Mobile Technology Capabilities in Creative Service Firms: A Resource-based Perspective

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Summary

This paper endeavours to understand the process of mobile technology (MT) employment in creative service firms through the prism of a Resource-based View. In doing this, it utilises the competence framework proposed by Sanchez (2003), according to which firms that operate as an 'open system' of resources and capabilities excel in the strategic competition. The case study approach is applied to describe and examine the chosen framework in six firms through in-depth interviewing and analysing secondary sources. With respect to findings, MT resources are deployed in accordance with the strategic logic of a firm. There is a general consensus that MT is non-substitutable but strategically useful. All six firms share a common coordination mechanism in managing MT resources in the form of a relationship management. The role of management is stressed in the form of an account manager who uses clients' objectives as means for allocating tasks and resources.

INTRODUCTION

Dynamic nature of external environments in the form of continuous and unpredictable changes forces the organizational practices to be transformed operationally but, most importantly, strategically in competing for firms' survival and 'stand alone' positions. Nevertheless an identification of strategic traps and tactical decisions still begins with examining firm-specific resources, capabilities and management processes aiming to build a competitive advantage. Technological competences in this regard should be treated as a primary mean to produce innovative outcomes resulting in sustainability of strategic superiority (McEvily *et al.*, 2004).

By all means, an application of technology has passed far beyond the boundaries of the industrial scope by gaining the status of universal currency in modern times. Following a next step in the evolution of information technologies, the ubiquity feature facilitates the information transmission within space and time-independent context subsequently leading to the value reinforcement delivered by mobile technological platforms (Balasubramanian et al., 2002, Thompson, 2009). The technical nature of mobile devices is the core feature that differentiates it from stationary and 'fixed' network information technology (IT) (Tarasewich *et al.*, 2002). From this perspective, Lu and Ramamurthy (2011) emphasise the impediment for firms to support organizational agility caused by the fixed physical nature of IT artifacts. As a result, mobility and location-independence of mobile hardware devices and software systems potentially bring up the possibilities for exercising continuous strategic agility required by firms to survive in constantly changing environments.

Mobile technology (MT) penetrated all the aspects of social and business existence and are driving new value-added opportunities, particularly, within the creative industries (Handke, 2007). Nonetheless, further exploration for new ways of the ubiquitous technology employment remains a great challenge due to the lack of standards concerning the technical aspects of technology operation as well as the fundamental nature of the subject matter (Huggers, 2010). The task to construct convergent networks and generic technical infrastructures appears to be an aspect of collective effort among researchers from variety of disciplines, governmental and legal institutions and practitioners. As a starting point, there is a need in greater understanding of what MT is and, most importantly, how firms employ MT to maintain strategic competitiveness. Tarasewich *et al.* (2002, p. 45) point that analysis of MT essence and the value, it creates for the users, "*requires a focus on usability that goes beyond the device itself*".

This paper endeavours to understand the process of MT employment in creative service firms through the prism of strategic capabilities perspective. Following the tradition of researchers studying IT-related competences, capabilities and resources [pic](Bhatt and Grover, 2005, Huang et al., 2009, Song et al., 2005, Chen and Tsou, 2012), a resource-based view (RBV) is employed to analyse firm-specific resources in regards to the MT use and explore the abilities of creative firms to deploy, develop, and reconfigure MT-resources strategically and operationally. According to the Sanchez' (2003) competence framework, firms that operate as an 'open system' of resources and capabilities, cultivated internally and/or acquired externally, excel in the strategic competition through organisational mechanisms of the control, decision-making and business leveraging that coordinate a renewal flow of resources and capabilities preventing rigidities in processes. Hence, this study essentially develops an understanding of what managerial processes are implemented in creative firms to ascertain, use and upgrade strategically important for the MT

employment resources and capabilities.

THEORY

The Concept of Strategic Capabilities

Uncertainty of today's business environments brought into a focus an issue of sustainability requirement, based on organisational unique capacities. Porter's view in the 1980s on adaptation of a firm towards industrial structure and business context has evolved into a philosophy where a company itself attempts to shape the strategic and operating environment (Eng, 2010). According to Johnson *et al.* (2011) there are two components of strategic capabilities: resources and competences. Resources are the assets that organisations have or rely upon; competences are the ways these assets are utilised. Having said this, a task of modifying a business context lies in careful assessment and potential development of critical resources and competences, which the firm possesses or needs to acquire. The capabilities' approach contemplates the strategic position of a firm in order to manage and adapt the operation context by taking into account the company strengths and weaknesses. Lynch (2012) suggests that analysing the resources and competences of an organisation has a dual purpose: to identify the added value of these assets in order to enhance the competitive advantage of the organisation's resources.

For the purpose of understanding what exactly the capabilities term stands for, the paper critically evaluates the theoretical basis for the capabilities approach. Then, it focuses on studies, specifically, related to IT capabilities where the analysis of technological in nature competencies and resources represents a conceptually fit passage to strategically understand the MT employment processes.

Evolution of Strategic Capabilities – Creating and Sustaining Competitive Advantage

The underpinning of the capabilities perspective originates primarily from the strategic management literature where attempts are made to identify the sources of competitive advantage for organisations. Michael Porter in 1980 and Charles Shapiro in 1989 suggested about the competitive positioning perspective of an organization as the ancestor approach to capabilities theory. First efforts in determining organisational antecedents towards an achievement of competitive advantage have been undertaken by Porter (1980). According to Porter's fundamental principles the environment in which the firm operates, not the organisation itself, poses the key element for the strategic decision-making. Performance outcomes and actions to be taken can be projected on a basis of industrial structure in which the company operates (Porter, 2004a, Porter, 2004b); hence, the choice of the industry represents an initial stage in conducting business activities and directs the behavioural orientation of organisations within the specific industry (Teece, 2007). As indicated in *Five forces model* the industry structure can be mapped with respect to five factors such as rivalry within the industry itself, bargaining powers of suppliers and buyers, entry barriers, and threat of substitution (Porter, 1980). Clear understanding of industrial forces allows firms to establish a unique position in the environments and develop or acquire competences in order to successfully compete with rivals for sustaining its competitive advantage. Therefore, the monopolistic ownership of specific capabilities, not available to competitors, is a

preferable scenario for profit maximisation but also for enhancement of specific organisational qualities such as management skills, routines and leadership (Lynch, 2012).

Furthermore, Shapiro (1989) placed an emphasis on the environment where the form operates but with accent on competitive players. The so-called Game theory has been applied to the strategic management context and stressed the importance of establishing own rules that instruct organisations how to behave with rival firms – 'manipulate' the environment (Teece *et al.*, 1997). The investments into the relationship management with competitors seemed a 'weird' idea where the aim is to outperform the rivals and protect own position. However, modern network approach and the phenomenon, called co-opetition, demonstrates that industrial mapping can be used not only as analytical to assess the situation, but as operational mechanism to identify sources of assets and competences that might enhance the competitive advantage of a company (Hooley et al., 2004, Lai et al., 2007).

Truly capabilities-related theoretical stream originates from Penrose (1959), Day and Wensley (1988), Teece *et al.* (1990), Leonard-Barton (1992), and Day (1994) studies – distinctive or core capabilities stream of research applying the RBV as theoretical basis. Suffice to say that the term 'capabilities' has been recognised and conceptualised by the above-mentioned academics. Teece *et al.* (1990, p. 28) defines the capabilities as:

> *…a set of differentiated skills, complementary assets, and routines that provides the basic for a firm's competitive capacities and sustainable advantage in a particular business.*

The meaning of the term *'capability'* lies in a possession of skills or competences to be used and potentially developed; a characteristic that is dynamic and transformable in nature representing someone's or something's abilities. The capabilities pose a set of characteristics, strengths and weaknesses of the firm (Penrose, 1959). In addition, from a strategic management perspective the definition of capabilities captures unique, firm-specific competences and skills which, in most cases, are being intangible as opposed to firms' tangible assets (Leonard-Barton, 1992). However, Lynch (2012) considers organisational capabilities as being part of a firm-related resources combined with all unique tangible and intangible assets.

Despite the ongoing debate among scholars about the conceptual definition of the capabilities term, the capabilities approach has increasingly been recognised as an academic issue that is based upon understanding of complex processes behind the convergence and interaction of resources, skills, competences and information which lead to the sustainability of companies' competitive positions. According to Teece *et al.* (1997) firm capabilities pose a strategic instrument in developing and shaping the business trajectory and behaviour of an organisation within three dimensions:

> > Routines and functions;
> > Knowledge and Skills;
> > Co-ordination and organisational culture.

As a result, three-dimensional system of capabilities endeavours to utilise and integrate firms' resources in order to implement strategic vision.

Within this context RBV is treated as a central theoretical basis to analyse strategic position of the firm from the firms' resource portfolio perspective [please refer to the next session for a detailed account of the RBV approach]. The notion of the competitive advantage can perhaps shape resource-based theories, as these theories concentrate on core resources and competences of an organisation. Essentially competitive advantage comes from the organisation's resources rather than the environment within which the organisation functions (Figure 1).

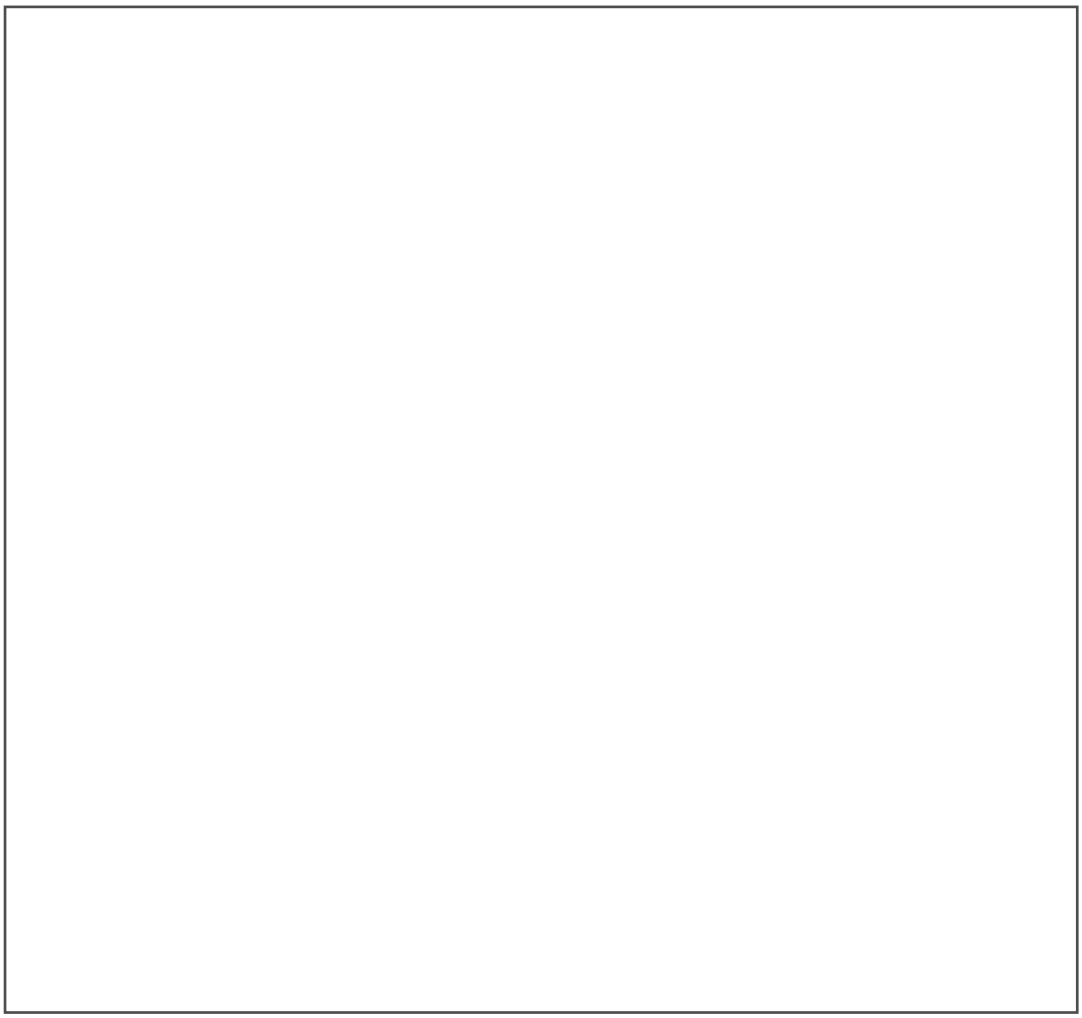


Figure 1. **The position of resource-based theories**
Source: Lynch, 2012, p. 48.

Finally, it is worthwhile mentioning that modern developments in capabilities research brought into focus the dynamic nature of continuous generation and deployment of organisational competences – dynamic capabilities research. It follows RBV principles with the difference that capabilities are not a static but a dynamic concept, which allows to organisations flexible transformation and adaptation in the context of operation by possessing core competencies that differentiate a firm (Wang and Ahmed, 2007). The shift towards dynamization of organizational capabilities became a core aspect for the firms' survival and the achievement of sustainable competitive advantages due to continuous balance between exploitation of internal and external firm-specific competences as well as exploration of new capabilities [pic](Soosay and Hyland,

2008, Teece, 2007).

Strategic management has shifted towards a philosophy where the organisation effectively is able to control the environment and manage it in any circumstances whether it is due to technological transformations or transitional changes in market behaviour, to *"accomplish against the opposition of circumstance or competition"* (Teece *et al.*, 1997, p. 513). According to the dynamic capabilities paradigm introduced by Teece et al. (1997), a firm can continuously renew existing skills or generate new competences through exercising the use and development of dynamic capabilities. According to Wang *et al.* (2007), dynamic capabilities in the form of adaptive, absorptive and innovation capacities solve the problem of inertia and core rigidities in organisational operations, emerging as a result of the routinisation that transforms once being a source of competitive advantage capabilities into impediments for further improvements in reconfiguring and upgrading firms' valuable and rare resources (Leonard-Barton, 1992).

The next section explores the RBV as a theoretical vehicle that is widely applied to the theoretical and empirical conceptualisation of IT capabilities.

The Resource Based View Approach

Organisations are discerned as bundles of distinctive assets, competences, and capabilities that enhance firms' positions within competitive arena as well as help to identify sources that might assist an acquisition and generation of new assets and capabilities [pic](Day, 1994, Juga, 1999). Assets represent the tangible aspects of companies' resources such as technologies and buildings whereas capabilities are invisible *"glue that brings assets together and enables them to be deployed advantageously"* (Day, 1994, p. 38). Therefore, according to the RBV organisational capabilities demonstrate the value or benefits of assets to be strategically used, developed within the processes and routines. As an example, capabilities can be identified within the chain of activities aiming to create a value for the customer: market-management capabilities (data generation and co-ordination), production capabilities (research and development, opportunity-sensing abilities), logistics capabilities (order fulfilment), and service process capabilities (service delivery).

According to Lynch the essence of RBV development lies upon individual resources of an organisation rather than on strategies that are commonly accepted within all companies in an industry. It is of course important to understand the industry but organisations should seek their own solutions within this context.

RBV primarily seeks to emphasise that a possession of strategically useful, heterogenous, and not replicated by competitors resources constitutes the resource position of the firm among rivalry firms (Wernerfelt, 1984). Having said that, living in times of 'destructive mutations', when companies have a relatively easy access to generic technologies, knowledge base and demand opportunities for companies to hold unique resources within a firm's internal boundaries are limited. As a result, the effective use of strategic, but not core, resources opens up an alternative ways for organisations to be distinctive (Sanchez, 2003). For instance, having the mobile technology infrastructure might not be perceived as a possession of rare technical resource but it is a distinctive way to gain network benefit that in return can generate competitive superiority. Therefore, the resources-in-use concept is what the organisational capabilities stand for and what

attracts modern practitioners to consider in their business practices.

Theoretically, RBV triggered the emergence of the sub-streams within the capabilities approach that views organisational capabilities particularly as a system of knowledge as an intangible asset and skills in applying knowledge through learning as managerial process of information dissemination, integration and generation that eventually facilitates building a firm's competitive advantage (Leonard-Barton, 1992). The four-dimensional map with the following systems of knowledge integration: knowledge and skills (human capital), technical system knowledge, managerial systems and culture of a firm in terms of values and norms, - helps to identify critical capabilities within each system and assess how these can be deployed in order to implement a strategic vision set by a firm [pic](Leonard-Barton, 1992, Day, 1994). The practice of the capabilities mapping enables the effective management of core resources in firms. As a result, firms are able to establish flexible business models that can easily adapt to unpredictable changes within external environments through the implementation of the problem-solving approach and ability to reconfigure resources and capabilities across various dimensions [pic](Leonard-Barton, 1992, Schreyögg and Kliesch-Eberl, 2007).

Furthermore, Sanchez (2003) argues that an open system of resource stocks and flows would support efficient leverage of an organisation's capabilities through the convergence and ongoing interaction among resources, capabilities and control principles. This system refers primarily to management processes used including determination on how an organisation regards opportunities and threats from both its internal and external environments. In this respect, management processes drive the building up of and leveraging of resources and capabilities, which in return affect creation and sustainability of a firm's operations and product. In essence these processes determine achievement of competitive advantage (Figure 2).

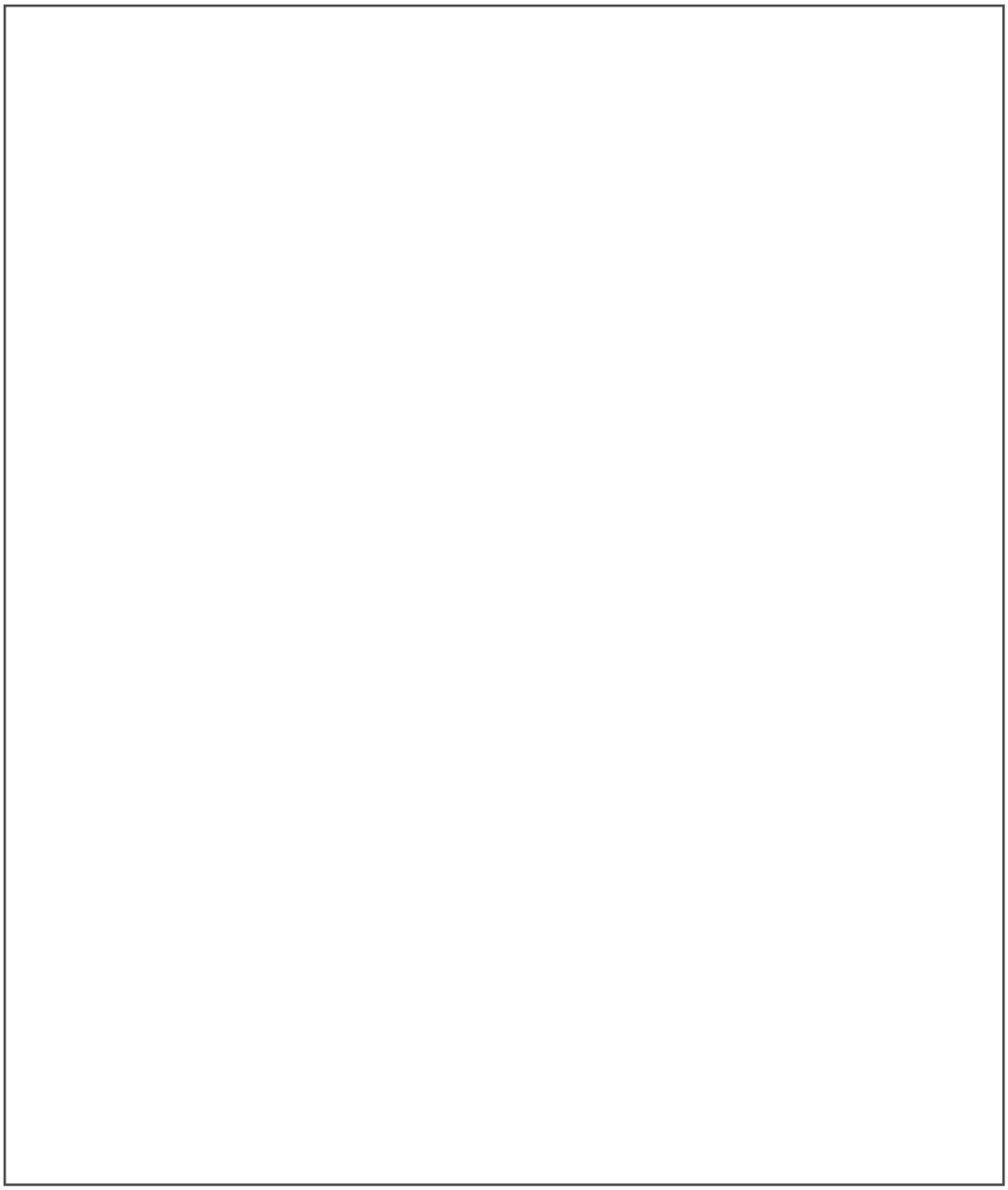


Figure 2. View of the firm as an "open system"
Source: Sanchez, 2003, p. 362.

There are two particular aspects that interest this paper: a) the way resources are embedded in the system of an organisation especially their link with other resources and how they contribute to creating competitive advantage; b) how these resources affect management processes within the organisation such as decisions about their allocation in completing particular task or the manner these decisions are communicated in the context of an organisation.

The next section focuses on IT capabilities research and utilises empirical data of this particular area in order to examine its ability to generate assumptions around mobile technology capabilities.

Resource Based View in the context of Information Technology Capabilities

In the era of electronic commerce IT appears to be an enabling mechanism for conducting business and delivering services in more efficient and effective manner (Mitra, 2005). The importance of acquiring and developing IT capabilities in order to effectively deploy IT resources and deliver superior value to customers appears to be a critical issue for both, manufacturing and service players (Miles, 2001).

Researchers such as Bhatt and Grover (2005), Tarafdar and Gordon (2005), Lester and Tran (2008), Huang and Chen (2009) turned their focus, specifically, on the role and composition of IT capabilities within organisational processes. RBV represents the theoretical underpinning in a conceptualising the IT or technological capabilities (Bhatt and Grover, 2005). The composition of IT systems consists on tangible and intangible assets and competences that can be analysed on three interdependent levels: resource level (IT infrastructure) – 'material agency', organising level (IT personnel, governance and co-ordination mechanisms), and enterprise level (strategic fit)– both representing 'human agency' of IT use (Leonardi, 2011). The facets of IT application and usage constitute the IT capabilities. As a result, the technical aspect of any particular class of IT is not being of any interest towards strategic decision-making; the key focus lies in the processes of embracing the technology. IT capabilities construct, as stated by Huang *et al.* (2009), allows companies to develop strategic decisions in regards to the IT use in operations and as a result of that to assess its impact on a firm's performance.

The studies on IT capabilities stress the importance of technological capabilities on a strategic level. MT, a new evolutionary stage in technological advancements, offers new business opportunities for effective anticipation and quick response to the market needs as well as survival in highly competitive and uncertain environments (Rochford, 2001). Due to the distinctive functional feature in the form of ubiquity and ability to transform information and communicate independently from location and time, conceptually MT allows maintaining a continuous strategic flexibility as opposed to physically fixed IT infrastructure (Lu and Ramamurthy, 2011). Therefore, it is critical to provide empirically informed insights into practices of the MT use and strategic decision-making in firms, which operate in a new 'mobile' environment.

A Conceptual Foundation

What matters at this point is the ability of developing a framework which could interpret and analyse the utilisation of resource allocation and its impact to management processes in the relation to the MT deployment. In this respect, it would be possible to identify and examine strategic capabilities as paramount to organisational capacity in creating and sustaining competitive advantage through the MT use.

Schreyögg and Kliesch-Eberl (2007) argue that capabilities should be conceptualised in the context of organisational problem-solving. This is only possible when some sort of outstanding skills have been improved in order to have these problems resolved. In addition, Helfat *et al.* (2007) regards organisational processes as resources because a process can lead to a competitive advantage if it creates more value compared to other organisations. This is perhaps the approach chosen in this paper because the "open system" as suggested by Sanchez implies utilisation of an ongoing process that is supported by review mechanisms. Due to the interactive nature of the relationships between resources, capabilities and managerial processes; an identification of the alignment points between resources and management processes, based on

characteristics proposed by Sanchez (2003) (Table 1), grounds the capabilities mapping for the MT-related processes on strategic level.

Table 1. How Resources and Management Processes align in creating and sustaining competitive advantage

Resources	Management Process
Characteristics: Elements to be examined	
How far resources can lead to achieve reduced costs Resources that are: strategically useful inimitable non-substitutable	The management processes are effective in coordinating interrelated competences The management processes detects and develops technological, marketing and other competences
Resources that are affected by time restrictions	The management process lead to clear tasks and adequate resource allocations, and monitors task performance
Resources which effective use depends on relationships with other resources	The management process includes effective communication processes
Resources that enable a firm to capture benefits from outside networks	The management processes disseminates knowledge and information to activities within and out of the organisation

Source: Adjusting Sanchez, 2003, pp. 358 and 368.

METHOD

Foundational platform, a literature-based research framework, sets the orientation of the study towards a case study method. Given the contemporary nature of the mobile technology employment in B2B context for both, process re-organisation and as part of the product/service offering to customers, the case study is used to describe the MT employment process in the light of the RBV. Sanchez' (2003) model of the firm as an 'open' system, aiming to understand and explain the process of organisational capabilities' development, serves as a design instrument with a detailed characteristics of resources and management processes on a basis of which field cases would be described. As a result, this study follows a deductive approach stressing the dual role of the theory, firstly as the research instrument for systematic procedures specifying questions to be addressed, and, secondly as means to analyse findings through pattern-matching procedure. Gibbert et al. (2008) demonstrate that the deductive approach to the case study research maintains internal validity minimising 'lack of rigor' factor, considered to be a primary disadvantage for the chosen research strategy (Yin 2009). Nevertheless, we emphasise the qualitative approach to studying the phenomenon under question due to limited number of empirical research on the use of MT well as a need to empirically verify conceptual underpinning of the competence perspective. Complexity and heterogeneity of firm resources and managerial processes create barriers to establish a single measurement instrument to conduct a large-scale study. Although, in many instances case studies are viewed as a soft research method; case study strategy would serve as a platform to develop a holistic understanding of the processes in employing MT for the possibilities to collect generalisable data in the future.

Contextual Setting

This paper focuses on a single sector, the creative industries, that demonstrates the leading

attitudes towards digital revolution where technology, particularly, mobile technology is applied as a facilitating tool embedded in processes and actual outcomes of the production and as means to manage business processes as well as communicate internally and externally (TSB, 2009). The creative sector appears to be a complex system of thirteen industries sub-divided into three segments of content creators, service providers and artefact producers (Figure 3).

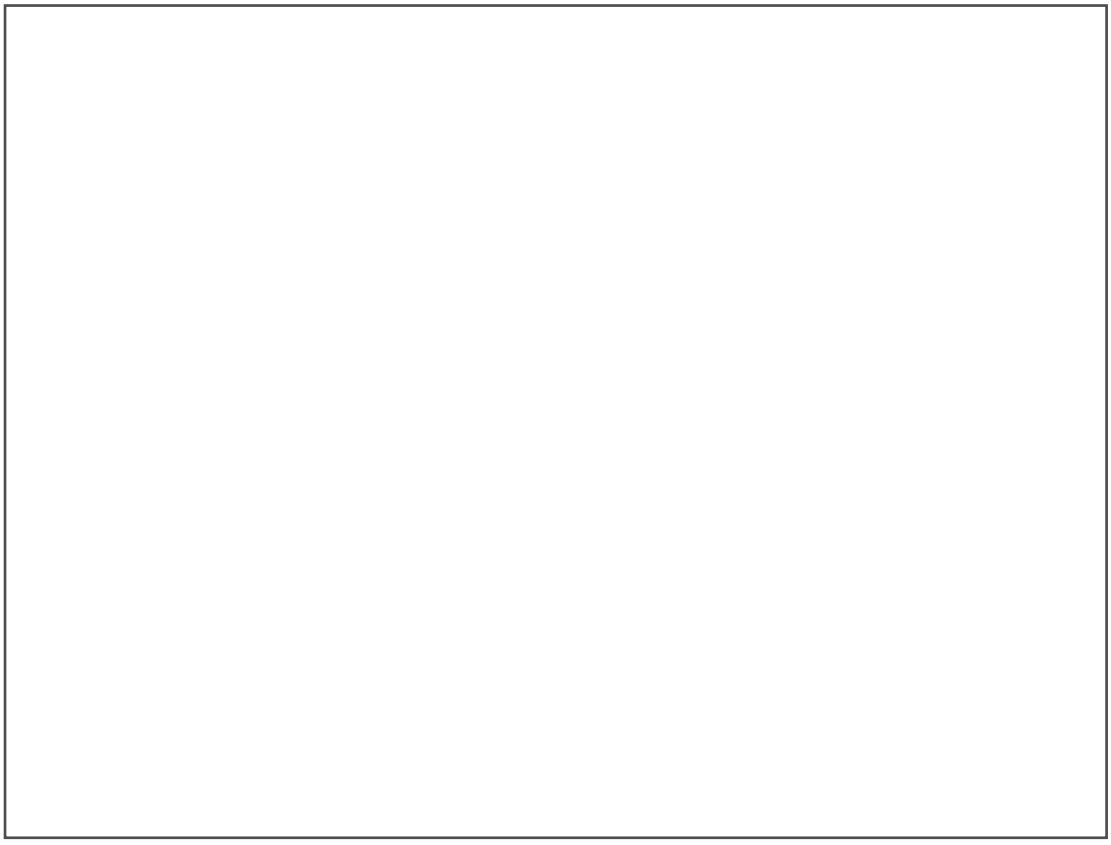


Figure 3: Creative Industries Segmentation
Source: TSB. 2009. Creative industries: Technology strategy 2009-2012. In *Creative industries.* Board TTS (ed.): Swindon, UK, p. 7.

The increased role of service activities within service sector as well as manufacturing firms brought into the focus issues concerning the competitiveness of service firms and how service providers develop advantageous positions in regards to resources and capabilities to stay ahead of the rivalry [pic](Miles, 2001, Droege et al., 2009). Along with the emphasis of the value that service industries contribute to the economic growth of the nations globally; academic research lacks in-depth understanding on how service firms build the competitive positioning, given that the peculiarities of services impede the understanding of the resources' structure and managerial procedures in service firms (Droege *et al.*, 2009). Moreover, the analysis of the MT use in service firms allows uncovering the impact of MT employment on both, processes and the final outcome of the production. Hence, this paper concentrates on the service segment of the UK creative industries: advertising, media and creative agencies.

Data

Multiple sources in relation to 6 cases have been collected systematically in order to describe the process of MT application strategically and operationally. Technical documentation in the form of project-management guidelines, internal reports on mobile-specific projects, companies' credential annual reports for the last three years[1], and social networking sites frame secondary sources aiming to complement the primary data. The primary source of data derived from face-to-face and web-based (using Skype, real-time asynchronous computer software) in-depth interviews (each interview lasting about one and a half hours) with key decision-makers. Decisions are the central focus of the case study approach (Yin 2009). Therefore, the choice of informants is justified methodologically as well as theoretically (strategic orientation of firms is set by key decision-makers). Further communication in the form of e-mails has been maintained with the respondents to clarify ambiguous aspects of the data throughout the analysis stage.

The interviews, primarily, aimed to understand and describe the process of employing MT in processes based on Sanchez' (2003) conceptualization of resources and managerial processes. Accordingly, questions in regards to the strategic orientation of the firm, management processes and operations, resources and capabilities in relation to MT-related activities have been addressed. Multiple case studies have been described and analysed. Despite the possibility to employ traditionally applied thematic or content analysis to data coding (Boyatzis 1998), the evolved grounded theory (GT) approach (Corbin and Strauss, 1990) have been used to systematically code and categorise primary data using a theoretically pre-defined themes. The novelty of this methodological choice is based on possibility to treat evolved GT as purely data analytical tool that introduces stage-by-stage procedures to examine qualitative data. Hence, the systematic approach to the data collection, analysis and interpretation is maintained. A computer-based software package for qualitative data analysis, NVivo 9.1, has been utilized to organize findings.

The study follows a homogenous sampling strategy geographically (South-west, England), business context (B2B), and the key portfolio of services (Table 2). Hence, the compatibility of the cases' profiles enables to conduct a comparative cross-case analysis of the results.

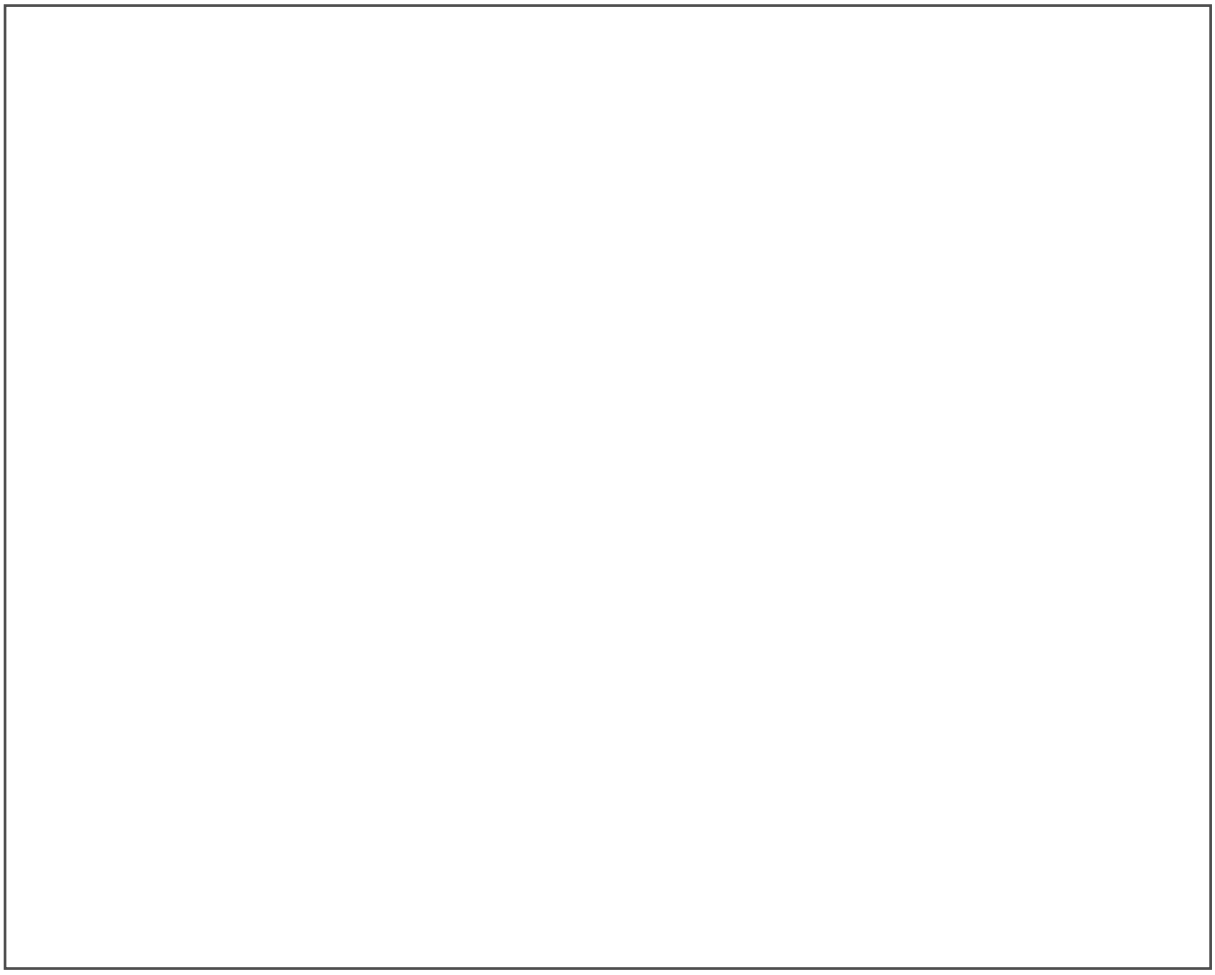
Table 2. A cases profile – selection criteria

FINDINGS – DISCUSSION

This study demonstrates that creative service firms are heavily engaged into the MT use on operational and strategic levels. However, the degree of this engagement varies across the sector with deployments of MT resources (Table 3) and coordination mechanisms of the MT resources employment depending on a firm's strategic logic. In line with Leonardi's (2011) work both, 'technical agency' of MT devices, software and systems and 'human agency' comprising the skills base and technical competences to use MT, form a firm-specific MT strategic capabilities (in the cases of 5 firms) that enable MT resources to be used advantageously. Case I, however, views MT as an operational tool, which facilitates the overall strategic direction of the firm to achieve the cost leadership. A detailed discussion of cross-comparative analysis is presented in the

next section.

Table 3. Mobile Technology Resources of a Firm: Cross-comparative Display



*"?" - Applicable; "-" – Not applicable
Comments to the Table: Learning curve economy, meaning that cost reduction is achieved with an increase in experience (Sanchez, 2003, p. 356).

Mobile Technology Resources in Creative Firms: Composition and Characteristics

MT resources constitute tangible assets in the form of technical infrastructure (systems, artefacts, software) and intangible human resources (skills base and roles designated specifically to MT-related processes). MT artefacts and software packages are means to the cost reduction in all 6 firms represented in this study (Table 3). "We have lots of PDA[2]s and tablets … there is a cost reduction associated" (Case I, RM).

However, the experience in adopting MT artefacts and software systems leads to the abilities of

the firm to in-house upgrades of software (associated with artefacts and project-management mobile systems), which substantially reduces the need in acquiring new-coming to the market MT devices and programmes. "You learn how to maximise the use of existing mobile technology … there is no need to run after the latest innovation" (Case IV, JB). This potentially limits an imitation of a firm-specific unique MT by competitors. Whereas, in most cases technology is seen as easily tradeable type of resources that needs continuous substitution by the latest version available in the market (Warren, 2007). Perhaps, this illustrates a considerable advantage of MT resources in comparison with stationary IT resources where the cost of upgrading the IT infrastructure is by far higher in terms of installation time, time to renew skills base for employing new technology, and price.

This is associated with another characteristic, which is the time restrictions impact on MT resources. In 4 cases out of 6 MT resources are affected by time restrictions meaning that with the time the cost of MT acquisition decreases. Heavy initial investments into building and deploying in-house MT infrastructure reduce the capital spending on buying new technology externally.

Above all, all 6 cases stress the significance of the MT resources in reducing the cost in relation to new processes: QR[3] codes and RFID[4] technologies in installation processes [Case I], cost reduction in information search and simultaneous update across departments [Cases III – VI]. "Five minutes worth of value… integrating mobile technology into new projects allows to save time for ideation and implementation, save energy, save resources" (Case II, EH]. Hence, the cost reduction is a generic feature of MT resources.

With reference to key attributes with which core resources need to comply, it is not surprising that MT resources are not discerned as imperfectly imitable by all cases analysed in this paper. MT is a new wave in technological developments. "I have to engage, involve with this engagement, dissolve; I cannot remain neutral. I have to engage with mobile technology… A lot of people in our business are finding tremendous amount of pressure on them to join the technological march" (Case II, EH). This signals that MT resources by the nature are primarily utilised to seize market-created opportunities for firms' benefits (Case II-VI). Although, creative firms are pioneering in the practices of embracing MT, the relatively large number of companies still operates in traditional way using stationary IT for design and service delivery processes. As a result, externally acquired MT resources are not safe from replication by rivalry firms. Nevertheless, there is a potential to make MT resources hard to copy for competitors as in cases V and VI. These firms aim to digitise completely the business and leverage MT resources to its fullest extent.

Despite the fact that replication of MT resources reduces the ability of MT resources to be a source of competitive advantage, majority of firms being studied (4 out of 6) come to the mutual agreement for MT resources being strategically useful and non-substitutable due to the uniqueness of experiences that are created.

> "It is definitely a strategic resource, nobody would question that… It is a resource we lean on very heavily and we use it for the best advantage all the time". (Case VI, MF).
>
> "I think opportunities are different because mobile technology creates a new value. These values would include social value, location value, entertainment value, utility value, information and personal value. All of these six values are inherited into a mobile. Other

stationary, fixed information or communication channels do not have all of these benefits. Mobile technology is unique." (Case V, SW).

Firm I is the only case from the sample that treats MT resources as solely of operational nature. In this firm MT is a tool that is utilised to perform similar tasks to other IT resources, only remotely. As a result, no new skills have been acquired in order to deploy MT resources apart from formal training for employees who work with MT purely for operational purposes such as day-to-day communication and project management. Therefore, established IT infrastructure and partnerships with firms who provide access to cost-free alternatives of MT resources have been indicated as complementary resources to MT. "If you cannot afford to tap into some of resources… you could always use somebody else's." (Case I, RM).

Partnerships are named as complementary to MT resources across all 6 cases. However, choice of partners differs depending on the strategic logic of a firm (Table 4). Market and customer orientation of firms (cases III and IV), therefore, emphasises the importance for customers to be an interrelated resource. Integration of market data and MT resources results in successful MT use practices. On the other hand, building and deploying an innovation capacity is based on maintaining strong relationships with technology developers (case V) and alliances with competitors (co-opetition) (case VI).

In order to summarise the nature of MT resources in creative firms and examine whether there is a tendency to develop the MT-related strategic capabilities, it is critical to understand relevant management processes, in which the MT resources are utilised.

Management Process of the Mobile Technology Use

Following the discussion initiated in the previous section, all 6 cases see relationship portfolios either with customers, suppliers (technical designers) or even competitors as complementary to MT resources. As a result, all firms studied in this paper share a common coordination mechanism of interrelated resources in the form of a relationship management (Table 4). However, case VI demonstrates that cross-functional coordination of creativity, which is embedded in all functions starting from communication with clients and ending with actual service development, led to strong innovation capacity and organic transition of traditional business into new business model. For instance, a digital mobile team has been established that works in collaboration with all other business units. Therefore, technology sensing ("you have to remember and track what makes mobile technology different from other ordinary digital and online technologies"), and creative competences ("experimentation and exploration" (Case VI, MF)) are manifested as critical for managing the use of MT resources. Creative competences are also emphasized in the case IV, where creativity appears as "the only legal thing to getting advantage" (Case IV, JB). "Combining that creativity with mobile technology is a very effective and efficient way of moving forwards" (Case IV, JB).

MT serves primarily as means to communicate. Findings in this study are consistent with central purpose of the MT use and reveal that MT resources facilitate effective communication processes within the firms as well as externally in all 6 firms. Moreover, MT resources by being a channel for remote transmission of information irrespective to users' location have been deployed by creative firms as a knowledge dissemination and integration tool (Table 4). Therefore, it is not surprising that marketing competences are identified and developed in order to deploy MT

resources because it facilitates market data generation, dissemination and integration across departments in all 6 firms.

In addition to the discussion about competences, which are critical to managing and deploying MT resources, it is interesting to note that technological competences are identified by creative firms (cases III – VI) as being significant in managing the use of MT resources in conjunction with new service development (NSD) competences. Comparing these findings against the strategic logic of firms III – VI, it is evident that identification and development of technological and NSD competences appear to be a result of either market-driven strategic orientation (cases III and IV) or the strategic aim for being an innovator and different from competitors (cases V and VI).

> "Just being cut and re-packaged, and sort of fit into a mobile format … that is not what is all about… Taking it on to a next level… It is a stalk and trade for us, innovating, using existing skills and acquiring skills that are out there, and, as a result, using mobile technology in a different way – innovative way". (Case VI, MF).

Table 4. Cross-comparative Display of Management Processes in relation to the MT Use

*"?" - Applicable; "-" – Not applicable
Comments to the Table: CRM – Customer relationship management; ROI – Return on investments into MT resources.

Finally, project management practices have similarities and differences among all 6 cases. In 4 firms (cases I – IV) the main coordinator of projects and tasks is an account manager who is treated as a buffer between creative team and clients. As a result, account managers use clients' objectives as means for allocating tasks and resources. Such practice is consistent and interrelated with market-driven or internally-driven strategic logics of creative firms. On the other hand, firms that aim to stay ahead of competition use firm-specific practices for a resource allocation as well as practices for empowering individuals to take on leading roles (cases V and VI). Consequently, staff satisfaction and return on investment into building strong MT infrastructure are achieved. Whereas, other 4 firms (cases I-IV) focus on measuring mainly operational efficiency through monitoring the time reduction and transparency of activities.

CONCLUSION

Based on the above considerations it could be argued that strategic capabilities can be identified in the way organisations operate and more importantly within the context of resource allocation and development of relevant management processes. This is very important in creating a sense of balance within the organisation when the latter attempts to achieve integration in its systemic and probably most dynamic aspects. The development of a specific conceptual approach of how resource allocation and management processes are utilised in the context of mobile technologies contributes mainly to the central discussion as to whether strategic capabilities are forceful enough in creating conditions of competitive advantage.

Based on our findings, we can conclude that strategic value in employing mobile technologies comes with the firm's emphasis on the essence and role of MT as a resource and most importantly

what kind of strategic logic firm adopts in order to utilise mobile technologies. As a result of MT deployment, which focuses on efficiency in internal and operational processes of business activities, firms clearly stress the importance of marketing competences such as relationship and communication management to control effectively portfolio of internal and external relationships using flexible location-based and time-independent networking capabilities of MT. Nevertheless, such operationally driven model of MT employment still requires creativity input to the process due to co-production or co-creation of products with other players in a network, once again using flexible networking MT technical abilities, which operationally facilitate the co-creation process. As an illustrative example, the ideas exchange process between a client and creative service provider can be considered where use of mobile device and cloud-based mobile software database allows to both actors remotely assess certain vision, introduce new concept and decide on a final concept irrespectively of both actors' location. Therefore, possibilities for flexible and efficient decision-making process are generated.

Market-driven strategic logic, whether it is generally triggered by changes in the demand structure or by specific client initiative to embrace mobile aspect in services provided to them, also uses flexible networking functionality of mobile devices and software to establish an interactive platform for remote decision-making and creative collaboration between the service provider and client. However, clients hold a superior position in the decision-making cycle considering that type of scenario. Moreover, firm extends the assessment of MT resources beyond its marketing competences but exploit other technical abilities MT holds such as mobile service delivery channel, market research data generation as well as explore opportunities for novel concepts to embrace and use MT where new types of content and new types of services can be created. Finally, strategic direction towards innovation production has also been a case for firms using MT to the fullest extend where firms devoted research and development investments to restructure existing IT infrastructure or establish new MT infrastructure consisting on devices, software systems and network protocols in order to create new modes of task and resource allocation (five stage process in Case V and business leveraging principles within MT-based business model in Case VI). Hence, continuous measurability and control of the investment policy effectiveness takes place in companies that strategically exploit and explore MT to develop new services and change business models.

The applicability of the Sanchez' (2003) framework to the context of MT shows some very important results on what characteristics MT resources possess. There is strong evidence that MT resources constitute tangible assets and intangible human resources. Additionally, all case studies used emphasised on issues of time restriction and cost reduction. There is a general consensus that MT can be replicated and are non-substitutable but more importantly strategically useful. This is important in order to identify the relevance of MT in justifying use of management processes to utilise MT resources. Accordingly, the study has developed an understanding of what management processes are implemented in creative firms to sense, use and upgrade strategically important for the MT employment resources and capabilities. Firstly, all firms studied in this paper share a common coordination mechanism of interrelated resources in the form of a relationship management. Secondly, MT serves the purpose of being communication vehicle. Finally, the role of management in running and coordinating specific projects within the organisations is stressed in the form of an account manager. As a result, account managers use clients' objectives as means for allocating tasks and resources.

The study points out a number of implications for managers in firms that already deploy MT and might use resources and management processes assessment templates based the Sanchez' (2003) framework in order to evaluate MT resources within the firm and record on what kind of management mechanisms are in place to coordinate such resources. The assessment in these cases can contribute to understanding of firm's current practices in deploying MT as well as planning of procedures to reinforce the state of MT use within the firm on both operational and strategic level. Moreover, firms that are not currently involved into MT employment practices can re-consider their options and see what strategic logic suits the business model of the organisation. In overall, this paper has a descriptive attempt to explore, analyse and evaluate the real world situation using conceptual in nature framework.

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[1] In cases where the firm is newly established, available credential reports up-to-date (2011) have been used for the analysis.

[2] PDA – Personal Digital Assistant

[3] QR code – Quick response code

[4] RFID – Radio frequency identification remote technology