

Implementation Procedures

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The Mantra

- **It's not enough to have a good idea, you have to know how to move the furniture around.**
- **Flexibility that we cannot implement when needed, is 'worthless'**

Outline

- **Common Obstacles**
 - Ignorance
 - Inattention
 - Failure to Plan
 - Stakeholder Block
 - External Developments
- **Initial Preventive Actions**
 - What you do at start
- **Ongoing Operational Actions**
 - What you do to keep options “alive”

Obstacle: Ignorance

- **Concept: Future Managers or Systems Operators forget or otherwise ignore that flexibility exists**
- **How hard is that?**
- **Example: Bluewater parking garage**
 - designers built in steel
 - initial developer did not use flexibility
 - Sold facility after it became profitable (low risk)
 - Investment trust outsourced management
 - In any case, flexibility “out of sight, out of mind”

Obstacle: Inattention

- **Concept:** To use flexibility well, system operators must do so at suitable time
- **Why is this? Is this easy to do?**
- **Sometimes self evident:**
 - Flat tire needs changing
 - Flexible manufacturing
 - “Swing gates” (international/domestic) at airports
- **Sometimes not:**
 - When should owner add floors to building?
 - Part of organization aware of need (e.g. operators) often cannot influence designers, budget process

Obstacle: Failure to Plan Ahead

- **Concept:** Initial design does not ‘think ahead’ and thus makes future expansion or change very difficult
- **Can you think of cases?**
- **Common example:** Locating heating/cooling plant close to main facilities (hospital, airport terminal)
 - Proximity saves on energy loss, also on expensive ductwork
 - But then power plant blocks future expansion of main facility!

Obstacle: Stakeholder Block

- **Concept: Stakeholders may block the use of a flexibility because it harms them**
- **Is this a likely problem?**
- **Yes! Very common in fact**
- **Between organizations, which normally have different interests – the reason they exist**
 - Example: Newcastle Hospital
- **Also within organizations! How is this possible?**
 - Part of organization that wants to use flexibility to expand often cannot get other parts to execute
 - Example: Broadcast satellites - conflict between sales and operators (risk-averse and no budget)

Stakeholder Block: Example

- **Example of internal stakeholder blocking flexibility in operations:**
- **Experience at HP; concerns DRAMs (chips widely used in electronic products)**
 - Business Units for products recognize need and want flexible supply of DRAMs, to benefit from possible high demands from DRAM using products
 - Procurement division judged on ability to get DRAMs (and other resources) inexpensively; thus not interested in paying for ability to increase supply
 - Procurement “won”
 - and company lost when DRAM shortage prevented HP for profiting from high demand

Obstacle: External Developments

- **Concept: Outside forces prevent the use of some flexibility – or nullify its value**
- **Is this common?**
- **Definitely!**
 - **New Government rules (e.g., zoning codes)**
 - **New Technology reduces or eliminates value of expansion**

So, what do we do?

- **Initial Preventive Actions: What you do at start**
 - **Integrated Project Delivery**
 - **Development of ‘game plan’**
 - **Anticipating Developments**
- **Ongoing Operational Actions: What you do to keep options “alive”**
 - **Maintaining rights to implement**
 - **Maintaining Knowledge to implement**
 - **Monitoring the environment**
- **In short: Active involvement needed!**

Integrated Project Delivery Concept

- **All stakeholders involved with delivery of a product work together collaboratively and simultaneously**
- **Clearly not traditional way, which is linear**
 - Someone sets requirements for designers
 - Designers specify product for
 - Manufacturers, who try to build it
 - While some else worries about finances
 - Etc.
- **Process is rare, so far**

Integrated Project Delivery Example

- **Some companies have made systematic conscious efforts to develop forms of IPD...**
- **Lucent, around 2002/3**
 - Recognized need to be more competitive in delivery of its products (routing systems, etc)
 - Head of supply-chain group within company assigned some of his staff to work with all major sales teams
 - So that sales/product/and delivery aspects of implementation of could be integrated.

Integrated Project Delivery -- Value

- **Ignorance – reduces likelihood**
- **Inattention – does not deal with**
- **Failure to plan ahead – reduces likelihood**
- **Stakeholder Block – Good! Should eliminate**
- **External Developments – does not deal with**
- **Overall: Good for coordination, removing stakeholder blocks – not enough by itself**

Development of Game Plan Concept

- **Designers should lay out the steps managers should take to implement each particular form of flexibility**
- **A necessary validation of any physical plan for implementing a design flexibility**
- **Needs a form of Integrated Project Delivery to be effective – not a purely physical plan**
 - **Example: Newcastle Hospital – designers did not have a good game plan because they failed to understand needs of financial side of project**

Development of Game Plan Value

- **Ignorance – reduces likelihood**
- **Inattention – does not deal with**
- **Failure to plan ahead – Good!**
- **Stakeholder Block – Good (with Integrated Project Delivery)**
- **External Developments – does not deal with**
- **Overall: Necessary, but not sufficient**

Anticipating Developments Concept

- **Implementation game plan may call for some advance non-design actions. Put another way, physical flexibility designed into the system may need legal or financial facilitation.**
- **Example: Development of secondary airports for a city**
 - **Not enough to have land and a design...**
 - **Also need political accord – or existing right**
 - **Thus Boston, Los Angeles maintain currently useless second airports to have the right to use them later if so desired**

Anticipating Developments Value

- **Ignorance – does not deal with**
- **Inattention – does not deal with**
- **Failure to plan ahead – Good!**
- **Stakeholder Block – Good (with Integrated Project Delivery)**
- **External Developments – does not deal with**
- **Overall: Necessary, but not sufficient**

Ongoing Operational Actions

- **In many ways, this is the more crucial part of implementation of flexibility**
- **Why might this be?**
 - **Because ...**
 - **Designers who created flexibility are long gone by time it might be used**
 - **Organization may lose track of flexibility**
 - **Overall, flexibility can ‘waste away’**

Maintaining right to implement

- **The right to implement often depends on various permissions or political consents**
- **Can you think of cases?**
- **Some examples:**
 - **Planning permissions for construction**
 - **Franchises and patents may need renewal**
 - **Other “use it or lose it” situations**
- **A good way to maintain a right, is to use it**
- **In general, maintenance requires effort**

Maintaining Right Value

- **Ignorance – mitigates**
- **Inattention – mitigates**
- **Failure to plan ahead – does not deal with**
- **Stakeholder Block – deals in part with**
- **External Developments – does not deal with**
- **Overall: Critical factor in some cases**

Maintaining Knowledge to Implement

- **Know-How may be crucial: Using Technical Flexibility may require specific knowledge**
- **Example: Tufts Dental School in Boston**
 - Ability to add extra stories, provided for in original design, only practical with knowledge of structural and foundation details
 - They were lucky this was available 20 years later
- **How does an organization do this?**
 - Maintaining people , “institutional knowledge”
- **Is money enough?**
 - Motivation may be key

Maintaining Knowledge Value

- **Ignorance – mitigates**
- **Inattention – mitigates**
- **Failure to plan ahead – does not deal with**
- **Stakeholder Block – deals in part with**
- **External Developments – does not deal with**
- **Overall: Often the Critical factor**

Monitoring the Environment

- **Effective use of Flexibility implies that it be used at the 'right time'**
- **Requires definition of "triggers" or conditions for appropriate use**
 - These may change (as in parking garage case)
 - Depend on a conjunction of factors
 - This is not obvious
- **Also requires an information system that**
 - Collects relevant data
 - Connects data to persons capable of using
- **This is not obvious!**

Monitoring Environment Value

- **Ignorance – mitigates**
- **Inattention – mitigates**
- **Failure to plan ahead – does not deal with**
- **Stakeholder Block – does not deal with**
- **External Developments – can do**
- **Overall: Always a Necessary factor**

Take-Aways

- **The Ability to use Flexibility in Design can easily be lost, due to**
 - Ignorance and Inattention
 - Failure to Plan and Stakeholder Block
 - External Developments
- **Successful implementation requires a plan with both**
 - Initial Preventative Actions
 - Ongoing Operational Actions
- **No single method sufficient**