

Handbook of Research in Mobile Business: Technical, Methodological, and Social Perspectives

Second Edition

Bhuvan Unhelkar
MethodScience.com
University of Western Sydney, Australia

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Chapter IX

Strategic Elements for the Mobile Enablement of Business

Keith Sherringham
IMS Corp, Australia

Bhuvan Unhelkar
MethodScience.com & University of Western Sydney, Australia

ABSTRACT

The Internet wave that swept through business is likely to be seen as a ripple in a pond compared to the changes that are predicted from the adoption of mobility into business. Irrespective of industry sector, the mobile enablement (wrapping business around mobility) of business is expected to bring many opportunities and rewards; and like the Web enablement (wrapping business around the Internet) of business, a few challenges as well. Across all business areas, mobile business will need to support a mobile workforce, the operation of call (service) centres, and transaction processing and collaboration of virtual teams. Mobile business will also impact product offerings, the management of consumer choice and the focusing of communications with a sticky message. Mobile business will drive changes in management, revisions of business operations and the alignment of Information Communication Technology (ICT). This chapter discusses some of the common but important strategic elements to the successful mobile enablement of business.

INTRODUCTION

Although some businesses are starting to offer mobile services and others are preparing for mobile business, many organisations are still formulating the strategies and plans necessary for the mobile enablement of business. Mobile enablement of business can be understood as wrapping of the business around the core of mobile technologies. Organizations are also

identifying the necessary processes and infrastructure changes to support mobile business. Like the Web enablement of business (wrapping business around the Internet) and the integration of the Internet and Web sites into business, common issues exist across all business areas and industry sectors in the mobile enablement of business. Excluding the industry specific market and consumer trends, some of the common and critical strategic business considerations

upon mobile business are reviewed in this chapter. The ability of current Information Communication Technology (ICT) operations to support and deliver mobile business (Sherringham 2008) are of particular significance in this discussion.

BUSINESS CONSIDERATIONS IN MOBILE ENABLEMENT

Across industry sectors and many areas of business there are common elements that are required for the effective and efficient mobile enablement of business. Similar to the initiation of any other services and business changes, an effective strategy with a clear business case and well-defined expectations and outcomes are required for the mobile enablement of business.

Resembling the adoption of the Internet, the integration of mobile business will probably follow a phased implementation according to pragmatic business need with a proven business case to lower costs or grow revenue. Other considerations like the ability of the business to manage the change and the time it takes to optimise ICT necessary to support mobility would also drive a pragmatic phased approach.

The mobile enablement of business, including the delivery of services to mobile devices, is a business operation and not an ICT activity and unlike the initial adoption of the Internet that was often driven by ICT, businesses are driving the adoption of mobility by the business for the business. The fact that changes in ICT may be required is a consequence of the process (Unhelkar 2008a). ICT is not the driver of the mobile enablement process; changing market forces is the driver. The business is responding and ICT is the enabler of mobile business.

The extent and range of services in need of mobile enablement are expected to be approximately the same as those that were in need of Web enabling. Mobile enablement will be used to provide services on behalf of the business, to external parties, as well as optimising operations within a business.

For external customers a phased approach can be adopted with the alerts and messaging services being the first to be provided. Additional services for simple transaction processing and validation can be made available next. A focus on the provision of business critical information may also be a priority. As the capability of the business to provide and support mobile business grows, more complex processes can be progressively supplied. Customer interaction

will be a major driver in mobile business and as call centres transition to centres of service excellence, the ability to service mobile business will become a key plank of successful customer service operations (Unhelkar 2008b).

For internal needs, access to contact details on any device anywhere anytime may be the initial requirement; followed by the capabilities of ordering, purchasing and invoicing. Messaging, alerts and information access may come next, with support for advanced transaction processing provided subsequently. The need for collaboration and the power of the mobile device in business collaboration whether it is between employees and/or with channel partners will also come to the fore.

The key to the success of mobile business initiatives will be the business integration, change and the ability to guarantee service delivery. Common elements of the change required include:

- **Optimisation of process:** Resolution of the new processes and how business will operate.
- **Business logic:** Resolution of the business logic required to ensure the functioning of mobile business.
- **Data management:** Addressing the data management issues necessary.
- **Training:** Training of all relevant parties.
- **Support:** The support infrastructure provided to staff and customers to support mobile business.
- **Performance:** Realising the promised cost savings or revenue opportunities.
- **Communication:** Communication to all relevant parties on what is happening, how it is happening, the benefits and how to do things.

SIGNIFICANCE OF THE MOBILE DEVICE IN MOBILE BUSINESS ENABLEMENT

The significance of the mobile device within mobile business lies not only in the ability deliver innovative services to new markets but in the ability of the mobile device to drive out significant operational efficiencies. Any mobile business strategy and mobile enablement plan leverages the two key considerations of the mobile device: screen size and location.

Screen Size - When compared with the more palatial desktop presence, the smaller screen size

of a mobile device is often seen as a barrier to the provision of mobile business services. Actually, the smaller screen of the mobile device drives a competitive advantage because of the elimination of the need for advanced information management skills (versions, locations, formats and applications) that are often currently required of users when completing even the most rudimentary of tasks. The small screen size of the mobile device makes it difficult for people to juggle information on the device screen, thus driving an organisation of and an alignment of information to context before delivery to the mobile device. Conversely, the large screens of the desktop perpetuate the information management inefficiency with a resulting higher cost of operation and un-assured service delivery.

The small screen of the mobile device also benefits business through a greater adoption of standardised process. By presenting the right information at the right stage in the process to achieve an outcome, users on mobile devices are delivering results and not spending their time searching and trying to define and remember processes - as often occurs at the desktop. Again, the large screens of the desktop often perpetuate inefficiency. For a user to work effectively on a mobile device, the rendering of data needs to be in the context and tightly integrated with work-flow (Sherringham and Unhelkar 2008a).

The small screen of the mobile device is expected to realise the operational efficiency for business - that of effective design in applications and user interfaces. For mobile business to work, the interface on the mobile device has to be accepted by users. Through the use of mobile devices, innovation and rationalisation in applications and user interfaces will be seen with a cascading impact upon the desktop. Ultimately one common interface shall exist across both the mobile device and desktop application with all of the advantages that such a standardisation would bring.

Realising the changes necessary to conduct mobile business on mobile devices may take some time and some innovation and thinking, but overall, the need to support a small screen is likely to drive significant business improvement as well as creating mobile business opportunities.

Location - The power and convenience of mobile business is often seen to lie in the absence of a dependency upon location, i.e. people do not have to be physically in the office or at a specific physical location in order to conduct business. When it comes to the provision of information, however, location is very

important because location is part of the information and service context. Offering people in one city a discount on products in another city is often counter productive. The location context is not just a matter of personal preference but also of device location.

The significance of location in the provision of service and context for the service needs to be included within mobile business strategies and implementation plans.

MOBILE ENABLEMENT IMPACTING BUSINESS PROCESS

Aligned with the change of processes brought about the screen size of the mobile device are the changes to processes necessary to support mobile business. The mobile enablement of business will see changes in how the business operates, variations in the processes required to support mobile business and modification in the detail of the business processes and in the transaction operations itself, i.e. mobile business redefines the knowledge worker assembly line (Sherringham 2005).

The Web enablement of business operations often highlighted inefficiencies within current business processes and mobile enablement is expected to realise further efficiencies. Much of the benefit is expected to come from clearly defining the steps of a process, how errors and exceptions are handled and in organising the information necessary to support these processes. An established process that guarantees service delivery can be optimised to work on mobile devices but processes that are not optimal within a desktop environment will not effectively transition to the mobile device.

For operation on mobile devices, business processes need to span multiple mobile devices. Issues to be resolved include:

- How will this process work on a stand alone device?
- How will this process continue if connection to the network is lost?
- How will this process resume when connection to the network is established?

Proven business experience shows that if mobile business is to be effective, these process issues need to be addressed from a business, a process and a technological perspective. Resolution of the required

changes to business processes is an integral element of any mobile business strategy and mobile enablement because of its significant impact upon cost, time to market and expected return on investment.

An inevitability of mobile business will be the new requirements for audit, risk management, governance and compliance. Whilst any requirements are still to be defined and are likely to vary with industry sector, the need to keep records, to store messages and to track authentications from mobile devices will be common. Any audit, risk management and compliance considerations would impact upon both the demands for disk space storage as well as design considerations for mobile business solutions.

Within audit and compliance, lies the consideration of privacy requirements. With mobile business, privacy issues around employees, channel partners and customers becomes much more complicated. The simple act of knowing the location of a device and storing that data has privacy implications, particularly if the data are used outside of an organisation and for uses other than what it was collected for. As with other areas of mobile business, the legislation around privacy is still evolving but it will feature prominently within business operations.

The mobile enablement of business also brings alteration to business continuity management and disaster recovery management. Mobile business adds another dimension by adding complexity, whilst simultaneously providing tools to facilitate business continuity management. During a major incident, however, mobile devices may be rendered useless because of a loss of network connectivity.

One other element in business process necessary to support mobile business is that of authentication. The definition of mobile business services to be provided is significantly impacted by the authentication solution used. Authentication at the transaction level, the application level, the device level and the network level may all be required.

For financial transactions and payments, a higher level of authentication and security is often required. Effective authentication may include:

- User entering a user name and password for a service, e.g. banking.
- User is then called on the listed mobile device to advise that access is required (IVR solutions).
- User is then prompted to key in a PIN in real time that is validated before approval is provided.

The PIN is known only to the user and is NOT sent as an SMS message at time of login.

As well as mitigating risk (need user name and password, the listed mobile device and a PIN), this approach provides a level of security not achieved through SMS. SMS is suitable for alerts and messaging but is not preferred for transaction authentication. Resolution of authentication is key to solution design with an impact upon cost, offering and time to market.

ICT ALIGNMENT WITHIN MOBILE ENABLEMENT

The ability of ICT to deliver the requested services in an effective and efficient manner is a critical element of any mobile business strategy and mobile enablement (Wu and Unhelkar, 2008). Similar to Web enablement, those defining mobile enablement strategies should not underestimate the time it will take ICT to be ready to deliver the services required of ICT.

Many current ICT operations are already rising to the challenge of providing standardised environments and the capability to guarantee service delivery. The demands of mobile business will only serve as an additional driver for standardisation. The major areas to consider within ICT when setting mobile business strategy include: mobile device management, data management, the messaging environment, applications used, security and enterprise architecture including the network capabilities².

Mobile Device Management – The management of mobile devices has several business impacts. When providing services to external customers, a business has little control over the mobile devices used and supporting legacy devices, multiple devices, multiple systems and multiple applications is just the cost of doing business.

For services within an organisation, all of the advantages from a standardisation of the mobile device can be realised. Such a standardisation lowers the costs of deployment, maintenance, support and administration of the device; the services provided; the applications used and the support provided around the mobile business services. Any effective mobile business strategy would include a standardisation of the mobile device and where required, a standardisation of the desktop environment with all of the resulting impacts upon ICT (Kamogawa and Hitoshi 2004).

Realising mobile business shall see the deployment of effective solutions (technology and processes) for:

- **Asset management:** The mobile device is an asset of an organisation and like any other asset, its existence, occurrence and value need to be tracked and managed.
- **Device tracking:** Mobile devices are by nature prone to being lost and/or taken out of an organisation. Some form of device tracking solution is required^b.
- **Device administration:** Solutions are needed for the administration of the mobile device including its initial and ongoing configuration, operating system and application deployments, and upgrades and updates.
- **Stand alone operation:** Issues around a mobile device working as a stand alone as well as getting updates when the device is connected to the network need to be addressed.
- **Data synchronisation:** Solutions for the synchronisation of data between the mobile device and the original data source are required. This is to include versioning, shared access and concurrent usage.

Data Management - Other aspects of data management that impact directly on any mobile business implementation include:

- **Device storage:** Current mobile devices are less than suitable for long term data storage. Whilst the capacity to store data on a mobile device is likely to increase, any good mobile business strategy and implementation should assume that extended data storage on the mobile device shall NOT occur. Some short-term storage is obviously needed but a “no data storage on mobile device” strategy is the preferred approach. The business importance of “no data storage on mobile device” is further seen when all of the issues of trapping and the isolation of data on the desktop and the resulting business issues are considered.
- **Consolidated repositories:** Effective and efficient mobile business requires that data are single sourced from virtual consolidated repositories. The use of “virtual consolidated data repositories” compliments the “no data storage on mobile device” solution. These two

aforementioned fundamental principles are key to any mobile business strategy with subsequent impacts upon processes, services, deployment times and costs.

- **Storage demand:** The demands of mobile business will further drive the ever-increasing demand for disk space storage. The use of virtual consolidated repositories for single sourcing data and the need to record many of the transactions and messages being sent to and from any device anywhere anytime are key elements of the demand. Other significant demand will come from data streaming, video conferencing and messaging, and images and file sharing - all driven by the needs of mobile business.
- **Data synchronisation:** The synchronisation of data between mobile devices and consolidated repositories poses several issues in conducting mobile business and a resolution of synchronisation is important to services that require a “write element”. Since data synchronisation is less of an issue for broadcast and query services (read only), many mobile business strategies and implementations would probably see broadcast and query type services provided first.

All of these data management issues impact upon the decisions of market offering and mobile enablement strategies.

Messaging Environment – As increasing demands are made from mobile business, the need for a consolidated messaging environment that guarantees service delivery across the channels comes to the fore. The model for this environment is the FedEx model. FedEx guarantees the delivery of parcels (packages) and mail (messages) as follows:

- There is a quality of hand-off to FedEx and without this quality of hand-off, the parcel is not taken, i.e. responsibility is at source and exception processing returns the package to source.
- FedEx has a scalable, reliable, industrial strength solution for the transfer of packets between defined points.
- There is a quality of hand-off from FedEx back to the customer for acceptance of the package.
- FedEx separates the acceptance, moving, storage and hand-off of the package. FedEx then has systems for error handling, reporting and archive of information.

- The environment and operations are standardised.

Whilst the parallel between the FedEx model and what is required of a consolidated messaging environment is self-evident, it is often the absence of a consolidated messaging environment that impacts upon mobile business and the offerings that can be taken to market.

Applications – Even though many core business applications have now been successfully Web enabled, mobile enablement will bring some additional challenges. In addition to the issues discussed previously on mobile device screen size, many business applications have been written from a features perspective assuming the palatial screen size of the desktop and not from a process perspective needed on a mobile device. The mobile enablement of business will drive a transition from feature rich applications to process orientated applications (Ghanbary 2006).

Security - The security issues around mobile business and mobile devices just add to the already complex security needs seen within business. Mobile business services can only be provided when the customer has the confidence to their security. A number of approaches to mobile transactions security have emerged, including multi-channel authentication that treat the channel for validation of security and the channel for delivery of transactions as separate from each other.

Enterprise Architecture - From all of the ICT considerations (screen size, process, authentication, device management, data management, messaging, security and applications) comes an assessment of the ability of an enterprise, its architecture and its ICT infrastructure to deliver mobile business. This assessment will in turn impact upon the business decisions for mobile business offerings (Unhelkar 2005).

If the infrastructure and solutions provided by ICT is highly standardised and is currently an effective assembly line for knowledge workers (Sherringham and Unhelkar 2008b), then a business has a competitive advantage and can readily adopt mobile business. The inability of ICT to deliver the knowledge worker assembly line may be a significant barrier to mobile business achievements.

PROVISIONING AND BUSINESS ALIGNMENT

Even though mobile business is still evolving and many of the market opportunities and product offerings are still to be defined, mobile enablement will need to include a provision for some of the trends identified in Table I and discussed in this section.

Mobile workers - The image of wandering knowledge workers creating a mobile office wherever needs dictate, completing tasks and then returning occasionally from the field all frazzled back to the office may be a bit simplistic but this will be close to the mark for many knowledge workers. Supporting mobile knowledge workers is a major plank of mobile enablement.

From call centres to centres of service excellence – Mobile business will drive further change within call centres. Call centres will be about having conversations with customers to meet needs, to problem solve and to manage expectation. Call centres will be centres of service excellence to value-add knowledge and to solve problems. These service centres will operate across geographical boundaries, seamlessly integrating globally to deliver valued services. Service centres will utilise and respond to the unified messaging environment, including mobile devices. This will increase the need for more skilled resources, fluent in communication across channels and who are proactive problem solvers. The management structures and business processes of the service centres will need to change accordingly.

Transaction processing - As more transactions are processed by ICT and less manual intervention is required; the skill set changes from routine transaction processing to pro-active problem solving when things go wrong. Resources are freed to focus on advanced and high value transaction processing, which cannot be done by ICT alone, and to manage customer expectation. All of these require more highly skilled workers with advanced problem solving, superior communication skills and the ability to leverage mobile business.

To operate and manage each part of the process, ever increasing specialisation is required, but when it comes to end-to-end problem solving and ownership of problems, generalists who can work with each of the areas of business are required. A balance of specialists and generalists is required in the workforce. Mobile

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Table I. Summary of ICT trends in mobile business

Trend	Description	Business impact
Mobile workers	Knowledge workers using multiple devices and operating in diverse environments to meet customer needs.	The ICT infrastructure necessary needs to be implemented as part of any mobile business strategy. Complimented by necessary changes in process and management frameworks.
From call centres to centres of service excellence	Call centres change to centres of service excellence interacting with customers across all channels of communication, having conversation with customers to solve problems.	The need is for more skilled resources, fluent in communication across channels and who are proactive problem solvers.
Transaction processing	More transaction processing done by ICT. Need problem solvers to intervene when it goes wrong and staff freed up to focus on high value transactions that cannot be done by ICT.	Need to skill up the workforce and nurture proactive problem solving.
Virtual teams	Work becomes more project based with participants from many areas of business working collaboratively in virtual teams to deliver outcomes.	Mobile business strategies are needed to provide the necessary integrated communication, processes and information sharing to allow teams to work. A greater focus on soft skills is also required.
Planning	As the mobile business environment drives increased flexibility, there becomes a greater need to plan. The planning is about a framework that empowers delivery and providing infrastructure that allows people to adapt to meet customer needs.	Planning needs to provide clarity, the destination and the framework so that people are empowered to deliver. Revisions of planning processes, skilling of people and changes in performance measurement will all be required.
Management framework	Mobile business will pose new challenges for managers driving the emergence of new methods of management, new operational frameworks and new levels of accountability.	New management frameworks and skilling of management to manage a mobile and highly skilled workforce are required.
Product offering	Products and services come to market faster, have a shorter life expectancy in the market and need to be targeted to ever more specific market segments.	Supporting innovation and creativity and implementing organisational structures and culture to support innovation and creativity becomes part of a mobile business strategy.
Consumer choice	Customers increasingly look to the trusted adviser to lead them through the ocean of choice and complexity and to bring them safely to the wise outcome.	Changes in sales model are required, together with re-skilling of the sales team and a focusing of the message across channels.
Increasing expectation	Customers are requiring ever increasing levels of gratification and want them faster.	Re-skilling of staff and change of processes and management to ensure effective service delivery.
Getting the message across	Need to get a message across different channels in an environment of information overload where people tune out to cope and have shorter retention spans.	Need to communicate sticky messages with a requirement for skilling in effective communication across channels.

enablement requires change in the human resource skill set and expertise mix.

Virtual teams - With liberation from routine transaction processing, roles will have a greater customer engagement, a focus on improving service and contain more business optimisation activities. Much

of this work will be project or piece specific, with teams coming together to achieve an outcome and then disbanding to work on the next one. The teams will often be virtual teams, collaborating globally across the time zones, with colleagues from diverse areas of

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business at various levels all drawn together to deliver outcomes. Mobile devices and supporting mobile business play a critical role in such collaboration.

Business will be about pulling together the resources from out-sourcers, off-shorers, in-house and others; bringing them together and ensuring delivery. For business it means new management strategies and innovative approaches to human resource management, hiring and career management. This will mean changes in the way out-sourcers and off-shorers have been engaged to-date and it will mean that many careers and multiple jobs will be the norm. Core staff will be retained in-house to drive innovation, to set strategy and framework, and to manage outcomes. Ownership and pro-active management of issues will be pivotal to performance and success. For out-sourcers and off-shorers all of this means many new and exciting opportunities for the provision of value-added services.

Planning – Mobile business requires that the flexibility necessary for operation in collaborative teams and centres of service excellence be provided. A flexible environment requires rapid communication, expeditious dissemination and management of information and working from diverse environments (home, office, coffee shop). Paradoxically, working in such vibrant and dynamic environments will require greater planning and NOT less. The planning is about clarity of vision, the destination and the framework. The planning is about providing infrastructure that can be readily used to meet customer needs. Management is then about empowering professionals to deliver the required outcomes as they see best, allowing decision making at source to meet customer needs. The planning process and implementation will leverage the power and capability of mobile devices and mobile business.

Management framework – To ensure success in the diverse mobile business environment, management needs to become more effective. Risk aversion, problem passing, lack of ownership and poor accountability are not sustainable in a mobile business environment. Management requires clarity of vision, setting the framework and managing to outcomes. Management will become more facilitative and management requires effective communication and skilling of the workforce across the communication channels. New management practices will be developed and implemented, with a revision of management framework and management skills.

Product offerings – In the mobile business environment, products and services come to market faster, have a shorter life expectancy in the market and need to be targeted to ever more specific market segments. Since competitors can now more readily copy and imitate products and quickly modify them to present new offerings, the need to differentiate and innovate will drive a greater use of mobile devices and collaboration. Supporting innovation and creativity and implementing organisational structures and culture to support innovation and creativity becomes part of a mobile business strategy.

Consumer choice – Consumers like choice and consumer demand drives market diversification. Paradoxically, consumers do not handle choice well. For all but the simplest of consumer decisions, customers can often feel overwhelmed from all of the choices available and often fear making a decision. Customers increasingly look to the trusted adviser to lead them through the ocean of choice and complexity and to bring them safely to the wise outcome.

Mobile business strategies are not about providing ever-increasing amounts of information and bombarding customers with choice. The effective mobile business strategies are about supporting customers to make wise decisions. This means focusing the message, a greater focus on soft skills as well as skilling of and changing the role of the sales team. The small screen size of the mobile device is very conducive to the “guiding to wise outcomes” approach.

Increasing expectation – The consumer cycle of product diversification, speed to market, and customer choice is serving to increase customer expectation. Customers are expecting more for less, expecting instant availability and an ever need for greater gratification. Access from mobile devices and instant communication will further drive the cycle. Mobile business strategies are integral meeting the increasing customer expectation and gratification spiral. Mobile business strategies that align to consumer need and that service customer expectation are likely to be effective.

Getting the message across – Customers are increasingly operating in an environment of information overload and are saturated with irrelevancies. The audience retention span is diminishing and more channels need to be supported (phone, storefront, mail-order, e-mail, electronic messaging, Web sites, home service, mobile device and set top box) in an integrated way. To get the message through, the message will need

to be consistently and persistently communicated and above all, it must be sticky^c.

Getting a message across is not a matter of appealing to the lowest common denominator, it is about clarity of message and respecting the recipient. Mobile business strategies that increase the quality of message and focus the message for audience and channel of delivery are likely to be more effective.

CONCLUSION

Like the Web enabling of business, mobile enablement will provide business with many challenges and significant rewards. Just as the Internet is now integral to business, so will it be with mobile business. The main driver in the adoption of mobile business is likely to be the benefits derived from routine transaction processing accompanied by the need to support an ever increasingly mobile workforce collaborating in virtual teams.

The adoption of mobile business depends upon a clear strategy driven by the business for the business. Deploying mobile business solutions will probably use an incremental approach that drives out the issues associated with mobile business and laying down key infrastructure that other projects can leverage. This will then drive a greater adoption of mobile business and the provision of more services in a self-sustaining process.

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KEY TERMS

Centres of Service Excellence: Call centres will operate across geographical boundaries, seamlessly integrating globally having conversations with customers to meet needs, to problem solve and to manage expectation irrespective of the device used – become centres of service excellence.

FedEx Model: A model for the operation of a consolidated messaging environment based on the proven principles to move messages (parcels) around the world by leading logistics companies.

Knowledge Worker Assembly Line: Knowledge workers take information and value-add to it to provide services. ICT needs to provide the right information at the right time in the right way for knowledge workers to effectively operate, i.e. ICT is the assembly line for knowledge workers.

Mobile Enablement: The process of adapting a business to support mobile business with all of the cultural change, management structures, business process optimisation and ICT issues that are required.

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Sticky Message: A message that stands out and is remembered because it is simple, unexpected, concrete, credible, emotional and often tells a story.

² This is not the same as tracking the user of the device with all of the privacy issues involved.

³ Sticky messages are simple, unexpected, concrete, credible, emotional and often tell a story.

ENDNOTES

¹ The network capabilities are not discussed extensively in this document due to their technical nature and because of the obvious issue of: if the network cannot support mobile business then this has to be addressed first.