Manufacturing & Services have been revolutionized by the concept of ‘continuous improvement’

What has happened in I.T.?

– Still the old “install the machinery, and run it” model
– Large monolithic structures work for:
  • Software vendors who sell ‘strategically’ not ‘technically’
  • IT implementation Consultants
Broad Changes in I.T.

- Information Technology is undergoing important and fundamental changes that make incremental approaches much more feasible
- Not just "the Internet"
  - Growing proliferation of 'open' standards
  - Rapidly increasing bandwidth
  - Less emphasis on processing
    - key issue is connectivity (not new!) but....
  - Connectivity exists at many levels.
    - Now there is a confluence of 'open' technologies that provide widespread connectivity at the various levels; e.g.
      - TCP/IP (network level), HTTP (User interface level).
      - All these new technologies are needed - and now they have fallen into place

Consequences of these changes

- Rapid, relentless innovation
- Streams of new products and services
- Many existing project management models floundering
- Nature of development has begun to change
  - Netscape
  - Yahoo!
  - ...and even Microsoft..
## Two Approaches to IT Development

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<th>Path-based</th>
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<td>Control, Efficiency, Accommodating All Requirements at once</td>
<td>Integration, interconnection, flexibility, progressive delivery of requirements</td>
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<td>Installation, &quot;Organizational Transformation&quot;, Project management.</td>
<td>Ongoing Management of Standards, Direction Setting.</td>
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## Consequences of Periodic Model

- **Large Projects: Cost and Delivery overruns**
  - Happens too frequently to be simple bad management
  - Much effort in:
    - determining precise needs of every part of the business (before installing the whole system)
    - Convincing people they 'own' the system, after it's built
  - Problems:
    - People often can't say what they need until they've seen what can be done...
    - Technology and needs have changed by the time it's complete
    - Too monolithic to change
Example: Spectrum of Enterprise Solutions

Complete ERP Package (e.g. SAP)  ‘Best of Breed’ Solution  Custom Assembly  Custom Code

- Integration difficulties  + Integration difficulties
- Uniformity/Tailorability  + Uniformity/Tailorability
- Maintenance required  + Maintenance required
- Internal IS skills required  + Internal IS skills required

Potential to generate competitive advantage?  (or avoid competitive disadvantage?)  ?

Key Questions

A. Will the system deliver the required functionality?
B. What mechanisms are available for its subsequent improvement?
   - This is where the opportunities are largest
   - Your thoughts?