

STRATEGIC ADOPTION OF ENTERPRISE MOBILITY SOLUTIONS: A READINESS-CENTRIC MODEL

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ABSTRACT

This article investigates the strategic decision to adopt enterprise mobility solutions. Integrating firm-level theories from the strategic management, information technology adoption, and business transformation literature, we develop a framework that conceptualizes this decision. We identify four salient areas that drive adoptions and reduce overall implementation risk: (1) justified business value, (2) strategic alignment, (3) reasonable cost/economics, and (4) an acceptable level of enterprise readiness. We discuss the importance of each of these areas, introduce and develop a multi-dimensional model of the relatively unexplored concept of enterprise readiness for mobility, and present findings from a global expert study.

Keywords: *Enterprise Mobility, Readiness, Strategic Planning, Global Expert Study*

INTRODUCTION

The logic for enterprise adoption of mobile information and communication technologies (ICT), such as laptops, smart phones and other handheld devices, is well recognized. Any technology that can deliver a tangible business benefit, by making information more accessible, is a good thing. The promises of mobile ICT certainly fall into this category [7, 19]. Today's implementations tend to be more point-specific, on productivity improvements and costs savings (e.g. email) rather than strategic and enterprise wide implementations that enable organizations to create new core competencies, gain and sustain competitive advantages, and define new markets.

Our conceptual model of strategic planning for enterprise mobility is rooted in the theories of innovation adoption, institutional behavior, resource-based organizations, and enterprise transformation [2, 16, 22, 23, 25, 27, 30]. It builds on the notion that strategic planning for enterprise mobility requires an understanding of the internal and external drivers to adopt and implement it, the organizational means and capabilities to facilitate the overall process, and the evaluation of potential near and long-term value and impact [6, 26].

Drawing on these theories, we identify four strategic areas that need to be considered when planning for enterprise mobility and are illustrated in Figure 1: (1) justified business value, (2) strategic alignment, (3) reasonable cost/economics, and (4) an acceptable level of enterprise readiness. The first three

elements of our model are the most commonly investigated areas when planning for ICT. However, one element that was found relatively unexplored was the notion of enterprise readiness. Enterprise readiness represents an organization’s preparedness to adopt and implement new ICT. Even if the business value is there, the costs make sense, and the implementation of mobile ICT aligns well with the overall business strategy, it would not be wise to pursue adoption if the enterprise is not ready for it. In fact, many ICT implementations have failed due to a lack of enterprise readiness. A strong case in point is the sheer number of failed enterprise resource planning (ERP) implementations. The assessment of enterprise readiness enables executives and decision makers to identify organizational deficiencies, make appropriate changes and improvement, this reducing the risk associated with mobile ICT implementation. We therefore believe that enterprise readiness is a critical element in the strategic planning process for enterprise mobility.

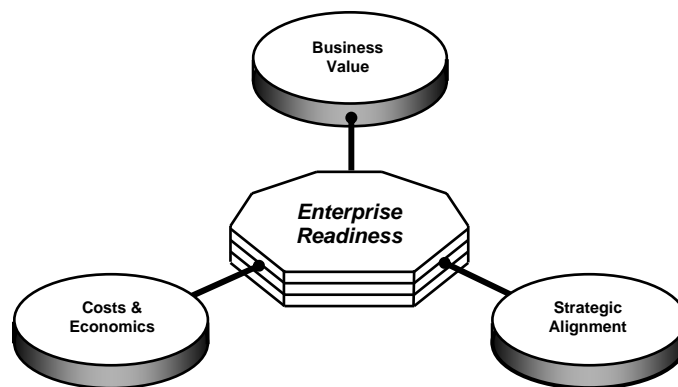


Figure 1. Critical Areas of Strategic Planning for Enterprise Mobility

The purpose of this article is to develop a conceptual model of core elements that can aid in the strategic planning for enterprise mobility with a particular focus on enterprise readiness. We introduce and develop a multi-dimensional model of the relatively unexplored concept of enterprise readiness for mobility, and present findings from a global expert study. The article concludes with important theoretical and managerial insights to the strategic planning process and aids in the investment justification of enterprise mobility solutions.

A READINESS FRAMEWORK FOR ENTERPRISE MOBILITY

In order to minimize the associated risks and maximize the potential benefits of enterprise mobility solutions, organizations must thus not only understand the value and economics of enterprise mobility solutions, but also carefully evaluate and measure their level of “readiness” for enterprise mobility. Readiness assessment enables decision makers to become more knowledgeable about the characteristics of mobile ICT, form attitudes about it, and make a decision regarding the fit between the technology and the organization.

Extending the ideas from the innovation adoption, strategic management, and resource-based theory literature, we define readiness for enterprise mobility to be an assessment of an organization's (1) preparedness, (2) potential, and (3) willingness to adopt and implement mobile ICT. We further argue that readiness for enterprise mobility is assessed along eight salient dimensions: (1) technology, (2) data and information, (3) process, (4) resource, (5) knowledge, (6) leadership, (7) employee, and (8) values and goals. A complete enterprise readiness assessment will thus involve an evaluation across the three layers - preparedness, potential, and willingness – and along all eight readiness dimensions (see Figure 2). Preparedness is assessed for all eight dimensions; potential is evaluated along the process, employee, and value and goals dimensions; and, willingness is assessed along the employee and leadership dimensions.

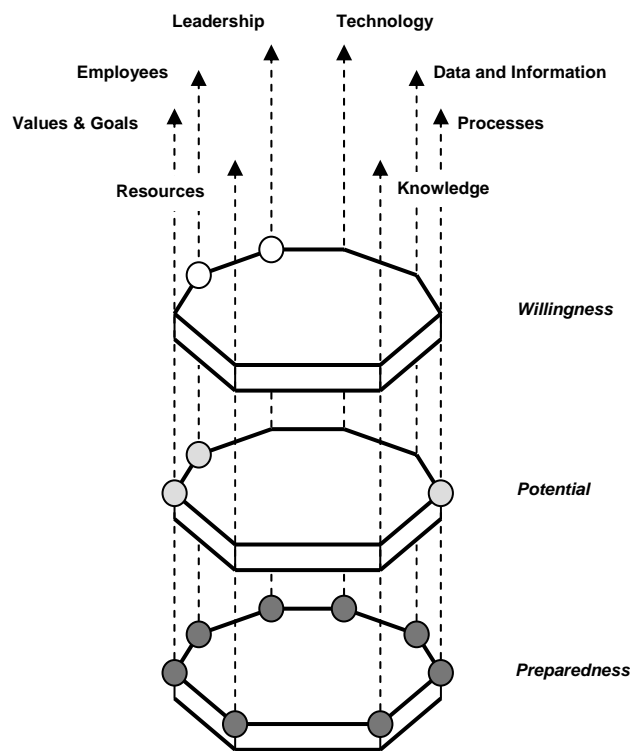


Figure 2. Model of Readiness for Enterprise Mobility

Support for each of the eight dimensions and associated assessment indicators is provided as follows:

1. **Technology Readiness.** Technology readiness refers to the ability of the underlying technology infrastructure (network services, hardware, software, and security) to support the adoption and implementation of mobile ICT. A robust, comprehensive, and open-standards oriented technological infrastructure, flexible and scalable to accommodate any change and emerging requirements, leads to a higher level of technology readiness.

2. Data and Information Readiness. Data and information readiness refers to the ability to federate data from multiple sources, provide a single view of enterprise data, and make it available to any system at the time when it is needed. Higher levels of data and information readiness is achieved through a consistent, reliable, and secure data and information infrastructure that provides both synchronization and data recovery capabilities for highly disconnected and variable environments.
3. Process Readiness. Process readiness refers to the ability of organizational processes (e.g. human processes, information processes, organizational change processes, etc.) to facilitate the adoption and implementation of mobile ICT. Well-defined, documented, managed, repeatable and optimized processes indicate a high level of readiness along this dimension.
4. Resource Readiness. Resource readiness represents an organization's ability to support mobile ICT adoption and implementation. These resources may include (1) financial, (2) human, and (3) technical assets. The availability of resources for current and future plans is an important aspect in successful assimilations of mobile ICT.
5. Knowledge Readiness. Knowledge readiness reflects both the general and specific knowledge required by decision makers for mobile ICT adoption and implementation. General knowledge includes awareness and understanding of the state of emerging ICT, ICT-related decision-making processes, and previous experiences with ICT adoptions and implementations. Specific knowledge encompasses an awareness and understanding of the opportunities, challenges, barriers, and opportunities that come with the adoption and implementation of mobile ICT. This will include an understanding of mobile ICT characteristics, its potential impact on strategy, processes, and people, and the changing enterprise mobility market.
6. Leadership Readiness. Previous studies have shown that one of the most critical factors in technology adoption decisions is the support and vision of top management. Leadership readiness, hence, reflects an appropriate level of skills, innovativeness, knowledge, and risk orientation of top management. It also indicates the level of support and strategic vision that management offers in association to the adoption and implementation of mobile ICT. Leadership needs to ensure that mobile strategies fit with the way they are doing business rather than changing their ways of doing business to fit the strategy.
7. Employee Readiness. Employee readiness reflects the end-users attitude towards change, their level of skills, and perceived benefits by the end-users. A high level of employee readiness can lead to a faster adoption and diffusion of mobile ICT.
8. Values & Goals Readiness. Values and goals readiness reflects the fit between existing structural and nonstructural enterprise characteristics and mobile ICT characteristics. Structural characteristics may include organizational size, centralization, formalization, autonomy, specialization, functional differentiation, strategic objectives and goals. Nonstructural characteristics may include culture, bureaucracy, task environment, and political climate.

It should be noted that all of these dimensions have an influence on each other and must therefore be considered as a whole. A lack in one dimension may influence the overall enterprise readiness for mobile ICT. Similarly, a lack of readiness in one of the three layers will also result in a lower degree of

enterprise readiness. As such, a comprehensive assessment of all dimensions on all layers should be conducted.

RESEARCH METHODOLOGY

Since the concept of enterprise readiness is not very well defined and the literature is relatively thin compared to the vast experience accumulated by experts and practitioners in adopting and implementing mobile ICT, we felt that it would be appropriate to use an exploratory, theory-building research approach to validate our initial theory of readiness for enterprise mobility. This article thus uses a mixed, two-stage qualitative and quantitative research approach to investigate the salient dimensions of readiness for enterprise mobility and their associated assessment indicators. In the first stage, relevant readiness dimensions and assessment indicators were identified using a qualitative approach. Dimensions were primarily derived from the firm-level innovation, information systems, and strategic management literature and through a series of interviews with C-level executives. The second stage consisted of a two-phase expert study using a modified Delphi approach.

DATA ANALYSIS AND RESULTS

The data obtained from our experimental design of the 27 readiness profiles for enterprise mobility was analyzed using several statistical tests. It is evident from a first glance at our results that all readiness dimensions proposed in our conceptual model play a very important role in determining enterprise readiness for mobile ICT.

Our main regression model for the full sample reveals several important observations. First and foremost, it confirms that the leadership dimension contributes the most to enterprise readiness with 27%. It is followed by Technology (17%), Data and Information (13%), Resources (12%), and Processes (10%). While the other dimensions may not contribute as highly as the aforementioned dimensions, all readiness dimensions are significant at less than the 1% level. Our analysis also revealed a very high R^2 , leading to the conclusion that the dimensions included in the overall model describe readiness for enterprise mobility well. Further examination of the interaction plot does not reveal anything further, which is to be expected due to the high variance explained by the main effects.

Table 1. Key Results for Full Expert Sample

Results
<p>Regression Equation Readiness = - 0.344 + 0.255 Tech + 0.226 DataInfo + 0.201 Proc + 0.199 Know + 0.221 Res + 0.330 Lead + 0.184 Empl + 0.0796 ValGoals</p> <p>S = 0.0875818 R-Sq = 98.1% R-Sq(adj) = 97.2%</p>

While the full sample model certainly provides insight to the salient dimensions of enterprise readiness and their relative importance, we gain a deeper understanding by examining the subgroups of our sample. In particular, we distinguished between the following five groups: (1) Academics vs. Industry, (2) US vs. Global-Based Firms, (3) Small vs. Large Firms, (4) Firms with or without Mobile ICT Deployment, and (5) Firms with and without a Mobile ICT strategy. Detailed results are available from the author upon request.

CONCLUSIONS

Enterprise mobility is not merely a fad; it has become a reality in a wide-range of organizations and industries. Mobile ICT clearly offers a plethora of lucrative value propositions that will impact and fundamentally transform business processes, organizations, and supply chains. As mobile ICT continues to evolve and mature, enterprises must prepare themselves for a more “mobile” future.

This article developed a multi-dimensional model of the relatively unexplored concept of enterprise readiness for mobility. Our findings from a global expert revealed several important insights into the relative importance of each of the eight dimensions when planning for enterprise mobility. Across the sample, leadership was considered the most critical dimension when planning for enterprise mobility. This was followed by readiness along the technology, data and information, and process dimensions.

This article presents an important first step towards understanding the process of strategic planning for enterprise mobility and provides the basis for several interesting research opportunities. Potential extensions of this work include an empirical assessment of the business value of enterprise mobility solutions, an investigation of key assessment indicators for each of the enterprise readiness dimensions, and the development of analytical tool that can aid decision makers.

REFERENCES

- [4] R.C. Basole "The Value and Impact of Mobile Information and Communication Technologies," *Proceedings of the IFAC Symposium on Analysis, Modeling & Evaluation of Human-Machine Systems*, Atlanta, GA, 2004.
- [5] R.C. Basole, R.A. DeMillo "Enterprise IT and Transformation," In *Enterprise Transformation: Understanding and Enabling Fundamental Change*, W. B. Rouse (Ed.), John Wiley, 2006.
- [6] R.C. Basole, W.B. Rouse "Towards the Mobile Enterprise: Readiness and Transformation," In *Encyclopedia of Mobile Computing and Commerce*, D. Taniar (Ed.), IDEA Group Publishing, Hershey, PA, 2007.
- [7] R.C. Basole "The Emergence of the Mobile Enterprise: A Value-Driven Perspective," *Proceedings of the 6th International Conference on Mobile Business (ICMB)*, Toronto, Canada, 2007.

A complete list of references is available upon request from the author.