An Integrated Process Model as a Foundation for ITSM

Chris Finden-Browne
Vice-Chair, SMSG
IBM Global Services
Agenda

- A geography test, and an extended analogy
- Types and styles of model
- A high-level model as an example:
  IBM’s Process Reference Model for IT
    - Process decomposition
    - Process maps
- How can the integrated process model be useful?
Geography Test – Where Am I?

- Name these three large cities in the North of England?
For each city, what industry is most associated with it?

- Sheffield  
  - Steel; Cutlery
- Manchester  
  - Cotton and Textiles
- Leeds  
  - Clothing
Geography Test – How do I get from A to B?

1. Name these three large cities in the North of England?
2. How would you get to Leeds from Sheffield?
3. How would you get to Manchester from Leeds?
4. How would you get to Sheffield from Manchester?
Some assistance

What would the answers have been in: 1950? 1900? 1800?
Assertions and Learning Points … 1

- A map can be useful to represent the processes we use in IT Service Management
  - The cities represent major processes
  - The connections between cities represent interfaces between processes
- The cartographer decides what information the map conveys
  - Each map can satisfy one purpose – or just a few of them
  - (S)He chooses an appropriate mapping style
- Whilst the underlying topology is constant, the map will require periodic revision
The City as an Analogy for a Process

- There is a clear boundary
- Each major interface is shown by connections at that boundary
- Each district can represent the activities which comprise the process
Assertions and Learning Points ... 2

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- There is a need for both small-scale and large-scale maps
  - Each instance has benefit for its own context and target usage
Three levels (types) of IT process models

Level A: Process Reference Model

*High-level model for scoping, planning and consulting*

Level B: Operational Process Model

*Generic workflows for business transformation planning and implementation*

Level C: Workflow Implementation and Automation Model

*Detailed workflows for procedural standardization and automation*

For today, we focus on Level A
THE PRM-IT MODEL:
Sequencing the DNA of IT management

- **Purpose**
  - Provide an integrated collection of the processes involved in using IT to help businesses carry out many or all of their fundamental purposes
  - Be the basis for process assessment, design and implementation
    - But not be directly implementable itself

- **Viewpoint**
  - Consider the processes for all IT activities – so equivalent to the CIO’s vantage point:
    - Control over IT’s activities
    - Represent IT to the owning business(es) and to other stakeholders

- **Packaging**
  - A rigorously engineered IDEF0 process model
    - IDEF0 = Integration Definition for Function Modeling
The CIO viewpoint can be expressed as three linked and overlapping areas of interest around a focus on the customer.
ITIL provides a basis for the Delivery Management Domain of this particular model, but is not in itself complete. For example, CMMI and COBIT are also relevant.

- All 10 processes, plus the Service Desk “function”

**Service Management**

<table>
<thead>
<tr>
<th>Service Delivery</th>
<th>Service Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Availability Management</td>
<td>- Configuration Management</td>
</tr>
<tr>
<td>- Capacity Management</td>
<td>- Change Management</td>
</tr>
<tr>
<td>- Financial Management for IT</td>
<td>- Incident Management</td>
</tr>
<tr>
<td>Services</td>
<td>- Problem Management</td>
</tr>
<tr>
<td>- IT Service Continuity Management</td>
<td>- Release Management</td>
</tr>
<tr>
<td>- Service Level Management</td>
<td>- Service Desk</td>
</tr>
</tbody>
</table>

**Asset Management**

**Security Management**

**Application Management**

**Infrastructure Management**

**The Business Perspective**

- Requirements
- Design
- Build
- Supplier Relationship Management
- Linkage to ISO 17799
- Operations
  - Workload and Scheduling
  - Operational Control
  - Event Management
  - Storage Management, including Backup and Recovery

Based on “Software” book
As a first step, the map should have a clear ‘regional’ structure. In PRM-IT, these are called “categories”
Next, the major ‘cities’ are identified. PRM-IT V1 has 40 processes across eight categories.
For this model, alignment with ITIL was a key design principle

**IT Management System**
- IT Management System Framework
- IT Management System Design, Development and Implementation
- IT Management System Operation
- IT Management System Evaluation

**Solution Deployment**
- Change Management
- Release Management
- Configuration Management

**IT Operational Services**
- Service Execution
- Data and Storage Management
- Event Management
- User Contact Management
- Incident Management
- Problem Management

**IT Resilience**
- Compliance Management
  - Security Management
  - Availability Management
  - Capacity Management
  - Facility Management
  - IT Service Continuity Management

**IT Administration**
- Financial Management
  - Asset Management
  - Supplier Relationship Management
  - Service Pricing and Contract Administration
  - Workforce Management
  - Knowledge Management

**IT Customer Relationships**
- Stakeholder Requirements Management
- Service Marketing and Sales
- Service Level Management
- Customer Satisfaction Management

**IT Direction**
- IT Strategy
- IT Research and Innovation
- Architecture Management
- Risk Management
- IT Portfolio Management
- Project Management

**Solution Development**
- Solution Requirements
- Solution Analysis and Design
- Solution Build
- Solution Test
- Solution Acceptance

**Core Alignment Process**
- Extended Alignment Process
We now need to create the actual map. A quick look at one possible modelling style: IDEF0 notation and diagrams follow a standard format

**Process:** The box represents a process or activity, which is **WHAT** must be accomplished

**Controls:** Conditions or circumstances that **govern** the process

**Input:** Materials and Information supplied to a process

**Output:** Products and Services produced for the customers of a process

INPUTS arrive at the left side, CONTROLS at the top, and OUTPUTS leave from the right
IDEF0 Models maintain their integrity across multiple levels of detail - for both processes and flows

- This provides a means to change the scale of the map – that is, zoom in and out
Each process (city) has its own configuration of activities (districts), with both internal and external linkages

- In V1, every process has one further level of decomposition
- There are between five and nine activities for each
- The relationships between activities are comprehensively modeled
Looking outward from a single city, the main interconnections can be noted, leading to an integrated model.
Usually, only the process architect needs to work at this level. Most ITSM projects start with process descriptions.

- **Compliance Management**
  - To ensure adherence with laws and regulations, internal policies and procedures, and stakeholder commitments.

- **Security Management**
  - To manage a defined level of security on information and IT services.

- **Availability Management**
  - To plan, measure, monitor and improve the availability of infrastructure, applications and services to ensure agreed to requirements are met.

- **Capacity Management**
  - To ensure that cost justifiable infrastructure, application and service capacity meets the current and future agreed to needs of the business.

- **Facility Management**
  - To create and maintain a physical environment that houses IT resources and optimizes the capabilities and cost of that environment.

- **IT Service Continuity Management**
  - To ensure that agreed-to IT Services continue to support business requirements in the event of a disruption to the business, based on the committed recovery schedule.
Process improvement usually starts with an assessment, in order to prioritise efforts and define the scope.

<table>
<thead>
<tr>
<th>Process</th>
<th>Current Performance</th>
<th>Future Strategic Contribution</th>
<th>Urgency</th>
<th>OVERALL RANK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compliance</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>2=</td>
</tr>
<tr>
<td>Security</td>
<td>3</td>
<td>5</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Availability</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Capacity</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Facility</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>IT Service Continuity</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>2=</td>
</tr>
</tbody>
</table>
As in the Sheffield/Leeds/Manchester example, some key interfaces might be selected for inspection.
A network of processes can be needed to describe more complex services

1. Monitoring Data and Event Resolution
2. Event to Incident, resolved there
3. Incident to Problem
4. Incident or Problem requires an RFC for resolution
A geographical map eventually zooms into a ‘procedural’ level of detail
Similarly, the process model leads to workflow – and eventually to procedure design.
Other sample uses:
The map can be annotated with organisational issues

Administrative Boundaries 1995

Administrative Boundaries 2005
A review of some uses of a map/process model

- **A map**
  - Become familiar with the main constituents and layout of a geographic area
    - What they are
    - How they are positioned in relation to each other
    - An idea of their relative status (for example, size)
  - Plan a sequence of journeys
    - Road names and distances
    - National boundaries
    - Tolls
    - Road quality (to estimate elapsed time)

- **A process model**
  - Become familiar with the main constituents and layout of a process domain
    - What they are
    - How they are positioned in relation to each other
    - An idea of their relative status (for example, effectiveness, cost)
  - Design an implementation of several processes
    - Interfaces for data and control
    - Organisational considerations
    - Measurement points
    - Automation potential and other tooling needed
References

- IBM Paper “Introducing the IBM Process Reference Model for IT”
  - Document number G510-6478-00

- IBM Tivoli Unified Process – 2 versions
  1. Base product – Free download of published material
  2. ITUP Composer
     - More process information – adds task level workflows
     - Bundled process composition tool (Rational Method Composer)
     - Now includes the full documentation set for PRM-IT

Contact details:

[chris_finden-browne@uk.ibm.com](mailto:chris_finden-browne@uk.ibm.com)

+44 20 7021 9945