

## Business to Technology mapping

### Introduction

Information technology related products and solutions have vastly evolved over the last few decades. While several path breaking ideas have matured, technology is still in a catch up mode with business needs. This article examines the causes and how technologies are now evolving to be more near real time with business changes.

### The technologist's viewpoint

The technologist always looks for fundamental changes that could be – evolutionary (databases, operating systems etc.); revolutionary (internet, embedded technologies etc); pervasive (email, networking, mobile technologies etc); utilitarian (cheaper hardware, storage etc); portable (laptops, handhelds etc) and so on. The technologist's challenge has been to deal with frequent changes and making technology transition painless for end users as well as satisfying a wider range of users.

### The end user's viewpoint

The end user always looks for cheaper, faster, better, flexible, simpler, reliable, resilient and longer lasting solutions / products. However, in most cases, the end result only partially satisfies user needs since it is not possible to involve a majority of users in the design process. We therefore end up with technologies are either not fully utilized, evolved, tested or almost obsolete in terms of the idea. We experience this regularly with early versions of software, new generations of first products (e.g. first generation iPod docks etc)

### Need for business to technology mapping

Technology is measured by the end users in terms of ease of use, featured, cost of procurement and ownership. Business to technology mapping is an important step in the pre-design/ideation phase and if done in a structured manner will result in significantly better payoffs for both the technologies and end users. The tools and methods are however complex or expensive. While R&D in a lot of organizations is inward looking or controlled for intellectual property reasons, business to technology can be an effective input into R&D programs.

### Methods, challenges and pitfalls

Classical and contemporary software engineering / hardware design provides for techniques and tools that cover different dimensions of business to technology mapping (sample key elements are Features, Usability, Performance, Metrics, Use Cases etc) at the end user level and other engineering elements (e.g. portability, compatibility, data management, security, interface capability, storage etc) as well as physical elements for hardware (e.g. weight, size, ergonomics, electrical safety, communication standards etc)

To balance several of the above elements into a device, software or utility program is a designer's challenge and does not need user acceptance / involvement. The earlier this comes into the process, the better the end result. Modern methodologies like Agile, Software specification, Scrum, PDM, PLM etc have brought in fresh thinking and aided by collaborative tools for the above methods focuses the design closer the user needs (quicker, near real time and cheaper).

The pitfalls of high user involvement are that a product may get over engineered and heavy (e.g. PDA phones) or over-simplified (e.g. a one button scanner) or end up being very expensive. The designer's challenge is to balance user needs and stakeholder expectations (read costs, price and profits).

### In summary.....

Business to technology mapping is an iterative task and helps bring in different stakeholders to buy into the concept or technology being created (e.g. the automotive industry uses this very effectively). It also reduces the change of a product / solution to be guessed and left purely to the designer's thinking / fantasy all of which may not be practical at that time (e.g. Apple's Newton). A good example of where business to technology mapping is working is in the area of SDR which deals with technologies that can upgrade the software of a mobile phone without having to change a handset (still early days!)

There is no single formula or tool that works to anchor the business to technology process seamlessly and needs to be evolved / customized keeping the organization and market needs in mind. The technique that works best is a war room approach with set boundary conditions (Price, Features, Dimension etc) and involvement of business leaders/strategists to guide the focus groups. Now, maybe that is a new career option that some of us could aspire for....the Techno-business-evangelist-futurist !

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