Logistics Information Management

The Logistics of Information Management

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Perhaps one of the most visible aspects of human society is its ability and desire to communicate and articulate ideas, arguments and emotions, in the most effective way. Apart from the gift of speech itself, the power and importance of the printed word has commanded respect for many centuries. While this may appear to be a grandiose statement, it is a fact that in this modern age, we are very much ruled by this power of information. How we use this tool to grow relationships, conduct business and simply to be involved in an information dialogue, lies at the heart of what the topics that this journal addresses also. I believe that without understanding information, how we control it and what we require of it, we could easily find ourselves spending more and more time administering information rather than using it effectively.

Over the past 5 years, internet related technologies have undoubtedly transformed the medium of communication. The direct result of such a wealth of data is in the form of web sites, emails and freely available information. This has meant that globally, individuals and organisations are facing a critical information overload, on a daily, or worse, hourly basis. The internet has shown enormous growth since 1996 and it is clear to see that the statistics show an unabated thirst for information in this modern age: over 100 million computers connected to the internet ; more than 400 million global users; more than 4 billion web pages; over 7.5 Petabytes of information; and over 3 million people are employed in internet-related jobs.

The continual increase in IS-stored information in general and the problem of effectively managing and making sense of the growing sea of information is a very real logistical problem.

To live and work in this age of information, requires a very dedicated juggling act to be performed. The amount of information that we can get bombarded by, be through regular mail, email, fax or text messages, is truly overwhelming. How we manage both our working and personal lives in this regard, is very much determined by the way we can organise ourselves to use the right information, for the right purpose at the right time. The actual logistics of information management, that is, the way in which information needs and availibility are safisfied, is a flexible and constantly changing concept, for which the definition of information management must itself, change. Essentially, this definition needs to evolve to encompass three aspects of information management:

- *Physical*: defines the movement and the supply chain of information generation, sourcing and delivery itself and the mechanisms required to achieve this (for example, hard copy material, 'soft' copy material, emails, web sites).

- *Experiential*: defines the capability required to adopt and provide an embracing culture and / or methodology in order to leverage the maximum use of information, at the right place, at the right time and to the right person.

- *Knowledge*: defines the ability to mix and match information content and represent the context in such a way, as to minimise either the physical movement of information, or to increase the impact of its use.

Essentially, information system applications should inherit such characteristics to provide information which is context, rather than content, sensitive. Indeed, there are many contexts for describing information management: personal, organisational, enterprise, inter-enterprise and global. Realising that current definitions of information management are shifting towards including issues of context sensitivity, how can we, and why should we, change our approach to this field ?

There needs to be a framework for discovering and understanding where information management needs currently lie; where those needs should be adapted; and more importantly, the usage of that information once it is sourced, filtered and presented. Without any framework of course, we may never understand information itself. I believe that in order to understand what we want from information and how we derive value-added context from it, is to break down our needs into four distinct areas:

- *Applicability* : who really needs the information – individuals, groups of individuals, systems or services ?

- *Potentiality / scaleability* : where can the information be most usefully used ?

- *Contextuality* : how is the information interpreted and how does it affect, and is affected by, other processes, systems and data ?

- *Navigability* : what is the best way to organise, view and traverse the information, so that the preceeding factors are best optimised ?
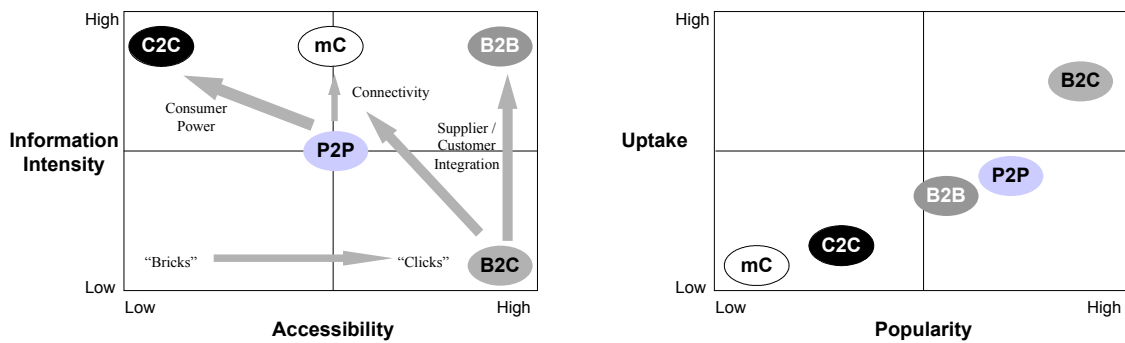
Figure 1.   The Internet information management landscape and its current realisation

These factors can be further visualised, by taking a look at current approaches and concepts which are seeking to revive information in a number of different ways, through internet approaches, as shown in Figure 1.

These are ostensibly, the 'e' business models which have prevailed throughout the recent internet boom years : B2C (business to consumer), B2B (business to business), C2C (consumer to consumer), P2P (peer to peer), mC (mobile eCommerce). These ubiquitious acronyms, have seeked to provide increased accessibility and usability of information in each of their respective areas of focus. Most, if not all, these approaches show the benefits of executing business in a seamless manner of the world wide web. What has happened instead, is a general apathy towards these approaches, partly due to over-confident business ventures, but also partly due to a lack of integration between the information and its intended usage. Only a relatively few companies such as Amazon.com, have shown marginal success at mining and interrogating their customer base, in order to target their customers and achieve the mythical 'market of one'. Witness the number of organisations who are having just as much difficulty understanding their Customer Relationship Management (CRM) data, as they had when trying to comprehend their Enterprise Resource Planning (ERP) implementations in the 1990's.

What has happened, is that in aggregating new economy concepts together, these very same approaches have grown apart and become disaggregrated. In short, internet economy models have not delivered the promise of manageable information. The truth is simple: it may be easy to collect information about your customers, your competitors and even the ecosystem that you operate in, but what do you do with that information ? Probably not very much, if you have a poorly thought-out and executed business model. Yet again, here we see another example of information being created for the sake of its own existence. On a purely individual basis we can all say that to some degree, we are still as yet untrained as to how to cope with handling, filtering, understanding and delegating our information needs. This is the difference between information overload, and information management.

There has been no concerted effort to realise and map the extent to which information can best be used (especially across the internet). All, information is static in nature, and requires human interaction to make the most of it.

It is perhaps for this reason, that the internet has still not achieved the objectives of automated commerce and supply chain logistics. Simply put, the new age of information enlightenment has'nt happened : old economy information, is supporting the new economy medium, in a perverse twist of supply and demand.

So what should the aim of information management really be? It should be to proactively decide on the relevance of information for a particular circumstance. This means more than simply delivering and presenting information at its face value. This is clearly understood by internet users who use content and information web sites (such as portals), where the depth and breadth of information can be personalised. However, personalisation is only half the story. To effectively manage and get the most out of information, supportive services and processes need to be in place first, such as:

- *Search*: location and navigation to discrete 'pockets' of information;

- *Cataloguing*: filing, referencing, updating and/or removing information (essentially, much like a librarian);

- *Arbitration* : services which are able to carry out both search and cataloguing services; in addition, these can discern between content different types that have similar contextual information in them (for example, a text document or a streaming video file which may relate to similar information);

- *Convergence Management* : device and system management components of an information system (operating system, network or a peer internet group), which can filter and integrate information into 'intelligent' devices - personal digital assistants, mobile phones, household appliances.

Then, in order to make best use of the information itself, requires some simple but effective decisions to be made about it:

- Prioritisation of the most often-used information;

- Provision of a 'road map' showing the depth of content (sparse content or contextuality – to paraphrase an old adage, is the information worth the paper it is printed on ?)

- Identification of methods by which to remove information that is the 'weakest link' : i.e. information which is badly formed, unintelligible, or requires excessive filtering and / or categorisation.

Through these three approaches the physical, experiential and knowledge components cited earlier, can be satisfied. However, in order to even approach these simple steps, requires concentrating on the actual meaning of information.

How is information used, how can it be leveraged to change situations, processes, services and experiences ? In answering these questions, information systems can become more fluid, and reactive to the users needs. But surely, technologies such as XML (eXtensible Markup Language), are heralding a new era of information dissemination and exchange (through a common meta-language of descriptive 'tags'). This is indeed true, although the true impact of XML upon business and commercial information services, is yet to be studied in depth in relation to gross efficiency savings, across industry sectors.

To be successful at managing and organising information in this climate of information overload, very much requires a strategy to provide the individual with both a 'map' of what information is available, as well as the ability to clearly express the information usage intent and user information experience needs. Information management should be evolving into a set of techniques which not only utilise the technology of the moment, but also ensure that identifiable information management needs, are captured and differentiated through distinct user experiences (such as via goal and scenario modelling). Perhaps the remit of this field should now begin to include aspects of the software engineering paradigm. Through grounding information management in methodologies, practices and architectures which are more in tune with the flow and context of information, we can at last begin to navigate beyond technology, and overcome the use of information as an end in itself.

So what of the life of information then ? Clearly, there are very real and pressing issues we must contend with if we wish not to be ruled by the perpetual deluge of emails to our office and home computers, faxes to our fax machines, and text messages to our cellular mobile telephones. Information needs to be put in its place, to be understood for once, and to be used only when it is needed, without information becoming a 'crutch' on which we support our lives.

Information is dead – long live information.

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