Chapter 6

Insights on E–Emerging Practices

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ABSTRACT

The aim of this chapter is to give a vector to the background of e-business, and from that to highlight the areas which have driven the emerging practice of e-business. Every generation views the origins of development from its immediate past; the evolution is often lost in the passion for the future, but it is just this developmental trajectory that predicts the future. This Chapter therefore takes a historical perspective and looks at one root of “e-” and uses its overview to consider the direction and barriers to global acceptance in the interdependent globalised business community.

EARLY DAYS

Historically, the development of e-business has adopted a number of foci. One of the earliest, in 1987, was when the US Department of Defense (DoD) introduced its strategy for the “Computer aided Acquisition and Logistics Support” (CALS). It had become clear that the US military, with its vast array of classes, marks, versions, and upgrades, was struggling with managing the magnitude, the rate of development, and change of its military systems. For all mark and change states of equipment, this meant rapid access to huge numbers of maintenance manuals, each assumed to be correct to the latest change of the equipment. This in turn assumed that the change control of the manuals and stock location was in step with the systems it was serving and that no unauthorised (and therefore unrecorded) changes had taken place. It also assumed that no cannibalisation of equipment had occurred to maintain operational effectiveness of other less denigrated equipment. As every maintainer knows, this assumption was not only unrealistic but impossible to substantiate. As a result there was a requirement for a huge amount of paper documentation, all correct to the latest change, to be available and all previous changes to be documented and supported. Operationally this meant “Now!”.

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ability to find the relevant section in the manuals or stock ordering catalogues and that the version control of the manuals was upgraded to the most recent state. This assumption too assumed that the maintainer had access to the latest changes, delivered in paper to his equipment anywhere in the world. Given the deployment patterns of, for example, the US Air Force in a conflict scenario, it assumed that each air station anywhere in the world had access to the changes which were in force and modifications to any aircraft likely to be in need of repair. This was a very unlikely situation. Fitting the wrong part led to equipment failure, personnel injury and death.

DATABASE DEVELOPMENTS

What if a single database could be developed, accessible anywhere in the world, which recorded each equipment’s change and status, which had only the latest maintenance manuals and spares catalogue, and could record all the states of the equipment as it happened? That would be a saving! It was estimated that a top hamper saving of 455 tons of paper (that’s around 300 Tomahawk missiles) could be saved for a standard Frigate and, when ordering spares and replacement parts, no operator errors would occur because the database would know the various change states of the equipment itself. CALS attempted to generate a single database for all DoD systems with the integration of the whole supply chain. It focused on a single master database which all users accessed, thus reducing multiple and out of step databases for maintenance and repair. The idea was to cascade the database through the whole supply chain, each supplier keeping his own database synchronised with the main database. Each piece of equipment was registered with its mark, version and change status. This would solve all the issues. It also allowed access to a reordering catalogue based on individual requirements rather than an aggregated requirement. There would therefore be cost savings by avoiding over ordering and operational effectiveness would increase due to availability of required parts. Repeat workings and entry errors could be minimised.

Standards

CALS also drove the establishment of standards; PDES/STEP for example, was further developed to support product design and data exchange, which allowed supply chain members to exchange manufacturing data and access standards in a common database accessed over the (then) embryonic WWW. Subcontractors could manufacture through Computer Aided Design (CAD) systems linked directly to the database, where components could be made to the specifications of the current mark of equipment. Suddenly quality was improved. Security and data encryption needed developing; patents needed protecting while being made available to everyone to whom the DoD issued relevant contracts; governance and ownership rights needed establishing. Security and encryption for these uses need not be developed in real time. The simple solution here was point to point security. Customers were only integrated through their support of the data base.

DEVELOPMENTS IN BUSINESS DUE TO “E-”

However, the acronym CALS changed its meaning over the years, one of them standing for “Commerce At Light Speed.” Suddenly CALS had stepped out of the defence arena, and moved central stage to business. While it should be noted that CALS never once mentioned the term “e-business,” what we see here are the elements of what today we regard as the elements of e-commerce;
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