneer advantages in consumer goods industries", *Journal of Marketing Research*, Vol 22 No 3, pp. 305-317.
- Robinson, W. T. (1988), "Sources of market pioneer advantages: The case of industrial goods industries", *Journal of Marketing Research*. Vol 25 No 1, pp. 87-94.
- Schmalensee, R. (1982), "Product differentiation advantages of pioneering brands", *American Economic Review*, Vol 72 No 3, pp. 349-365.
- Schnaars, S. P. (1986), "When entering growth markets, are pioneers better than poachers?", *Business Horizons*, Vol 29 No 2, pp. 27-36.
- Shamsie, J.; C. Phelps and J. Kuperman (2004), "Better late than never: A study of late entrants in household electrical equipment", *Strategic Management Journal*, Vol 25 No 1, pp. 69-84.
- Smiley, R. H. and S. A. Ravid (1983), "The importance of being first: Learning price and strategy", *The Quarterly Journal of Economics*, Vol 98 No 2, pp. 353-362.
- Urban, G. L.; T. Carter; S. Gaskin and Z. Mucha (1986), "Market share rewards to pioneering brands: An empirical analysis and strategic implications", *Management Science*, Vol 32 No 6, pp. 645-659.
- Weber, O. J. (2002), *Resource Dependency as Barrier or Driving Force for Grocery BtC e-commerce and Subsequent Changes in the Supply Chain*, Paper presented at the 14<sup>th</sup> NOFOMA Conference, Trondheim.