Understanding the Micro-Foundations of Dynamic Capabilities: Managing Attention, Cognitive Dissonance and Competing Objectives at Different Hierarchical Levels

Bart Clarysse
Imperial College Business School
London, U.K.

Johan Bruneel
Imperial College Business School
London, UK

Robin De Cock
Imperial College Business School
London, UK

Keywords: dynamic capabilities; attentions; cognitions; competing objectives; micro-foundations

1 Correspondence to: Bart Clarysse, Imperial College Business School, South Kensington, London, SW7 2AZ, U.K. E-mail: b.clarysse@imperial.ac.uk
Understanding the Micro-Foundations of Dynamic Capabilities: Managing Attention, Cognitive Dissonance and Competing Objectives at Different Hierarchical Levels

ABSTRACT

The dynamic capability view remains silent when it comes to the origins of and the micro-processes behind the development of these capabilities. We analyze how dynamic capabilities are developed over time in a new venture which was confronted with a significant change in its environment. We used an inductive case-study design, collecting data through participant observation over a four-year period. We complemented this data with content analysis of email correspondence and analysis of board documents, meeting minutes and different versions of the business plan. We show that the building blocks of dynamic capabilities exist of the (a) company’s ability to manage attention across different levels of the hierarchy to create perception of the changes in the environment through a process of issue selling, (b) the level to which it succeeds to overcome different levels of cognitive dissonance among its individual decisions makers to create willingness through collective sense making and (c) the company’s capacity to manage competing objectives to enable the change implementation process through the integrating efficiency and flexibility as a duality. We thus extend the dynamic capability perspective by describing the micro-processes behind it and embedding them within the attention-based view, cognitive-dissonance theory and the literature on competing objectives.
INTRODUCTION

For more than a decade, dynamic capabilities have attracted considerable attention within the strategic management literature to explain how firms can create a competitive advantage in dynamic, moderately dynamic and even static environments (Eisenhardt and Martin, 2000; Helfat and Peteraf, 2003; Zahra, Sapienza, and Davidsson, 2006; Teece, 2007; Barreto, 2010; Helfat and Winter, 2011). Dynamic capabilities give a firm the ability to change its resource configuration, with respect to both tangible and intangible resources (Zollo and Winter, 2002; Teece, 2007; Helfat and Winter, 2011). Initially the extant literature considered dynamic capabilities to be routines that develop over time (Eisenhardt and Martin, 2000; Zollo and Winter, 2002). However, more recently scholars have defined dynamic capabilities as a managerial process (Teece, Pisano and Schuen, 1997; Zahra et al., 2006; Teece, 2007) which enables a firm to become aware of or sense opportunities/threats, seize or act upon these opportunities/threats and restructure the firm’s resource configuration. While the management view on dynamic capabilities helps in explaining what the different stages of dynamic capability development are in a managerial process, it remains silent on the question of how these dynamic capabilities are developed. In line with this observation, Danneels (2010) calls for a process view to open the black box of dynamic capability theory, allowing us to examine the origins and the paths of dynamic capability development. This is exactly the research gap we aim to address in this paper.

To provide more theoretically grounded insights into the development of these dynamic capabilities, we use the extended case method (Burawoy, 1991; Tripsas and Gavetti, 2000; Danneels, 2010). We start with the existing literature on the micro-foundations of dynamic capabilities, which alludes to the role of cognition and the way in which cognition might differ across the hierarchy of decision makers. Managerial cognition is relevant in the early
stages of capability formation (Helfat and Peteraf, 2003; Adner and Helfat, 2003; Autio, George and Alexi, 2011) and plays a role across the hierarchical levels of the firm (Gavetti, 2005; Danneels, 2010). The rich literature on managerial cognition emphasizes the role of cognitive processes and sense-making of perceived environmental opportunities/threats as a key regulator of actions which lead to capability development (Barr, Stimpert and Huff, 1992). However, whereas managerial cognition has usually been studied as a guide for change processes induced by top management teams (e.g. Tripsas and Gavetti, 2000); Gavetti (2005) introduces the concept of situational attention in the capability literature. He argues that the higher the decision maker is situated in the hierarchy the more distant he/she is from the firm’s actions, and thus the more difficult it is for him/her to interpret organizational experiences which create biases in the actions taken. Danneels (2010) further extends this view by showing that resource cognition, i.e. the identification of key resources in a firm and the understanding of their fungibility, differs across the various hierarchical levels of a company. Building on these insights, we analyze the managerial process of dynamic capability development across the different hierarchical layers in a company to address our research question on how dynamic capabilities are developed in firm.

We use the empirical context of a venture-capital-backed new venture in the mobile internet industry WeMobile, following it from its inception in February 2006 to its liquidation in December 2010. The relevant period of observation to study the genesis of dynamic capabilities and their formation over time starts with the underwriting of a specific business plan and the term sheet agreement between the founders and the A-round investors in November 2008. From then on routines and procedures are developed to increase the company’s efficiency and effectiveness in pursuing the milestones associated with the business model all the stakeholders did agree upon. Hence, dynamic capabilities needed to be
developed to make changes to the business model. The importance of developing dynamic capabilities to change the original business model has been documented in business books describing the success of young ventures. For instance, Symantec started as an artificial intelligence company before changing into a linguistics platform and later into the anti-virus software firm, which we all know today (Dorf and Byers, 2008), while Google began as a library reference search tool before changing its business model into an OEM internet search product and eventually developing AdSense as a new revenue tool (Vise and Malseed, 2006).

The choice of a venture rather than an established company is based upon the fact that this venture has no established routines yet, so it is easy to disentangle managerial processes from learning-based outcomes. The entrepreneurial start-up phase of the company was extremely successful and attracted the attention of venture capitalists, resulting in an A-round of venture capital of 4 Million Euros for which the term sheet was signed in November 2007. From then on, the firm’s resource configuration was shaped around a high-end, powerful technological solution to transform websites into mobile sites. Critical to this configuration was the development of a key account management model to approach customers. Shortly after the venture capital investment, the launch of the App Store by Apple changed the environment radically, and forced the company to focus on a different customer segment by offering a user-centric web development tool. The introduction of the App Store is the kind of environmental jolt that typically places firms in jeopardy because it is difficult to foresee and its impact on other firms is disruptive and inimical (Meyer, 1982). In our case study, WeMobile failed to change its resources and associated business model accordingly in response to this jolt. The initial success and ultimate failure of the company make it an excellent study object: as Williamson (1999: 1093) stated ”More informative, often, than success stories are stories about failure—especially the failures of once successful enterprises to adapt to new circumstances” (see also Priem and Butler, 2001; Danneels, 2010).
We put forward three main findings. First, dynamic capabilities will only be developed at firm level if at each hierarchal level in the organization the need for change is “perceived” as an opportunity. Since not every decision maker in the organization has the same focus of attention, this opportunity perception process needs to be managed. This can be realized by managing the attention of the different decision makers using elements of issue selling such as “objectivation of data”, “direct modes of communication” and “communication persistence”. Second, individual cognitive dissonances at each of these levels do create rigidities which limit the willingness which individual decision makers to change. Decision makers will tend to minimize the needed changes, look for solutions they are familiar with or simply ignore the need for change. Elements from the literature on prospective collective sense making can be used to overcome these barriers. Material artifacts can be used to stimulate collective sense making together with more general KPIs and the use of reference cases or best practices. Third, to implement changes, the organization will need to cope with competing objectives as a way to finalize the implementation of dynamic capabilities. On the one hand they need to create evidence for the new business model, while on the other hand they need to match the milestones of the old one. We suggest that these competing objectives can be managed by viewing flexibility and efficiency as a duality both at individual and systems level. This implies that a context is created to stimulate individual ambidexterity, that redundancy and cognitive variation are built into the system and that management practices such as flexibility inducing mechanisms are adopted to implement the change effectively. This paper extends the literature on dynamic capabilities by introducing three theoretical perspectives which what the barriers are to introduce dynamic capabilities as a management process and what the solutions might be to overcome these barriers.
The remainder of the paper is organized as follows: first, we outline our methodological approach which includes the data collection and data analysis procedures. We then describe how We Mobile tried to change from one resource configuration and associated business model to another one, focusing on how, at different levels of the organization—namely the operational, the management, the board and the investment committee level—the new environment was sensed, the willingness to change was created and decisions were made or not made to implement the new configuration and business model. Third, we present the findings of our study. Finally, we conclude with a discussion of our key findings.

METHOD

This research is based on an in-depth, longitudinal case study of a new venture in the emerging mobile internet industry. Given the lack of theory on how dynamic capabilities are developed in a company (Sirmon, Hitt, Ireland and Gilbert, 2011), we argue that this approach is most useful (Eisenhardt and Graebner, 2007). In addition, by taking a longitudinal process perspective we gain insight into which decisions have to be made at different hierarchical levels and which actions need to be taken to bridge cognitive gaps and evolve from one resource configuration and associated business model to another one. Finally, our case study design allows us to use a combination of different data sources, including (1) participant observation, (2) company archives and (3) publicly available data (Yin, 1994). We take care of potential problems of construct validity by using multiple sources of evidence or multiple measures of the same facts (Yin, 1994). We Mobile is a particularly attractive case study because the company was extremely successful in its first two years after founding and succeeded in one of the largest A-round VC deals in Belgium, but then subsequently had to change its resource configuration as a response to environmental conditions, which had abruptly changed. It eventually failed because one of its investors did not support the new
business model. The success and subsequent failure of the case did make it an unusually rich source of data (Priem and Butler, 2001). The richness of the data allowed us to map We Mobile’s change process in detail and gain insights into the relationships between key decision makers, which are necessary to investigate the micro-foundations of the resource-structuring process in the start-up phase of a company’s life (Sirmon et al., 2011). Triangulation of various types of data, collected through different methods, can overcome the limitations of a single method by counter-balancing the weaknesses of one method with the strengths of another (Jick, 1979).

Data sources

An important data collection method was participant observation. One of the authors (principle investigator) of this study was able to attend the weekly management meetings of this venture, monthly board of directors and biweekly communication forums to the employees. We employed an insider-outsider approach, which means that two outside authors were involved in the actual analysis so that the credibility of the findings would not rely solely on the interpretations of a single analyst (Gioia, Price, Hamilton and Thomas, 2010). Instead of analyzing key people’s responses in interviews, the participant observation method captures managers in their corporeal reality, time, and space (Burawoy, 1991). The actual time of participant observation ranged from February 2006 (start-up) to June 2010 (liquidation), time spent averaged about 1 day per week. The time frame covered in this paper ranges from November 2008 (term sheet closure) to June 2010 (liquidation). We attended the weekly management meeting led by the CEO and participated in different informal events with the employees of We Mobile. In January 2009, We Mobile recruited a COO who decided to introduce a biweekly communication forum to the employees which we also attended. Finally, after finishing a successful venture capital series A round in March 2009,
a formal Board of Directors was installed and we participated in the monthly board meeting. Altogether, we attended 108 meetings which accounted for approximately 275 hours of observation. Regular written field notes provided a key resource to articulate the story and understand the linkages between facts during the period studied. The observation activities during the company’s meetings were crucial to provide us with a clear insight into what was perceived as relevant by the team, and gave us a better understanding of the relationships between the key decision makers.

The company archives include extensive documentation covering nearly every important document circulated during the company’s existence. First, we had access to the official reports of every board and management meeting. Secondly, we could review all the documents stored on the intranet server (dropbox) of the company. The “dropbox” was used by the management team, business developers, software engineers and other employees to “drop” important documents so that everyone can see or use these documents. Finally, the largest and most unique source of information is the e-mail account of one of the founders which enabled us to follow the complete e-mail communication between the Sales and Marketing director, CEO, COO, account managers, the chairman of the board, investors, key software engineers, (potential) clients and partners. Not only was the content of the e-mails taken into account, e-mail attachments were also analyzed. These attachments included different versions of the business plan, shareholder negotiations, marketing, product and technology roadmaps, and staffing plans. Finally, we collected publicly available data such as business press articles, press releases, elevator pitches and presentations at mobile internet conferences. This gave us a better view of how the firm presented itself towards important actors in its environment. An overview of the documentation in this case study is provided in table 1.
Data analysis

We used the extended case method to analyze empirical data gathered through the case in order to extend the existing dynamic capability theory (Burawoy, 1991; Danneels, 2002). Since the dynamic capability perspective already offers a rich variety of insights, and there have already been a number of scholars who have emphasized the importance of cognitions and hierarchy to understand the micro-foundations of dynamic capabilities (Barney et al., 2011), we did not want to start from scratch and develop a new theory but preferred instead to use the extended case method to stretch and consolidate the existing work on dynamic capabilities.

Following the extended case method approach, we started with a profound review of the dynamic capability literature. Next, we analyzed the field notes of the participant observation and the documents collected during this observation period. Content analyses of the e-mail account of the founders and secondary public data revealed new patterns on a micro level which directed us towards attention based theory (Ocasio, 1997), cognitive dissonance theory (Festinger, 1957) and theories on competing objectives (Eisenhardt, Furr and Bingham, 2010). Secondly, we collated additional data based on initial analyses of field notes, company archives and e-mails. These two “running exchanges,” between literature review and data analysis and between data analysis and data collation, (Burawoy 1991: 10–11) are further described below.

The first phase of the extended case study method involves the interplay of existing concepts/theories and analysis of empirical data. While this study started with an extensive review of
the dynamic capabilities literature, data analyses point to other relevant concepts and theories in the literature. These concepts and theories in turn provide conceptual frameworks which aid the interpretation of the data (Danneels, 2010). The participant observation notes and the documents collected during the observation period formed the basis for our first data analyses. Based on the board and management meeting reports and on field notes from the participant observation activities, we were able to reconstruct We Mobile’s story by mapping the most important resource-structuring events on various timelines (changes in recruitment, rounds of finance and technological choices). These initial analyses of archives and field notes revealed that the company was confronted with a radical change in its environment, soon after its VC-round. Because the VCs had invested in a particular business model and had put milestones on that business model, they managed the development of capabilities through the Board of Directors. However, at the same time, the company needed to develop capabilities to guide a change in business model in order to address the changes in the environment. We defined and described the business model and resource configuration based on the business plan that the venture capitalist originally signed up for and the various board reports in which the business model, recruitment and investment policy were discussed. The targeted business model and associated resource configuration were based upon the presentation made by the candidate-CEO in January 2010 and the business model / resource configuration of the company he referred to as the direct competitor and benchmark (Mobi). The need for a new model and changes in resource configuration directed us to the dynamic capabilities literature and more specifically the managerial view suggested by Teece (2007) and Zahra, Sapienza and Davidsson (2006) and provided us a framework to map these events on a timeline and categorize them into phases of perception, willingness to react and ability to act.

Since we wanted to gain insight into the micro-foundations of these dynamic capabilities,
which we define as the underlying individual-level and group-level actions which lead to
dynamic capabilities, defined as the capacity to change the company’s business model and
resource configuration, we had to investigate the relationships between the key decision
makers. The e-mail account of the founders revealed conversations between account
managers, software engineers, COO, CEO, the chairman of the board, investors and partners
(4622 e-mails spread over a period of 3 years). Two researchers who did not participate in the
meetings analyzed this e-mail correspondence and, after various iteration rounds, reduced the
list to the 235 most important e-mails that referred to the change in the environment and the
subsequent triggering of business model adaptation and associated resource configuration. We
mapped these e-mails on a timeline and used the QSR NVivo 2.0 software package to code
and analyze the content of these e-mails. The software program aided us in entering codes,
examining passages of text in which the codes appeared, and counting code frequency.
Analysis of the data collected via participant observation and the e-mail correspondence
helped us to formulate an insider view of decision processes and an inductive understanding
of actors’ perceptions and cognitive maps. These analyses revealed new issues and pointed
to relevant concepts and theories. Our study started with the dynamic capabilities literature
which, after comparison with the WeMobile case, led us to other literature about distinct
areas such as resource management (Sirmon et al., 2007), attention-based view (Ocasio,
1997), cognitive dissonance (Festinger, 1957), and the literature on competing objectives
(Eisenhardt, Furr and Bingham, 2010).

The second phase of research required us to continuously move back and forth between data
collection and analysis. The initial analyses through field notes and company archives, on the
one hand, and the content analyses of the e-mail correspondence on the other hand, not only
led us to other literature streams but also forced us to use already existing but unexplored
data sources of our huge data file. For example, in the course of this study, we were directed to the cognitive dissonance literature based on analysis of email discussions between the founders, senior managers, and account managers. After an extensive review of the cognitive dissonance literature, we found explanations for these behaviors at a micro level, which in turn had, according to other company archives, an impact on the events at the macro level. Finally, after the first data analyses, we started to discuss the results in interviews with key people. These were in-depth, semi-structured interviews taking average 1.5 hours each.

In order to organize and analyze our data, we used the QSR NVivo 2.0 software package on the one hand, to centralize and store our various data sources, and developed figures and tables on the other hand. For example, figure 1 gives a brief history of We Mobile. Furthermore, we developed table 2 to give an overview of the characteristics of the two business models and the resource configurations ideally associated with these business models. We explain the main features of the business models along the lines of Teece (2007) and their associated resource configurations divided into tangible, intangible and human resources (Helfat et al., 2007). In what follows, we give a brief history of We Mobile in a descriptive narrative, so that readers can experience these events vicariously and draw their own conclusions (Stake, 2005: 450). After that we present our findings and move on to the discussion and conclusion section.

**HISTORY OF WE MOBILE**

**February 2006 – November 2008: Entrepreneurial phase**

Figure 1 shows the history of WE MOBILE. The company agreed upon a term sheet with A-round investors on November 9th, 2008. Before that, the company was very much in an entrepreneurial phase during which it did not develop capabilities but did explore
the opportunity space (Zahra et al., 2006). The company experimented with open source technology components and had subsequently Business to Business, Business to Consumer and Business to Business to Consumer market approaches. As no clear underlying business model was available, no resources were bundled to optimize the pursuit of the business model and no capabilities were developed. This period is therefore not interesting for the purposes of this paper.

November 2008-March 2009 (Term sheet-Deal Closure: Business Model 1)

By the time the company was about to sign its terms sheet, it had developed a software platform which enables the user to make existing desktop websites mobile, add dynamic content such as Flash, and interactive transactions like payments and reservation systems. This platform had three key advantages over existing platforms: 1) the ability to deal with device diversity, 2) five to ten times faster content access time, and 3) user-friendly, interactive mobile sites. At the time, competitors had to adjust websites according to the specific type of mobile device. For example if a customer wanted its website to be optimally viewable on five types of mobile devices, competitors had to develop five different versions of that website. In contrast, WE MOBILE’s technology could transform desktop websites into mobile sites for any type of mobile device. In order to retain the maximum user-friendliness, the site automatically adapted to the specific features of the mobile device, whatever brand or model being used. Rather than a simple shrinking of a website, this technology performed a real transformation of the website to make it compatible with any type of mobile device. The level of technological complexity of this approach was much higher compared with competing technologies, since it allowed thousands of users to view websites with any type of mobile device. Web developers needed training to be able to use the technology platform. WE MOBILE’s technology reduced the total development time
for mobile sites significantly as well as lowering the maintenance costs since it no longer involved multiple websites.

The company’s target customers were large web agencies which needed to make mobile solutions for their early adopter clients, in segments such as the media and airline industries.

The CEO mentioned in a memo to potential investors:

“we focus on partnership deals with web agencies... we will aim for the bigger partners. They seem to get the most value from our toolset which allows them to offer high-quality mobile websites to their existing customer base without spending too much money on upfront licenses and development time – we seem to be better/faster/cheaper than the competition. (CEO, e-mail January 2009)

In line with this target customer selection, a classic key-account-management model was installed in order to screen the market and build partnerships with large web agencies. As expressed by an e-mail conversation between the account manager (AM1) and the Sales and Marketing Director (January/February, 2009)

“We want to hook up with Digital Agencies (our partners) and we want THEM to use our platform and make it scalable. They will create and develop mobile websites using the platform.” (AM1, e-mail January 2009)

“We are going for the direct sales approach. This means that we expect you to contact UK web agencies and the CEO will accompany you to the first sales talks, starting from the 2nd week of March as all the sales support tools will only be ready by mid-March. You [AM1] have to be picky about who we want to meet because setting up meetings all-over Europe is expensive” (Sales and Marketing Director, e-mail February 2009)

One account manager could manage a maximum of up to ten web agencies because of the complexity of the sales process. Each time a web agency tried to sell a mobile project to one of its clients, the account manager and a software engineer of WE MOBILE had to join the discussions. Next to the revenues from these projects, the company also generated recurring revenues via a license model. The license model was a subscription license based on the type
of usage of the platform. The recurring fees from the licenses made WE MOBILE attractive to potential investors. The company raised venture capital in April 2009 which would be used to expand the account management model internationally. Soon after the capital investment, the company established an office in the UK and employed account managers in Dubai, India, and the US.

---------------------------
Insert figure 1 here
---------------------------

April 2009 – October 2009: Radical change in the environment and the impact on WE MOBILE’s business model

On July 10, 2008, Apple launched a digital application distribution platform, the “App Store”, for its mobile operating system via an update of iTunes. Applications could be downloaded directly from the App Store to a target device either for free or at a cost. The iPhone 3G, pre-loaded with App Store support software, was launched the following day. Rather than developing applications in-house, Apple provided a software development kit to 3rd party developers who could create applications to run on Apple devices. In the first 6 months, the App Store offered more than 15,000 applications and reached 500 million downloads. By April 2009, those figures had doubled to 30,000 and 1 billion and dominated the 2009 Annual Mobile Summit in Barcelona (West & Mace, 2010). This impact of the Annual Mobile Summit should not be underestimated as it attracted huge press conference, far beyond the technical community. Soon, other platforms for web applications such as Android Market (March 2009) and Nokia Ovi (May 2009) were launched. The spectacular growth of the applications and downloads and the press coverage of the Mobile Summit did bring about a radical change for companies operating in the mobile internet industry. The following quote from a press article sent by an account manager to the management team illustrates this
shock:

“Only a few years ago... mobile browsers were poor at the time. For most companies, pre-loading applications onto devices was not an option, and downloading and installing applications was a pain for end users. As mobile browsers improved in capability and mobile networks improved in speed and reliability, the industry (and users) started to favor mobile websites over apps. Then Apple came along with the iPhone and the App Store. Suddenly it was easy to download and install mobile apps. Most serious players are following Apple’s lead...” (Press article April 23th, 2009 sent by AM1 on May 28th, 2009)

The industry became hungry for applications which provided the possibility of interactive engagement with users, a feature which is much more complicated to create with mobile sites. In addition, an important advantage of applications over mobile websites was a more advanced functionality which made full use of a smartphone’s intelligence. WE MOBILE felt this change in the market, as illustrated by the following e-mail conversation in April 2009 between the CEO and AM1:

CEO: “sell our fully managed solution to web agencies. No more, no less. We have to hit the street with our proposition, meet them, listen to them, convince them... whatever it takes.”

AM1: “[CEO], all the guys are working very hard – trust me – to do this through 1) e-mails, 2) telephone calls, 3) contacts to LinkedIn Groups... Not a single one [web agency] has shown any interest (or even answered). But, hey, I am trying to keep the morale and keep on trying. I am desperate for some help on this.”

The impact of this industry transition from mobile sites to applications had a devastating impact on the company:

“The overwhelming majority of web agencies started to support iPhone and other smartphones. They dropped everything else. They no longer wanted to pay for our service (which transformed websites). Their customers wanted trendy applications for iPhone... The demand for our solution vaporized. Revenues dried up.” (COO, press article 2010).

“Instead of a couple of competitors, WE MOBILE suddenly has hundreds of competitors who are all developing apps. One of our biggest threats is the iPhone SDK (Apple’s development kit for apps).” (Marketing Manager, email February 2009).

This change in the market undermined WE MOBILE’s business model, which was based
on a high-end, powerful solution aimed at large agencies. It took the company several months to become “aware” of this threat in the market, which forced it to revisit its business model. We will further analyze in the next section why this process of perception creation took so long. As the company became more aware of the changes in the environment, it did develop a new business model from the bottom up. Using “Mobi” as a benchmark, it spotted the market segment of low end customers (e.g. cities, churches,...) as an interesting segment for their technology. In contrast to the technology platform used for high-end customers, this product needed to be design in a user friendly way, which wouldn’t require training and intense support. The market approach had to change from channel management using key account managers towards digital marketing. These changes in technology and sales approach had significant implications for the number and profile of the employees needed in the ideal resource configuration to support this business model. As the technology required was less sophisticated, the number of software developers could drop from eight to three, and only one employee would be needed for the server maintenance and hosting. A designer would have to be hired to assist the development of the GUI (user interface). The new sales approach implied that the two account managers were no longer needed, and had to be replaced with one online marketing manager. The profile of the CEO in the new resource configuration would also change. Whereas the existing CEO had a very technical profile, a new CEO with extensive experience in the global mobile internet market should be recruited. The key differences between the business model and resource configuration needed to serve large web agencies and the that needed to serve small web agencies is summarized in table 2.

----------------------------------
Insert Table 2 here
----------------------------------

FINDINGS
The above history shows that WE MOBILE faced a sudden and abrupt environmental change, to which it would have to respond if the company wanted to stay successful. Despite its success in building up a sound resource configuration and associated business model during the pre-App Store period, WE MOBILE failed to adapt its business model and resource base to the changed environmental conditions. To organize our findings as to why WE MOBILE didn’t succeed in developing a dynamic capability, we adopt the managerial process view on dynamic capabilities of Zahra et al (2006). These authors distinguish between three managerial processes of dynamic capability development: 1) the founder/management’s perception of opportunities to productively change existing resource configurations, 2) their willingness to undertake such change, which entails a dedication of the management to strategize around change decisions and 3) their ability to implement these changes, which requires commitment from them to execute changes. Figure 2 illustrates the structure and ordering of the data and starts from these stages of dynamic capability development to show the challenges and possible responses for each stage. Table 3 presents representative quotations and events that substantiate these identified challenges en responses.

Perception: Managing Attention

Zahra et al. (2006:918) state that the first stage of dynamic capability development refers to the individual entrepreneur’s “perception” of opportunities to productively change existing resource configurations. They use an upper echelon perspective by assuming that the key management or founding team behavior does predict the company’s behavior. This
perspective has been criticized by Gavetti (2005) and Danneels (2010), who show that the
development of capabilities might depend on perceptions that differ across the various
hierarchical layers of the organization. In our analysis of how WE MOBILE as a company
becomes aware of changes in the environment, we go beyond the founding team and also
consider the role of individuals at other hierarchical levels, both below (Account Management
level) and above the founding team (Director level and Investment Committee). The first
signals of change were perceived at the level of the account managers. The London based
Account Manager (AM1) – encountered significant problems when he approached key
accounts in the UK market. Despite the interest in the WE MOBILE technology platform
among the major London based web developers, many of them increasingly hesitated to set
up a partnership. In his weekly sales and marketing meeting with the Sales and Marketing
Director, AM1 stated:

“The WE MOBILE technology is based on the wrong assumptions. Large customers ask web developers for an iPhone app. Why would the web developers use our technology if they can get £50,000 to build an app? They do not care that their customers only reach a small percentage of users with that app. Customer is King” (Sales & Marketing Meeting, 14 April 2009)

AM1 convinced the Sales and Marketing director about this change in the environment by
referring to his key account testimonials. Although the Marketing and Sales Director not
immediately disagreed with AM1’s perception of the environment, he also had to alert the
other two members of the management committee. It would be much easier to do so if he
could already present the other members of the management committee with “hard data” and
a potential response to the changed environment, in order to make a strong case that AM1
was not trying to hide underperformance in his own sales and marketing efforts. To further
develop this, he joined AM1 to collect information from London-based web developers. Two
months after the April Sales and Marketing meeting, the Marketing and Sales Director gave a
presentation about the changed environment to the other members of the management team, using testimonials and quotes from former accounts and AM1’s efforts to find a response.

Although the management committee did buy into the idea of the need for a new approach, its members were quite resistant to change anything in the old business model which had been agreed upon with the investors. So, a strategy was developed to draw the attention of the investment managers on the board of directors to the changed environment. AM1 received a new function, releasing him part-time from his account manager role. The new function of AM1 was to get a better understanding of the new iPhone apps trend in the UK market and explore how the company could develop a response to this change in customer preference.

The CEO asked for some convincing material to present so he could alert the Directors already at the next Board meeting on July 27, 2009. He knew that just issuing an alert signal about the environmental changes would not be sufficient to focus the board members’ attention, as they were less embedded in the market nor did they understand the technology in depth. His strategy was to put the changes in the environment and the development of a potential solution always at the agenda of the board meetings. Every Board meeting after 27 July deals with this topic. In addition, he requested a visual prototype which could become part of the eventual solution, and which would help the board members understand the difference between the “mobilizer” used as a technology platform for large accounts and the “instant mobilizer” that could be launched as a specific, easy-to-use, plug-and-play product for smaller accounts. The Board Members did appreciate the efforts of the company to segment the market, but did not immediately consider this to be a change in the market, which would force the company to change its business plan.

Two months later, the CEO presented the new “functional prototype,” now called OSMOBI
(Open Source Mobilizer) at the Board meeting on September 28, 2009. Although the board members liked the OSMOBI product and its revenue potential, this was not tantamount to a clear perception that the business model and associated resource configuration needed to change. The minutes of the Board Meeting on September 28, 2009 mentioned:

“The different OSMOBI revenue streams constitute a speeding-up of the initial business plan, not a change. We always had the intention to develop a product for the low end market. Now this investment will be made sooner. The forecast on partnership revenues stays as in the business plan” (BOD meeting, September 28, 2009)

It was only at the next Board of Directors (BOD) meeting (on October 27, 2009) that the investment managers started to perceive how much the environment had changed and did feel the need for the firm to change its focus from partnerships to the new OSMOBI product. Figure 3 shows that revenues from partnerships not only lagged behind the figures budgeted in the initial financial plan, but also leveled off. At this point, the CEO started to realize that more effort needed to go into OSMOBI product development for the new market segment, and his willingness to further invest in OSMOBI increased. We will further explore this in the next session where we cover the “willingness” to develop change rather than the “perception” element.

It was only at the management meeting on December 14, 2009, in preparation for the BOD scheduled later that month, that the CEO articulated the need for a radical change in strategy, with OSMOBI as the lead product. He then proceeded to draw the attention of the other board members in this direction. The Board was still not convinced that the environment had changed that much and upon suggestion of the president of the Board, a London Based
expert in Mobile Technology was contacted to act as a consultant for the company and maybe a potential CEO if a new direction needed to be taken. The BOD on February 22, 2010 was fully devoted to the new challenges that were offered by the environment and OSMOBI as a potential answer to these challenges. The London Based Expert made a convincing presentation about how the Apple Application Store had changed the environment, which at the same time had created opportunities for the booming business of M-Commerce and defended OSMOBI as a reasonable attempt to formulate a response to this changing environment. At this Board meeting, the investment managers decided this should be presented to their investment committees, since the next tranche of investment would be needed in a couple of months. They did not yet feel comfortable presenting the new business model themselves to their limited partners, but thought that the London based expert would be credible, upon the condition that he also would commit himself as a potential CEO if they did buy the idea. In March 2010, a meeting was therefore planned with two of the three investors, where the new management team (new potential CEO, CEO, and COO, and the Sales and Marketing Director who would now take a role as a non-executive director) would have to present the new business plan. The third investor, a public fund, did not have an investment committee of limited partners which met on a regular basis. At the BOD on March 26, 2010, the investment managers confirmed to the company management:

“The roadshow you did at our investment committees was successful, our investors liked the idea of a turnaround... I [the public fund investment manager] discussed the new plan with my colleagues and we see no problems for obtaining the next round of financing of 1.5 million Euros” (BOD meeting, March 26, 2010)

However, the investment team of the public fund ultimately decided in its meeting on April 8, 2010 that it would not release the next 500 thousand Euros, as the milestones in the new business model had changed from those in the original business plan. The official
communication from the public investor to WE MOBILE read as follows:

“Our investment team has decided not to further invest in the company, as the industry expert in the team has expressed his disbelief in M-commerce and Mobile transactions as a potential source of revenues. The fact that the milestones in the business plan have not been met supports this concern” (e-mail from investment manager to CEO, 8 April 2010)

What is clear from the flow of communication and the above story line is that the different layers in the organization do not get aware of the environmental changes at the same moment in time and, related, it does take them longer to get aware, the more distant they are from the company’s core activities (see Figure 4). We see that AM1 perceived the change in March 2009, soon after he started working for the company, whereas the investment managers on the board of directors only perceived this six months later. Higher-level decision makers, such as investment managers at Board level, are more distant from the action, thus diminishing their ability to interpret “novel experiences”. For example, the board acknowledged that something was changing in the market, but the attention they paid to this change was limited, as they kept focusing on activities related to the existing business model.

The importance of organizational hierarchy in decision-making has been theorized in the Attention Based View of the Firm (Ocasio, 1997), which stipulates that what decision makers do depends on their focus of attention rather than processing information. The focus of attention is determined by the situation in which they find themselves, which again is influenced by the processes the organization has put in place. This view argues that firm behavior is the result of how firms channel and distribute attention across various hierarchical layers in the organization. In other words, the organization is presented as a system of distributed attentional processing (Ocasio, 1997; Ocasio, 2011).
Attention is defined by Ocasio (1997:189) as the noticing, encoding, interpreting and focusing of time and effort by organizational decision makers on both (a) issues, the available repertoire of categories for making sense of the environment; problems, opportunities and threats and (b) answers, the available repertoire of action alternatives, such as proposals, routines, projects, programs and procedures. Managers across the organizational hierarchy focus attention on different activities and aspects of the firm’s agenda. The case above shows, in great detail, that the attention which decision makers at various levels pay to the issue differs greatly according to the situation they are in (i.e. account manager, exec manager, investment manager, limited partner). Developing a dynamic capability at company level implies that a system of distributed attention is installed which directs the attention of all different levels in the hierarchy towards the environmental challenge (the issue) and towards finding an answer to that issue. The case shows that the more distant the decision maker was from the action, the more information and communication tools were needed to draw his/her attention...

For instance, the Sales and Marketing Director accompanied AM1 to collect quotes from the different customers in order to convince the other members of the management team. Later, a visual prototype of the potential solution was developed to communicate with the board members and an external expert was brought into the Board to present his expert opinion on how the environment did change and what the opportunities were that resulted from that change. Directing attention includes (a) actions such as exploring the landscape by doing preferred witness research (Clarysse and Kiefer, 2011); (b) using communication tools and channels such as prototypes, testimonials and even invited experts at board level; and (c) developing procedures which then channel this attention, such as inviting management teams to investment committee meetings (Joseph and Ocasio, 2012). These actions, communications and procedures are moves used by employees to affect and
direct the attention of others to and understanding of changes that have implications for firm performance (Dutton and Ashford, 1993). This process is referred to in the Attention Based literature as “issue selling” (see figure 2) and constitutes the initial step in the change process of which success depends on how effectively change agents gets the right people involved (Dutton, Ashford, O’Neill, and Lawrence, 2001). This leads us to the following proposition:

**Proposition 1: The extent to which the firm is able the sense opportunities and threats in the environment, as a first step in developing dynamic capabilities, will depend upon the extent to which the firm is able to manage attention across the different hierarchical layers of the organization through a process of issue selling.**

**Willingness: Managing Cognitive Dissonance**

In the previous section, we have shown that it is key to get attention aligned across different hierarchal layers in the organization to optimize the sensing of change in the environment. Next, dynamic capabilities imply that the organization develops a “willingness” to change the business model and move from one resource configuration to the next.

Our case data shows that despite the fact that “perception” was created, this did not mean yet that everybody was “willing” to change the business model and the company’s resource configuration. WE MOBILE employed two account managers (AM1 and AM2), but each reacted very differently to the fact that they did not meet their targets. London Based AM1 analyzed the problem, observed the environment and looked for a potential solution, which eventually became OSMOBI.

In contrast, AM2 tried instead to meet the targets set for the partnership business model by working harder within her role as an account manager. On Wednesday, October 21st – more than 6 months after AM1’s e-mail from the London Branch – she e-mailed the following to the Sales and Marketing Director:
“The trade fair in Amsterdam was a big success. I have at least 10 new leads for partnerships to follow up on. I am very sure that by the end of the year I will meet my targets. I only need sufficient support from the back office” (Mail from AM2 to Sales and Marketing Director, 21 October, 2009)

Her belief in the partnership model was strengthened by her signing the first contract with a partner one week after the Amsterdam visit. Figure 5 and 6 show the results of the content analysis of the email conversation they had with the management of the company. Whereas AM1 increasingly talks about OSMOBI and the new solution to the changed environment, AM2 continues to put her attention towards exploiting the account management model she started in.

The key difference between AM1 and AM2 as business developers was their previous work experience. AM2 had over ten years of experience as an account manager in ICT-related environments and made use of a whole battery of routines and contacts from the past. In contrast, AM1 was an engineer who wanted to get out of engineering and had therefore pursued an MBA. Straight after the MBA, he started to work for WE MOBILE. He used his newly developed management skills to analyze the situation and concluded that the environment had changed.

This difference in how people react towards challenges in the environment is also observable between different levels of the organization. The Sales and Marketing Director had experience in managing new ventures (he had been CEO of a new venture before) whereas the CEO of the company had considerable experience as a CTO of a relatively young
technology based company in the US. He had joined that company three years after its founding, so he was proficient at developing stable routines in a growing environment, with a focus on technology development. Again, both reacted in a very different way towards the changes they sensed in the environment.

The Sales and Marketing Director (CSO) sent the CEO an e-mail in December 2009 in which he challenged the assumptions underlying the existing business plan, in light of the new developments in the market. He realized that the current sales approach via account managers could never work in a changed market where customers were no longer interested in complex, high-end technology but had a strong appetite for apps. Therefore he suggested departing from the old business model and convincing the Board to focus mainly on OSMOBI and the new business model. Despite the fact that he recognized the changes in the environment, the CEO’s reaction was rather surprising:

“I read your [CSO’s] email with great astonishment. Unless I didn’t get it, basically you’re raising doubts about our approach and overall strategy! (CEO e-mail, December 2009)

At no point in time does the CEO seem to have realized that, as a response to changes in the environment, OSMOBI would also require redevelopment of the firm’s the resource configuration. Even in the company’s final months, he presented the following story to the Board of Directors:

“…..CEO starts the meeting with the good news that WE MOBILE has managed to be elected for an EC project…. CEO gives an overview of the take up rate on OSMOBI (free version). He presents the funnel of over 8000 visitors leading to 1200 mobile websites in the air at the moment of presentation and 7 paying premium sites…. JC is presented as the new senior VP in Sales and Marketing and future CEO…. He covers the main issues that have to be tackled in the business case, including the product development map which is needed to go from OSMOBI towards OSMOBI m-commerce. Investor 1 asks CEO whether the technology needed for the m-commerce version is totally different from the one embodied in OSMOBI. COO answers that indeed quite some extra development work needs to be done….CEO argues that 1.5 million Euros extra is needed to finance the further development of OSMOBI and to continue the technology roadmap….” (Excerpt
The excerpt above shows that even at the moment when the different hierarchical layers (except for the investment committees) were convinced that a new business model was needed, and after presenting *JC, the London Based expert*, to the board as the prospective new CEO (pending continuing funding), the current CEO opened the board meeting by announcing that the company had won R&D funding from the EC (which meant only 50% financing) to further develop the roadmap associated with the *old* business model and reflected the routines he was familiar with from his previous job as a CTO (i.e. building technology roadmaps and bidding for funding to finance these). The COO, who had over 20 years as a project manager in an ICT company, also reacted in a similar way to the environmental change. His job had always been to manage complex engineering projects and deliver excellent quality. At the BOD on February 26, he quantified the amount of work needed to turn OSMOBI from a functional prototype into a commercial product (see quote above, where 1.5 million Euros was requested from the board). Note the difference with respect to the e-mail sent by AM1 to the Sales and Marketing Director nine months earlier (see appendix A) where he refers to Mobi as the role model for WE MOBILE. Mobi became successful with a product which was technically inferior to OSMOBI at that time.

Also at Board level, we observed that the investment managers responded to the change in the environment by developing responses which suited their comfort zone. The two investment managers from the lead investor had considerable experience in industry (over 20 years) as VP Sales and Marketing of a company active in digital projectors and digital displays. That company’s business model was focused on account management. Throughout the different Board meetings, a significant amount of time was spent fine-tuning the KPIs for the account
managers and the numbers which needed to be reported. The investment managers also liked
to regularly attend technical events to meet the different accounts. However, none of the two
investment managers had any experience in online marketing, which was an essential element
of the new business model. Nor did they have experience with start-ups (it was their first A-
round investment and the rest of their portfolio was in B- and C- rounds). They used their
existing routines and procedures to optimize account management and general management
in the new venture. Although they bought into the idea of OSMOBI as a new product in the
environment, they did not think about the change in business model and associated resource
configuration.

These examples indicate that individuals in the company were aware of the need for a change
in business model, yet they did not want to give up the old business model. The reason behind
this seems to be that the old business model in which they had invested either money and/or
effort (as a founder, investor, manager, employee, etc.) fit neatly within the cognitive maps or
heuristics they had constructed through their past experiences. Previous research has put
forward the importance of cognitive maps in explaining dynamic capabilities. Gavetti (2005)
for instance referred to them as important foci of attention. Managers typically rely on their
long-held, institutionalized beliefs when confronted with new, ambiguous information.
Fundamental changes in the market, such as the introduction of Apple’s App Store in relation
to WE MOBILE, require a new strategic logic which was not aligned with cognitive maps
of the key decision makers. Kaplan (2008) has further developed these cognitive arguments
within the attention-based view of the organization, and shows how the cognitive map of
CEOs determines the way they shape responses to technical change. Cognitive maps can be
seen as heuristics and routines which people use to make sense of signals from their
environment. For instance, AM2, the second account manager at WE MOBILE, interprets
the bad sales results as an indication that more effort must be invested in account management, and uses routines developed in her previous job as a response. However, OSMOBI needs online marketing in order to be promoted effectively, and is thus very distinct from her cognitive map. Similarly, the CEO had previously worked in a high-tech company where he developed routines to build and execute technology roadmaps and manage his engineers to develop cutting-edge technology. But OSMOBI needs a simple solution with a user-centric design, something very distant from his cognitive map. We find a similar cognitive tension at the level of the investment managers. In the following press release, the investor announces that WE MOBILE will now focus on a different market segment, yet the old partnership model will not be abandoned:

“[Company] supplies advanced, tailor-made mobile projects and its strategy is mainly based on Partners offering end-to-end mobile development. [Company] also decided to make its source code available to the development community, although the company retains its traditional, commercial solutions”. (Press release May 26, 2009)

In sum, although the different decision makers at WE MOBILE acknowledged the need for a reaction to the changed environment, they did not leave their comfort zones, i.e. the old business model which neatly fit their cognitive maps. Instead, they see the new product, OSMOBI, as an add-on to the old business model. The persistence of cognitive maps is illustrated in the following e-mail from the CEO to the Sales and Marketing Director regarding the COO’s reluctance to embrace the new strategy:

“[COO] brought up the project business, again! I told him over the past couple of weeks that the project business doesn’t work because our technology is too complex, and web agencies don’t have deep pockets... I made it clear that we’re not going to invest in this anymore – do we need to keep our account managers – and that all efforts are focused on the development of OSMOBI... I have the impression (and am convinced) that he [COO] doesn’t really believe in OSMOBI and he just wants to do projects. He says “yes” during meetings but actually thinks “no”, which is reflected in e-mails sent two hours after the meeting.” (E-mail CEO)

We can explain this behavior using the theory of “cognitive dissonance” (Festinger, 1957;
Cognitive dissonance theory states that if a person holds two cognitions that are inconsistent, he/she will experience dissonance and will try to reduce in one of three ways: (1) remove dissonant cognitions; (2) add new consonant cognitions to it; or (3) reduce the importance of dissonant cognitions (see figure 2). The theory’s main context lies in individual and social psychology, but it has been widely used in marketing and, to a lesser extent, in management, where scholars used it in the early nineties to explain resistance to change (Telci, Maden & Kantur, 2011). The reaction of decision makers in the firm who possessed strong cognitive maps was to reduce the importance of the new, dissonant cognition by keeping the old cognitive map. Individuals who are confronted with new information (i.e. the changed strategic logic from account management to online marketing) feel unease with the mismatch between their cognition (based on account management) and the new cognition (based on online marketing), and thus tend to neglect it (Hodgkinson, 2011). Although dissonance between cognitions should signal a need to re-evaluate the interpretation of disruptive events, managers often feel unwilling to abandon their embedded beliefs and instead avoid the cognitive inconsistency (Zimbardo and Leippe, 1991). New ventures which go through a process of transition from one strategic focus to another require leaders to make a significant cognitive shift from the old interpretive scheme to the emerging reality (Ambos and Birkinshaw, 2010). Such a transition takes a significant period of time, as it requires discussions and internal negotiations between decision makers to build a shared understanding of the new market circumstances. To create this shared understanding, WE MOBILE developed first a visual prototype presented at its September Board Meeting, then a Functional Prototype, presented at its December Board Meeting and eventually collected data such as number of downloads, from having its functional prototype in the market place to back up the new business model. In appendix A is the mail sent by AM1 to the Sales and Marketing Director which illustrates the Canadian company Mobi as a
benchmark to develop the prototype and change to a new business model (see table 2). The prototyping and in market testing was an extremely important factor in creating “willingness” to change. As the individual decision makers could not fall back on their own cognitive maps, they had the tendency to minimize the change in the market and stay within their comfort zone. Coming up with understandable “data” based upon within market tests of the functional prototype did show them the potential of this.

The use of material artifacts such as prototypes has been shown to support the transition from individual to collective sense making in an organization (Stigliani and Ravasi, 2012). Collective sense making reduces the cognitive distance between individuals and allows companies to seize opportunities in the environment (Cornelissen and Clark, 2010). Especially future oriented or prospective sense making which focuses on the circumstances when a group of people or an organization engages in forward-looking thinking to “structure the future” is an important way to overcome cognitive dissonances. The extant literature in prospective sense making has highlighted the use of material artifacts in addition to linguistic forms of communication as engines which fuel the cycle of sense making and sense giving and allow the transition from the individual to the group or company level (Stigliani and Ravasi, 2012). This leads us to the following proposition:

**Proposition 2:** The extent to which a firm is able to develop willingness to change, as a second step in the development of dynamic capabilities, will depend upon the extent to which the firm is able to overcome cognitive dissonance at different layers in the organization through prospective forms of collective sense making

**Ability to Implement: Managing Competing Objectives**

The previous paragraphs indicate that the change process of an organization does not represent a smooth transition from the existing resource configuration to the desired resource
configuration due to cognitive dissonance. Rather, the new resource configuration tends to be built on top of the older one until its underlying business model can prove its validity. Once the new business model is validated in the market, the higher levels in the hierarchy can use the generic KPIs (such as cash flow, revenues, margins) they are familiar with to evaluate the new business model.

The implications of this process for the management of resources in the transition from one business model to an alternative business model are important. In the case of WE MOBILE this meant that the company had to develop an entirely new concept based on online marketing, in parallel to the account management business model. Since the existing business model remained unchanged, the objectives in that model had to be reported at every Board meeting, and the lower levels in the company had to accomplish these objectives in addition to thinking about the new business model. In other words, at each level in the hierarchy, the original objectives for the employees stayed the same. For instance, the technology roadmap and the engineering roadmap which had been agreed upon with the investors staid largely unaffected, and were reported at every Board meeting. The partnership model continued to play a significant part in the Board meetings, and OSMOBI was seen as an addition to that model.

The management of the OSMOBI process as a parallel path involved a combination of stretching existing resources to work for the OSMOBI project on top of the original tasks, and the acquisition of new resources. For instance, an internal communication document was sent in December (just after the OSMOBI website went on-line) with the following guidelines for the WE MOBILE employees: social media are an important marketing instrument for OSMOBI.
“…. I expect all engineers to be active on the various blogging forums. We use Netvibes and Google Alerts to be alerted when web developers blog about our service or the one of our competitors so we can follow this up very closely. In addition, I expect that everyone to send at least one twitter message a day to promote the product. Of course this does not mean that you have to neglect your day-to-day work…..” (CEO WE MOBILE e-mail 8 December 2009)

A new Sales and Marketing VP was attracted in January 2010, as well as a dedicated user-centric designer to build the graphical user interface for OSMOBI. The company also looked for an expert in digital marketing to promote the product.

In the end, the company did not succeed in its goal because one of the VCs withdrew support, which caused a snowball effect on the two other investors. The company did not succeed in securing the funds needed to support the two business models (as new resources were acquired without divesting existing ones). The extra cost of the new business model is illustrated in Figure 7, which shows the numbers compiled by us from the business plan submitted to the Venture Capital Syndicate, used as a financial management tool in the BOD meetings of 2009, and the new business plan submitted to the investors in November 2009. The new business plan also includes OSMOBI. It shows that the development of OSMOBI would increase the burn rate significantly in 2010, peaking at 500 thousand dollars per month. This increase in burn rate resulted from the decision not to divest any of the existing resources. Instead, the management forecast that the development of OSMOBI and associated products would need an extra investment of 2 million Euros (BOD Report, February 22, 2010).

This change process deviates substantially from processes which have been described in the
resource-constrained literature as “bricolage” (Baker and Nelson, 2005) or “effectuation” (Sarasvathy, 2001). This literature suggests that entrepreneurs change their business model very easily when new opportunities emerge. They address these opportunities by using existing resources, even if doing so requires some form of bricolage. However, this resource constraint literature has almost exclusively focused on very small ventures (Baker and Nelson included 29 ventures with a median number of employees of 4 in their investigation), without any form of venture capital (which means there was not necessarily an agreed upon business model) and predominantly in low-tech (i.e. less dynamic) environments. In contrast to the ventures described by Sarasvathy (2001) or the ones included in the Baker and Nelson (2005) study on bricolage, WE MOBILE had raised a substantial amount of A-round Venture Capital based upon a clear business plan upon which the milestones in the shareholders’ agreement were based. These milestones are not always generic in the sense that they can be transferred from one business model to another (e.g. revenues). Instead, a part of them are quite business model specific (e.g. number of licenses sold, number of partnership agreements).

The process described above shows that the development of a new business model and resource configuration occurs in parallel to the ongoing implementation of the existing ones, and therefore requires the company to be able to manage conflicting objectives. The management of conflicting objectives has traditionally been covered by the literature on organizational ambidexterity, which has even been put forward as a dynamic capability in itself (O’Reilly and Tushman, 2008). One solution proposed by that literature is the creation of dual structures to deal with different objectives in an organization, so-called “structural ambidexterity”. Although WE MOBILE did attract some new resources to develop OSMOBI, no separate structure was created to champion the new business model. This
solution would have been very difficult in such a resource constraint environment. A dual structure would have been considered as consuming too many resources and divert attention away from the core focus of the company.

Instead, competing objectives were managed at an individual level. The same people had to both implement the old business model and take actions to support the new one, although it is true that some remained to have a core focus on the old one (eg. AM2) while others had a core focus on the new one (eg. AM1). Gibson and Birkinshaw (2004) have introduced the concept of “contextual ambidexterity” to separate this way of managing ambidexterity from the structural ambidexterity mentioned above. When organizations manage contextual ambidexterity, it means that their organizational members are expected to cope with the contradicting requirements of the existing and new business models by smoothly switching between them in the course of their daily activities. Gibson and Birkinshaw (2004) assume that contextual ambidexterity is rooted in the individual’s ability to both exploit the existing business model and to explore the new one, and advocate that a “context” needs to be created which enables this (Raisch, Birkinshaw, Probat and Tushman, 2009). Schreyögg and Sydow (2010) have criticized this approach by challenging the assumption that individuals are cognitively able to switch in this way. They advocate a systems view which encourages both stabilization and renewal as two interrelated processes. Hence, a more important role is attributed to organizational processes and semi-structures to realize these competing objectives.

Eisenhardt, Furr and Bingham (2010) integrate these two views and propose management mechanisms to deal with conflicting objectives such as the use of heuristics to shape strategic decision making and the use of flexibility-injecting structures to underscore decisions. In line
with this, Farjoun (2010) suggests that flexibility and efficiency should not be seen as dualisms or competing objectives but are dualities that are interrelated to each other and should be managed accordingly. He suggests that companies should build in redundancy in their systems to allow experimentation with new business models, while avoiding that the old one collapses in the meanwhile. We observed that WE MOBILE has indeed used a mixed approach of both relying on and creating a context which stimulated ambidexterity of the individuals and developing a system which both encouraged stabilization and renewal. For instance, WE MOBILE relied on and stimulated the individual ambidexterity of the engineers to both develop further the old platform, but also engage themselves in digital marketing activities such as blogging, twitting and tweeting about the new one. However, at the same time, it built in some redundancy and cognitive variety in the system to avoid that company completely collapses. As an example of system redundancy, AM2 took over some accounts of AM1 so that he could spend more time on the development of OSMOBI. Cognitive variety was built into the system for instance by recruiting two account managers, one of which had a lot of industry and job specific experience, while the other one had an extensive amount of general experience. Eventually, AM1, who had extensive general experience, played a crucial role in developing the OSMOBI product. In addition management mechanisms such as the creation of a virtual OSMOBI tiger team (which was an example of a flexibility injecting mechanism because it cuts across the structures and simplified much of the decision making as the CEO and CTO were immediately informed) and the use of heuristics from a different industry such as number of downloads and users.

Taken together, the literature on competing objectives proposes both contextual, system level and managerial practices to induce the simultaneous pursuit of such competing objectives (for an overview see table 3). The point of departure of these solutions is that flexibility and
efficiency should be seen as dualities rather than dualisms (Farjoun, 2010). This means that the company should attract individuals who are able to cope with individual ambidexterity and create a context to promote this form of individual level ambidexterity. However, this is not sufficient. The organizational system should also have built in mechanisms to deal with stability and change. This can be realized by building in redundancy and cognitive variety in the system. In addition, managerial practices such as flexibility inducing mechanisms and the use of simplifying heuristics can further increase the effectivity of managing efficiency and flexibility as a duality. This leads us to the following proposition:

**Proposition 3:** The extent to which a firm is able to implement change, as a third step in the development of dynamic capabilities, will depend upon the extent to which the firm is able to manage competing objectives at different layers in the organization through managing efficiency and flexibility as a duality

**DISCUSSION AND CONCLUSION**

The purpose of this study was to gain a better understanding of the micro-foundations of dynamic capabilities. We performed a case study of a new venture, WE MOBILE, which was confronted with a radical environmental shift which forced the firm to change its business model and associated resource configuration. To do so, it had to build dynamic capabilities at firm level.

Our study puts forward three important contributions to the dynamic capability literature. First, we introduce the attention-based view of the firm as an underlying theoretical perspective to position the different hierarchical layers and their focus of attention in the firm in the perception stage of dynamic capability development. This study provides a rich understanding of how attention differs across hierarchical layers in the organization and how
the organization needs to develop procedures and communication channels to manage this
distributed attention. Focusing on top-level decision makers is not enough when organizations
have to change because of external pressure. Addressing the challenges suggested by the
Attention Based View (see table 3) is a crucial element in the successful inception of dynamic
capabilities. We refer to the insights offered by the theory on issue selling to address these.
Second, this study introduces cognitive dissonance as a main theoretical explanation for the
reluctance of individuals to introduce change even if they are convinced that change is
necessary. Cognitive dissonance at the different levels of the organization’s hierarchy
explains why firms might be less “willing” to change than originally expected. We show in
detail how cognitive dissonance causes resistance to new environmental demands elements of
collective sense making can be used to overcome this resistance. Third, we show how the
literature on competing objectives provides guidance in how firms can manage efficiency and
flexibility as a duality. We hypothesize that shaping a context for individual ambidexterity
and developing a system to manage this duality are necessary components on which
additional management practices such as flexibility inducing mechanisms can be added. In
sum, the development of dynamic capabilities implies (a) the management of distributed
attention through a process of issue selling, (b) the management of cognitive dissonance
through a process of prospective collective sense making, and (c) the management of
competing objectives through a process of duality. The next paragraphs elaborate on the
implications of each of the three contributions.

Understanding the role of management of distributed attention in the “perception” stage of
dynamic capability development is a key ingredient for advancing the theory of dynamic
capabilities. Attention is distributed across hierarchical levels in the organization (Ocasio,
1997) and both the level, and the focus of attention differs at these various hierarchical levels.
Hence, the level at which the environmental change is detected, and where most likely the answer to that change will be formulated, will have to communicate clearly with the other levels in the organization. To facilitate that distribution of attention, organizational procedures such as regularly organized meetings between different levels of the organization, activities such as presentations for stakeholder organizations, and communication in the form of public press coverage to alert more distant stakeholders is needed. A crucial characteristic of the distribution channels is that efficient vertical interactions complement horizontal interactions to convey new information and focus attention (Joseph and Ocasio, 2011). If attention is not carefully managed, the weakest link in this distribution channel will eventually determine whether or not a dynamic capability will be developed. In the WE MOBILE case, it was ultimately the third (public) investor’s investment team, with which no form of interaction was possible through a vertical distribution channel, which pulled the plug. This means that managing attention implies that the same focus of attention has to be spread throughout all levels. Our study shows that tightening vertical interactions is necessary to shift the cognition of decision makers who face cognitive inertia when being confronted with an environmental shock. Their greater distance from the firm’s action hinders the interpretation of new information and action-outcome relationships (Gavetti, 2005).

The Attention Based View of the firm does clearly highlight the sources of why the same opportunities or threats are not considered to be equally important in different parts of the organization. The solution to this however is to be found in a different part of the literature which addresses attention, namely the literature on issue selling. We show the “objectivisation” of data through the use of testimonials and external exports, the “change in modes of communication” by increasing direct involvement of the actors in different committees and the “communication persistency”. In other words, the continuation of putting
something on the agenda is an important element.

We have shown in the WE MOBILE case that, although different hierarchical layers in the organization were recognizing the change in the environment and were willing to develop an answer (OSMOBI) to address it, this did not mean that they were willing to change the business model at company level nor to change the associated resource configuration. In fact, we found that those decision makers who had strong cognitive maps related to the existing business model and resource configuration were the least willing to change. They faced significant challenges to interpreting the environmental change and its implications for the organization. Instead, they used their cognitive maps to fine-tune the existing business model, with which they felt comfortable. Thus, the impact was a further enhancement of current capabilities instead of the development of dynamic capabilities, which would allow the organization to make the transition to the new business model and resource configuration. We explained this process theoretically by employing the theory of cognitive dissonance. This theory, developed by Festinger (1957) is widely adopted in the individual and social psychology and the marketing literature. It explains why people resist change and how they do so. Since organizations which have to reconfigure their resources require dynamic capabilities (Zahra et al., 2006), developing such capabilities implies that cognitive dissonance will must be managed. One mechanism to manage cognitive dissonance is to recruit people with less experience. For instance, we show that the account manager without experience recognized the change in the environment and was willing to develop a novel response, while the experienced account manager kept using and re-using his/her standard cognitive maps to improve sales. This finding suggests that prior experience with a specific type of business model is an important boundary condition to the fungibility of human resources in highly dynamic markets, where business models may change dramatically in a
short period of time.

Managing cognitive dissonance implies that mechanisms of collective sense making are needed to overcome individual dissonances. Material artifacts are one such form of mechanism. The literature on prospective collective decision making has shown that the use of prototypes and other visual artifacts facilitates both sense giving from one individual to another and a generic collective form of sense making along which a group of individuals draws the same conclusions based upon a more collective form of discussion. In addition to material artifacts, the development of generic KPIs (key performance indicators) for the new business model can be seen as an additional way to stimulate collective sense making at the higher levels of the organization. Finally, the use of a benchmark company which had already developed a similar business idea did increase the willingness to further explore this avenue among the key decision makers.

This brings us to our third theoretical contribution to the dynamic capability perspective. Realizing change implies that not only perception and willingness are created, but also that the individual decision makers must be able to implement the change deemed appropriate. We show that instead of moving from one configuration to another, the new business model and resource configuration is developed in parallel to the existing one, due to cognitive dissonance. Individuals will try to marginalize the dissonant cognition and leave the development of the new business model to individuals with less dissonant cognitions. However, this form of experimentation with a new business model implies that a significant number of employees at WE MOBILE had to be able to pursue competing objectives due to limited resources. The degree to which they were able to do so also determined the ability with which WE MOBILE was able to go through the final stage of the dynamic capability
process, namely its implementation.

In line with recent thinking in this theory, we argue that the management of competing objectives is an important element of this implementation process. Competing objectives can be both managed at individual and at systems level. We show that at WE MOBILE managers did create a context, which encouraged individual ambidexterity. Of course, in line with the theory, this required a lot from the individuals in terms of cognitive ability. However, in addition to creating the context to deal with such ambidexterity, the company also developed a system which allowed to pursue both flexibility and efficiency at the same time. For instance, cognitive variation was built into the system so that new ideas could be developed. For instance, AM1 used the heuristics he had learned during his MBA classes and at his previous job to make sense of the changed environment and to develop a solution. Also redundancy was built into the system so that the organization did not immediately collapse when more time was allocated to exploring the new business model. Finally, the organization also introduced management mechanisms, which are known to increase flexibility. For instance, prototyping rather than planning was used as a way to communicate the new business model and gradually convince different layers in the decision-making structure. Also, the new business model was directly communicated to the investment committees, which is a form of simplifying the decision-making structure. In fact, WE MOBILE’s inability to simplify this line of communication with one of its investors also led to its ultimate failure.

In sum, we conclude that we have extended the dynamic capabilities view to integrate different layers in the hierarchy, as their attention is situational and needs to be managed. In addition, their willingness to develop changes will depend on how individual cognitive
dissonances are overcome and, finally, eventual success in implementing these changes will depend on the extent to which the organization can manage competing objectives. We present each of these underlying theories as “challenges” for which responses can be found in derivative streams of the literature such as issue selling, collective sense making and the management of dualities.

REFERENCES


**Company milestones**

- **February 2006**: Company starts
- **Entrepreneurial phase**

- **December 2007**: Building and executing business model 1

- **June 2008**: Negotiation VC

- **November 2008**: Term sheet agreement VC

- **April 2009**: Closure VC finance

- **Environmental change**
  - Introduction App store

- **Business model 1**

- **Business model 2**

- **May 2010**: Company liquidation
FIGURE 3:  
Budgeted, Realised and Forecasted Revenues from Licenses 
Source: BOD, 27 October 2009
FIGURE 4:
Attention of decision makers
FIGURE 5:
Email Count AM1

FIGURE 6:
Email Count AM2
FIGURE 7:
Forecast Cash Flow, 2009-2010
Source: Business plan November 2008, business plan November 2009
<table>
<thead>
<tr>
<th>Data Type</th>
<th>Quantity</th>
<th>Original data source</th>
<th>Original (intended) data audience</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-mails</td>
<td>4,266 emails, approximately 5,500 pages</td>
<td>Founder’s e-mail account</td>
<td>Emails to employees, top management team, partners, board members, (potential) investors,…</td>
</tr>
<tr>
<td>E-mail attachments</td>
<td>1,992 email attachments, approximately 12,000 pages</td>
<td>Founder’s e-mail account</td>
<td>Emails to employees, top management team, partners, board members, (potential) investors,…</td>
</tr>
<tr>
<td>Company’s archive</td>
<td>5,442 documents, approximately 22,000 pages</td>
<td>Dropbox, intranet WE MOBILE</td>
<td>Employees and top management team</td>
</tr>
<tr>
<td>Observational data</td>
<td>Approximately 275 hours, Approximately 600 pages of observation notes</td>
<td>Principal investigator’s notes from attending formal and informal meetings</td>
<td>Analysis for this study</td>
</tr>
<tr>
<td>Board meeting reports</td>
<td>15 reports, 249 pages</td>
<td>Founders</td>
<td>Top management team and board members</td>
</tr>
<tr>
<td>Sales &amp; Marketing meeting reports</td>
<td>23 reports, 69 pages</td>
<td>Sales and marketing director</td>
<td>Sales and marketing team</td>
</tr>
<tr>
<td>Management meeting reports</td>
<td>44 reports, 131 pages</td>
<td>Founders</td>
<td>Top management team</td>
</tr>
<tr>
<td>Communication forum employees</td>
<td>26 reports, 78 pages</td>
<td>Reports on intranet WE MOBILE</td>
<td>Employees and top management team</td>
</tr>
<tr>
<td>Shareholder documents</td>
<td>8 documents, 304 pages</td>
<td>Founders</td>
<td>Shareholders and founders</td>
</tr>
<tr>
<td>Versions of the Business Plan</td>
<td>5 business plans, 260 pages</td>
<td>Presented at formal occasions such as Board and Investment Committees</td>
<td>Board of directors and investment committees</td>
</tr>
<tr>
<td>Business press articles (press coverage)</td>
<td>10 articles, 12 pages</td>
<td>Belgian newspapers and business magazines</td>
<td>Readers of Belgian newspapers and business magazines</td>
</tr>
<tr>
<td>Press releases</td>
<td>30 press releases, 33 pages</td>
<td>Website WE MOBILE</td>
<td>Visitors WE MOBILE website</td>
</tr>
<tr>
<td>Interview key actors</td>
<td>6 interviews, 1.5 hours/interview</td>
<td>Founders</td>
<td>Analysis for this study</td>
</tr>
<tr>
<td>Conference video</td>
<td>52 minutes</td>
<td>Taped by professional videographer</td>
<td>Conference attendees</td>
</tr>
</tbody>
</table>
TABLE 2
Characteristics of resource configuration 1 vs. resource configuration 2

<table>
<thead>
<tr>
<th>Resources</th>
<th>Resource configuration 1</th>
<th>Resource configuration 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Financial resources</strong></td>
<td>Pre-seed and Seed: 1 mil EUR</td>
<td>500K EUR</td>
</tr>
<tr>
<td></td>
<td>VC round series A &gt; 4 mil EUR</td>
<td></td>
</tr>
<tr>
<td><strong>Human resources</strong></td>
<td><strong>Top management:</strong></td>
<td><strong>Top management:</strong></td>
</tr>
<tr>
<td></td>
<td>CEO/founder (Professor in ICT)</td>
<td>CEO/VP marketing (MBA, 29 years IE, 5 years EE)</td>
</tr>
<tr>
<td></td>
<td>Director Sales and Marketing/founder (Professor in Management)</td>
<td>COO/VP engineering (Ing., 24 years IE, 0 years EE)</td>
</tr>
<tr>
<td></td>
<td>COO (Ing., 24 years’ experience in managing projects)</td>
<td></td>
</tr>
<tr>
<td><strong>Operational management:</strong></td>
<td>1 Program manager, 1 Product manager, 8 Software developers, 2 Maintenance hosting servers, 3 Account/sales managers, 1 Marketing consultant</td>
<td>1 User experience designer 1 Online marketing 3 Software developers</td>
</tr>
<tr>
<td><strong>Technology</strong></td>
<td>Proprietary software platform offering semi-automated tools to deliver content on any type of mobile device</td>
<td>Simple, user centric web development tool, with a friendly interface to mobilize existing websites</td>
</tr>
<tr>
<td><strong>Business Model</strong></td>
<td><strong>MSP (Managed Service Provider) Partner model</strong></td>
<td><strong>SAAS (Software as a Service) Online marketing model</strong></td>
</tr>
<tr>
<td><strong>Value Proposition</strong></td>
<td>Proprietary technology platform that decreases the amount of work of the web developer with 50-80% when mobilizing existing content and reduces maintenance costs with 50% for the end user</td>
<td>User friendly, mobile web development tool to transform Open Source powered websites in no time and maintain them at low cost</td>
</tr>
<tr>
<td><strong>Customer Segment</strong></td>
<td>High-end, larger web agencies as partners, big ticket corporates (such as banks, airlines, media companies…) as end customers</td>
<td>Low-end, smaller web developers who develop websites for cities, public agencies, social enterprises, micro-enterprises…</td>
</tr>
<tr>
<td><strong>Channel</strong></td>
<td>Account managers screen the market and establish partnerships with large web agencies and system integrators (accounts).</td>
<td>Online marketing using SEO, SEA, …. Customers are reached online via the product and company website</td>
</tr>
<tr>
<td><strong>Customer Relationships</strong></td>
<td>Dedicated personal assistance and different forms of SLAs. Co-selling with the partners/system integrators and web agencies</td>
<td>From self-service to automated services (= semi-automated Q&amp;As to solve problems)</td>
</tr>
<tr>
<td><strong>Revenue Streams</strong></td>
<td>Revenues come from selling licenses to web agents</td>
<td>Freemium model (free, personal premium and commerce version)</td>
</tr>
<tr>
<td></td>
<td>Commercial license= 7000 EUR/account, average of 10 accounts/web agent</td>
<td>Price ranges from free to 50/month</td>
</tr>
</tbody>
</table>
### TABLE 3
Representative Quotes, Events and Archival Entries underlying challenges and responses

<table>
<thead>
<tr>
<th>Stage 1: Perception</th>
<th>FOCUS OF ATTENTION</th>
<th>Hierarchy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CEO: “sell our fully managed solution to web agencies. No more, no less. We have to hit the street with our proposition, meet them, listen to them, convince them… whatever it takes.” (email March, 2009)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Response AM1: “[CEO], all the guys are working very hard – trust me… Not a single one [web agency] has shown any interest (or even answered). But, hey, I am trying to keep the morale and keep on trying.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Job content</td>
<td>May 11, 2009 COO presents the technology roadmap at the board meeting and explains that the technology can improve by including rich content (video content) and a higher level of interactivity (Clarysse and Kiefer, 2011: 222)</td>
</tr>
<tr>
<td></td>
<td>AM1 focuses on a simple, user centric web development tool, with a friendly interface: “…Look at their revenue strategy: you pay a small fee and then you can use the tools to develop mobile apps. The technology is very simple and it is easy to use! The more I think about it, the more I like the idea! (E-mail May 4, 2009)”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ISSUE SELLING</td>
<td>Objective information</td>
</tr>
<tr>
<td></td>
<td>- Collect customer testimonials March 22, 2010 The CEO presents an OSMOBI marketing report. The freemium version of OSMOBI was downloaded 1500 times in 3 months.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Use of external experts February 26, 2010 JC, a London based expert in online marketing and the prospective new CEO (pending continuing funding) presents a new version of the business plan to convince the investors in the board of directors.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mode of communication</td>
<td>Analyses of the attendees of and presentations in management meetings, board meetings and investment committees show that account managers only present in management meetings and very occasionally in board meetings. CEO/COO/Sales and Marketing director present in management meetings and board meetings but never for investment committees.</td>
</tr>
<tr>
<td></td>
<td>Communication persistence</td>
<td>The official board reports and the informal notes of our principle investors (September 2009, October 2009, November 2009) show that similar slides are used each time to convince the board member of the changing environment</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stage 2: Willingness</th>
<th>COGNITIVE DISSONANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Consonant response AM2: “The trade fair in Amsterdam was a big success. I have at least 10 new leads for partnerships to follow up on. I am very sure that by the end of the year I will meet my targets. I only need sufficient support from the back office” (E-mail from AM2 to Sales and Marketing Director, October 21, 2009)</td>
</tr>
</tbody>
</table>
|                     | Remove dissonance CEO: “[COO] brought up the project business, again! I made it clear that we’re not going to invest in this anymore and that all efforts are focused on the development of OSMOBI… I have the impression (and am convinced) that he [COO] doesn’t really believe in OSMOBI and he just wants to do projects. He says “yes” during meetings but actually thinks “no”.


| COLLECTIVE SENSE MAKING | Reduce dissonance | Board reports (September 2009, October 2009, November 2009 and December 2009) describe the discussion on OSMOBI but still include a section where they evaluate the number of signed partnerships.

| Use material artifacts | September 27, 2009: CEO presents new functional prototype at Board meeting
| | October 22, 2009: COO and technology team develop launch OSMOBI at Digital Marketing conference

| Use generalizable KPIs | Product manager: "In attach the overview of usage of OSMOBI. Main conclusions: everything is catching back up with figures of Friday. Only the number of launched projects is low. Don’t quite know what could be the reason, I will follow up... (email October 20, 2009)"
| Response AM1 send to management team: “Thanks to [product manager], we have now a clear snapshot of where OSMOBI stands today, just after the official launch...” (email 28 October 2009)

| Use benchmarks | March 6, 2009: AM1 e-mail to the management team which illustrates the Canadian company Mobi as a benchmark (see appendix A): “...This is a clear example of how a proper GUI (graphical user interface) can make your product look better...”

Stage 3: Ability

| COMPETING OBJECTIVES | Strategic stability vs change | Board meetings (September 27, 2009; October 2009, November 2009, December 2009) show that the investment managers in the board focus on the agreed milestones focus on the engineering roadmap, the technology roadmap and a sales pipeline that support these milestones. 80% - 90% of the various board meeting reports cover these reports.
| | 10%-20% of the board meeting reports discuss strategic changes needed to avoid milestone underperformance. Different forms of change such as technological choices are considered to be a necessity.

| Job Flexibility vs Efficiency | CEO asked his engineers to collect market feedback on the new product OSMOBI while at same time focus on their work on the account management model and follow the technology roadmap in order to meet the milestones of the investors.
| "... I expect all engineers to be active on the various blogging forums. We use Netvibes and Google Alerts to be alerted when web developers blog about our service or the one of our competitors so we can follow this up very closely. In addition, I expect that everyone to send at least one twitter message a day to promote the product. Of course this does not mean that you have to neglect your day-to-day work...." (CEO WE MOBILE e-mail 8 December 2009)

| Short vs medium term | Internal documents (May 2009) dropped on the intranet and observation notes of biweekly communication forum to the employees (May 15, 2009) show that engineers were asked to follow the technology roadmap on the short term. The technology roadmap presented by the COO at board meeting of May 11, 2009 explains that the technology can improve by including rich content (video content) and a higher level of interactivity (Clarysse and Kiefer, 2011: 222)

| MANAGE | Individual Ambidexterity | A context to stimulate individual ambidexterity was...
## FLEXIBILITY AND EFFICIENCY AS A DUALITY

Priorities were set to facilitate focus. AM1 could increasingly focus on the change process while receiving assistant support to pursue original goals. He received a budget to experiment, while additional budget was allocated to pursue the traditional milestones.

**March 20, 2009**: S&M manager sent email to AM1:

> "...you can spend some more time exploring our business case with me. I asked Engineer 3 to take over the London account X. They are more technical oriented anyhow. He is happy to do so, it gives him a way to visit London.

**System redundancy and cognitive variety**

Email analysis indicate that redundancy was built into the system as AM1 could set up a Tiger group for OSMOBI, while the traditional BM still continued to be the dominant focus. So, if AM1 spent some days on the prototype, the other projects could still be delivered on time.

**October 17, 2009**: AM1 e-mail to the S&M manager:

> "...I am pretty confident that we go online beginning of December. COO gave me Engineer 1 and Engineer 2 for the next two weeks to build the GUI back-end. He could reschedule their work so they can focus on OSMOBI..."

Second, cognitive variety was built into the system by recruiting very diverse people. For instance AM1 had no industry nor job specific experience, but a vast amount of generic experience (he did an MBA and worked for five years as a systems engineer in an aviation company) while AM2 had lots of industry and job specific experience but no generic experience across industries and functions (she worked 10 years as account manager in different ICT start-ups (Source: CVs).

## Management mechanisms

E-mail analyses indicate that the AM1 and Sales and Marketing Director set up a tiger team to develop an alternative more simple and easy to use technology which is called the Drupalgoesmobile project (which eventually resulted in OSMOBI).

---

### APPENDIX A

Email AM1 to CEO/CSO

From: AM1  
To: CEO  
Sales & Marketing Director (CSO)  
Date: 6/03/2009 17:37:11  
Subject: The clone of WE MOBILE - www.mobi.me
GUI, GUI, GUI!!!!!

Yet, this is a clear example of how a proper GUI can make your product look better.

Not sure where mine and Jan's GUI specs ended ... but it looks like Mobi got it in their hands and implement (some) of our ideas!... From a commercial viewpoint, 100% their GUI gives them a more 'sellable' product. Try it yourself. It takes NO training or user manual. It is simply logical.

1) enter the desktop website where the content is (what a pity you can select only one website and not many....
2) by just clicking pictures/texts on it, select the web content you want to mobilize
3) look how it looks on a mobile device. Add, move it, insert something by just clicking some buttons. DONE!!!!!!!!!!!!!!!!!!!!
No need to know about filter/mapping... no need to read manuals. No training.

ENGINE
Like ours, based on Xpath expression concept. Their 'composer' is web-based, like ours.
But sometimes it crashes (like ours?:-)), not very stable.

MARKETING
It makes you think how cool the name 'Mobi' is. Maybe 'composer' is not so appealing for marketers?
I personally don't like their website but I like the fact that it is simple and stupid.

Business Development
Business Model is based on licenses and the service is fully hosted.
Target groups: web developers.

Nice to see that their 'license page' on their website does exactly what we want to do in our new one (including Terms & Conditions). The new website developers in WE MOBILE should copy it!

Pricing: VERY LOW. But also the allowed traffic is low.... as far as I can understand. “CEO”, can you help here?

Best
AM1