



**Column Technologies, Inc.**

**ITSM Academy  
CMDB Session Report**

**for the  
State of Oregon**

**August 31, 2007**

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## Document Revisions

Version	Date	Author	Revision
1.0	8/25/2005	Avi Maltzman	Original Document Materials
1.1	8/27/2007	John Riegel	Analysis and Format
1.2	8/28/2007	Rob Tucker	Content Validation
1.3	8/30/2007	CTI Team	Column Team Review
1.4	8/31/2007	Quentin Mackey	Column Management Approval

# Executive Overview

On August 20, 21, and 22 Column Technologies Inc. (Column) consultants facilitated three days of sessions with ITSM Academy members. Participants included representatives from multiple Departments and Agencies in Salem.

The purpose of the sessions was for analysis of requirements sufficient to recommend a path for deploying the BMC Remedy ITSM 7 applications for the State of Oregon. It is recognized that a successful program can have significant impact on State technology operations spanning multiple organizations.

Please refer to the ITSM Academy web site for information on objectives and participants: <http://www.oregon.gov/DAS/EISPD/ITSM/index.shtml>.

This report is the deliverable from the three days of sessions, conducted under PO-051507AO against RFP 102-7525-5 and Price Agreement 5266-PA. This is the first substantive work resulting from the RFP and Price Agreement. The report scope is to provide professional recommendations for implementation of the BMC ITSM 7 applications including Incident, Problem, Change, Asset, and Service management.

The primary recommendation for implementation is to establish a program sponsoring multiple projects. These are identified below. Two initial projects are detailed – a Foundation Data Workshop, and a CMDB/Change management pilot. Two additional projects are suggested within three months.

# Summary Recommendations

The following recommendations summarize Column's professional opinion to the State of Oregon's ITSM Academy to move forward towards implementation of the goals established in the Academy's charter. Supporting information for these recommendations follows, with details at the end of this document.

- Manage a set of parallel projects under a 2 year program. The purpose of the program is to divide efforts into manageable work which can be successfully implemented. Managing timelines for required projects, and removing politics from tactical progress are recommended objectives.
- Initiate a Foundation Data Workshop project. Significant operational advantages of the BMC ITSM 7 suite require clean, consistent data inputs to enable automation and enrich dashboards with powerful analytics. Foundation data requirements include people, organizational hierarchies, locations, product categories, and operational categories.
- Deploy a Remedy ITSM 7 pilot project including the Atrium Configuration Management Data Base (CMDB) supported either by the Asset OR Change Management application (there are considerations for either choice). The objective of a pilot project is to prove the concepts promoted by the ITSM academy. Pilot objectives are simple and easily obtained. It is suggested that the scope of the pilot be limited to the DAS shared-service data center. A primary benefit of the proof of concept will be real-world experience with the ITSM suite. Optionally include topology discovery in the pilot project.
- Initiate analysis work for the "Enterprise". Scope ITSM 7 deployment envisioned by the ITSM Academy three months after initiation of the Foundation Data Workshop and Pilot recommended above.
- Contract consulting services for one-time non-repetitive tasks, and for tasks where risk from politics of organizational change is high. Scope for projects should be adequate for desired results.

## Best Practices Recommendations

Column Technologies' consulting and implementation recommendations are based on ITIL methodologies and industry best practices. Figures below demonstrate our approach to an Enterprise-wide ITSM implementation process (Fig. 1), and process integration between Incident Management, Problem Management, Configuration Management processes and Disaster Recovery (Business Continuity Management).

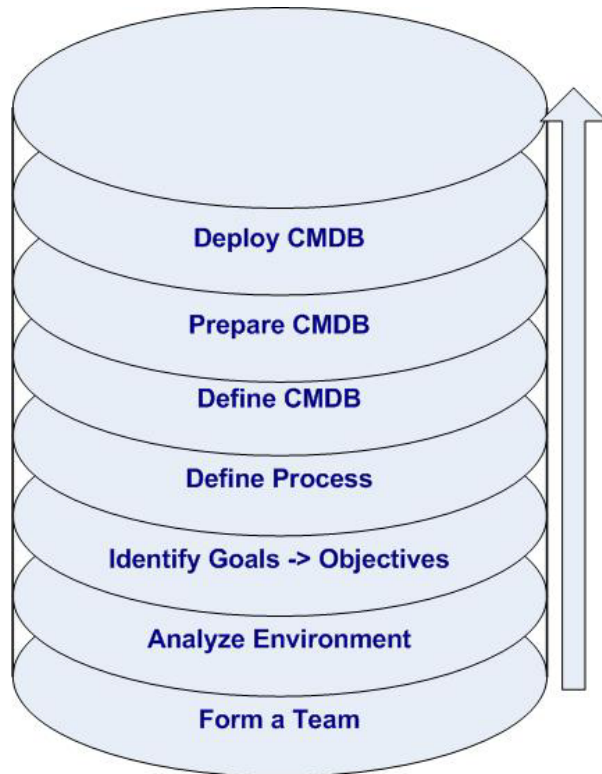


Fig. 1

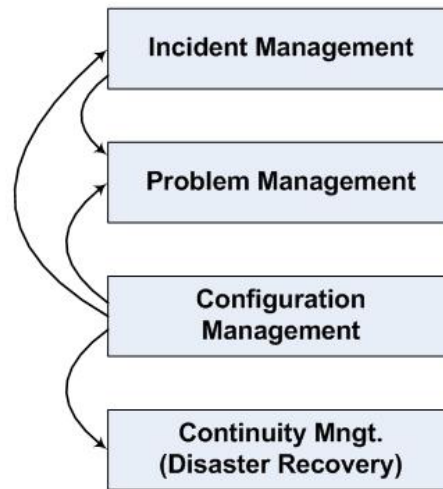


Fig. 2

Figure 1 demonstrates that sequential, iterative goals must be followed to build a successful CMDB. Progress to date on the project has not been sequential.

Sequential Steps	Progress Notes
Form a Team	Complete. Challenge will be maintaining availability of time for projects/tasks with non-dedicated staff and dissent on how to leverage consulting services.
Analyze Environment	Summary complete. Foundation data project required to get to sufficient detail for success.
Identify Goals and Objectives	High level complete. Tactical objectives are not clear to all participants.
Define Process	Focus of current work.
Define CMDB	BMC Atrium is assumed, detailed Requirements Analysis project to follow Foundation Data project.
Prepare CMDB	Calls to Column support indicate installation work on a pilot has been initiated. Status is unknown at this time.
Deploy CMDB	TBD

The relationships between supporting ITIL disciplines indicated in Figure 2 above could not be sufficiently analyzed in the session length scheduled by the State of Oregon. Column suggests that Academy participants self-evaluate these relationships within their individual organizations. With deployment of ITIL best-practices, these relationships will significantly change together with staff roles and responsibilities.

With regards to the CMDB component of ITIL, which was the exclusive focus for the sessions, Column presents the following best-practice recommendations to the ITSM Academy:

CMDB Best Practices recommendations for the ITSM Academy
Plan for a multi-phase implementation program.
Inform stake holders with open, timely communications of risks issues, and expectations.
Plan ahead in detail on a rolling 30/60/90 day basis. Leverage experience of others to ask and answer right questions.
Each project phase must have defined requirements, scope and phasing.
Promote processes aligned with business needs with supportable facts.
Begin with Configuration Items which are under formal Change Management.
Carefully document and validate data reconciliation strategy from all inputs.

## Session Agenda, August 20 - 22

	Topic	Length	Outcome
1	<p>Welcome</p> <ul style="list-style-type: none"> <li>• Session Overview &amp; Agenda</li> <li>• Review Pre-work</li> </ul>	<p>Monday August 20, 2007 8:30am to 9:30 am</p>	<ul style="list-style-type: none"> <li>• Manage scope and expectations.</li> </ul>
2	<p>Configuration Management</p> <p>Review of the Remedy Atrium CMDB Common Data Model (CDM)</p>	<p>Monday August 20, 2007  9:45am to Noon</p>	<ul style="list-style-type: none"> <li>• Define Business Objectives and Scope</li> <li>• Walk through the different classes of configuration items in the Remedy Atrium CMDB 2.0 Common Data Model (CDM)</li> <li>• This will form the basis for what classes will be populated in the CDM and the relationships that are possible between the different CI's</li> </ul>
3	<p>Configuration Item Class and Attribute Identification</p>	<p>Monday August 20, 2007  1:30pm to 3:30pm</p>	<ul style="list-style-type: none"> <li>• Identification of CDM classes that will be tracked in the CMDB</li> <li>• Identification of the attributes for the identified CDM classes</li> </ul>
4	<p>Data Sources</p>	<p>Monday August 20, 2007  3:45pm to 4:30pm</p>	<ul style="list-style-type: none"> <li>• Define Data Sources (Discoverable, Not Discoverable and Manual)</li> <li>• Identify and define content, dynamics, and state of Data Sources</li> </ul>
5	<p>Data Sources (Continued)</p>	<p>Tuesday August 21, 2007  8:30am to 10:30am</p>	<ul style="list-style-type: none"> <li>• Review Data Sources</li> <li>• Initial Source to Configuration Item Class mapping</li> <li>• Initial Source to Configuration Item attribute mapping</li> </ul>
6	<p>Configuration Item Life cycle</p>	<p>Tuesday August 21, 2007  10:45am to Noon</p>	<p>The Lifecycle (Status) of a Configuration Item. How does a CI get registered into the CMDB</p> <p>For example:</p> <ul style="list-style-type: none"> <li>• Ordered</li> <li>• Received</li> <li>• Assembled</li> <li>• Deployed</li> <li>• In Repair</li> <li>• Down</li> <li>• End of Life</li> </ul>
7	<p>Configuration Item Associated Contracts and Schedules</p>	<p>Tuesday August 21, 2007  1:30pm to 3:30pm</p>	<p>Identify Support, Warranty, software contracts associated with CI's</p> <p>Identify Maintenance and Audit Schedules associated with CI's</p>
8	<p>Review of Foundation Data Structures</p>	<p>Tuesday August 21, 2007</p>	

	Topic	Length	Outcome
		3:45pm to 4:30pm	
9	Defining Companies/Agency's or Bureaus <ul style="list-style-type: none"> <li>Working with "Companies (Agency's or Bureaus)</li> <li>Roles &amp; Security Access</li> <li>Workflow</li> <li>Navigation Tiers</li> </ul>	Wednesday August 22, 2007  8:30am to 9:30am	Identification of: <ul style="list-style-type: none"> <li>Company Names (Agency's or Bureaus)</li> <li>Company Types</li> <li>Navigation Tiers</li> <li>Overall access within or between Companies (Agency's or Bureaus).</li> <li>Workflow consideration within or between companies. (Single vs Multi-Tenancy)</li> </ul>
10	Defining Organizations & Physical Locations <ul style="list-style-type: none"> <li>Working with "Company (Agency or Bureau)" fields</li> <li>Reporting needs, automated assignment routing and service level management mapping requirements.</li> </ul>	Wednesday August 22, 2007  9:45am to 10:45am	Identification of: <ul style="list-style-type: none"> <li>Organizational structure</li> <li>Physical Location attributes</li> </ul>
11	Defining Support Groups <ul style="list-style-type: none"> <li>Working with "Support groups" for assignment</li> <li>Support Staff associated with Support Group</li> <li>Virtual support groups</li> </ul>	Wednesday August 22, 2007  11am to Noon	Identification of: <ul style="list-style-type: none"> <li>Agencies' IT Support Structure and high level procedures or functions</li> </ul>
12	Defining Service & Product Categorizations <ul style="list-style-type: none"> <li>Working with "Categorizations"</li> <li>Tier 1, 2 &amp; 3</li> </ul>	Wednesday August 22, 2007  1:30pm to 3:30pm	Identification of: <ul style="list-style-type: none"> <li>Service &amp; Product Tiers</li> </ul>
13	Defining People <ul style="list-style-type: none"> <li>customers (internal or external) and support staff (internal or external)</li> <li>"Company (Agency or Bureaus)" and Location attributes for contact profile</li> <li>Permission Groups and Functional Roles</li> <li>Individual access to data</li> <li>People associated to CIs and Support Groups.</li> <li>Approval mappings</li> </ul>	Wednesday August 22, 2007  3:45pm to 4:45pm	Identification of: <ul style="list-style-type: none"> <li>Customer contact info</li> <li>Vendor contact info</li> <li>IT Staff roles within Agency or Bureau support organization</li> </ul>

## Session “Homework” Assignments

The following assignments were completed by all participants, with results collected by Academy staff. Details have not been provided to Column.

1. Review the Atrium CMDB Common Data model diagram classes and attributes.
2. Review current configuration item (Asset) life cycles in your organization.
3. Review current support, warranty and software license contracts in your organization.
4. Complete “Agency location/organization” assignment sheet.

Column recommends that session homework assignments be validated, consolidated and posted for periodic review and evaluation of progress every six months.

An additional measurement exercise would be for each organization to self-evaluate ITIL maturity (from 0 to 5), both in terms of current state, and six a rolling six-month goal.

## Session Duration Focuses Results

The duration for the engagement was the subject for significant negotiation, with sessions originally planned for June, 2007. The August sessions were significantly shorter in duration than recommended by Column to the State of Oregon. The level of information gathered in the sessions validates that additional analysis is required prior to formulating a complete program.

By limiting duration, and thus limiting the level of detail which Column can return in this report, the Academy focuses the results on the projects summarized in introduction and outlined in this report’s conclusion.

# Session Summary Notes

Following are general session notes which are significant. Other session notes may be found in the following analysis sections.

## **Day 1 (8/20/2007)**

### **State of Oregon Agencies representatives:**

- DHS
- SDC
- DEQ
- DAS
- ODOT
- Forestry
- Revenues

- Each Agency has its own Change Management board.
- Each Agency has its own Remedy administrator.
- Impact Analysis is been practiced between agencies and SDC.
- There is no one central repository for Foundation Data.

### **Purpose of Configuration Management:**

- Facilitate better business decisions
- Enable advanced planning
- Provide Accountability

### **Asset Management Objective:**

- Tracking of tagged assets
- Manage assets Life Cycle
- Procurement – Disposal
- Location / Status tracking
- End of Life / Salvage value
- Tracking TCO
- Acquisition Compliance with IT policies
- License and software compliance management
- Linking assets to owners
- CI -> Customer Incidents
- Auto discovery
- Real Time / Near Real Time reporting
- Multi level permission model for CMDB access
- Segregation of CI's by agencies
- Topology / Configuration and relations between CI's and Impact
- Total Impact Analysis. Technical and Business.
- Objects currently tracked in Asset Management (Under Change Management Process)

## **Draft CI Structure**

### **Main CI Classes:**

- PC's
- Telco
- Mainframe
- Servers
- Applications
- Processes

### **PC Classes**

- Personal Computer (Desktop)
- PC (Laptop / Notebook)
- Tablet PC
- Thin Client

### **Mobile Devices**

- Cell phones
- Blackberries

### **Network**

- Routers
- Gateways
- Switches
- Access Points

### **Mainframe**

- Controllers
- Tape Storage
- Disk Storage

### **Midrange**

#### **Servers**

- File
- Print
- Web
- Database
- Firewall
- Email
- Application

#### **Printers / Plotters**

#### **SAN**

#### **Telecom**

#### **Network Appliances**

#### **Imaging**

#### **Applications**

- Web
- Database
- Server
- Agency Developed

COTS  
GOTS  
MOTS  
App. Licenses  
TS/CITRIX Apps  
Security  
Communications  
Management

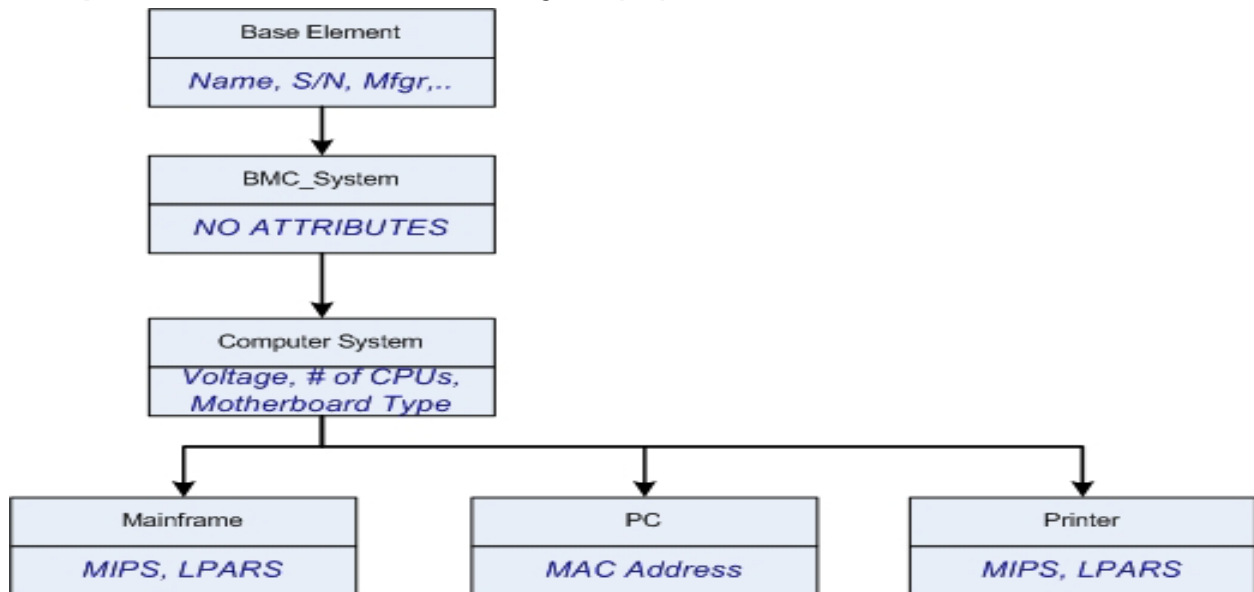
**Financial**

Contracts  
Warranties  
Leases

**Facilities**

UPS  
Generators  
HVAC  
Racks

**Sample Common Data Model Object (CI)**



## **Data Sources identified in Sessions**

Access DB  
Excel Spreadsheet  
Remedy Asset Line (Helpdesk)  
FAS (Filename and Acct. System)  
PPDB  
Security DB's  
Reports for Computers (SQL)  
NetScout  
ZenWorks Auto Inventory  
SMS  
Supplier Data  
Manual Entry  
Other Remedy Applications  
Exchange  
GroupWise  
State Mail HUB  
Various Monitoring Tools  
DS Meter  
DS Razor  
LDAP AD/NDS  
Tivoli / IDM

## Day 2 (8/21/2007)

### Agenda for the day

1. Mapping Exercise
2. Agree on Initial CI's to be tracked for Pilot, based on Available data sources.
3. Initial CI attributes
4. How do we get and maintain the data?
5. Asset Life cycles
6. Asset Details – Warranty, Contracts, etc.
7. Main., Schedules, Audits, etc.

### Initial CI Draft

Exchange Profile	e-Dir Server_SW
User Account	e-Dir Server_HW
Work Station	Console
Info for Exchange Svr.	Chng Prev Accidents
Domain	Create Ch Request
File	Remedy AR System SW
Firewall RFC	Remedy AR System DB
Developer	Staging Process
New_PC	Staging Doc
DEV_OS_PC	SD AMD Group
DEV_MSWord_PC	e-Dir Account
DEV_Email_PC	GW Account
Network Switch	Remedy Acct
Network Router	SDPC
Router_OS	GW Client
Email	GW Server SW
Firewall	GW Server HW
Firewall_OS	Printer
ARServer	Print Svr. HW
ARSvrApp	Print Svr. SW
ARUserProd	Manual Sort
BMC_HelpDesk	Ms Access
BMC_DBApp	AMD DB
ARServerOS	File System Svc.
Process	Remedy User
Firewall	Remedy Server HW
Staging AMD	
Server_File	

## **Tasks**

SDC – Managed CI's

Phase 1 – Network Services

Phase 2 – Mainframe

Phase 3 – Distributes Servers

SCD – Providers

Phase 1 – Remedy (Asset Lite), Excel (Supplemental)

Phase 2 – Vendor Data, Excel

Phase 3 – Vendor, Excel, Physical, Inv., Shared Srvs.Move, Server Agents

Agencies – All Agencies physical Inventory

Phase 1 – Work Stations. Servers Not Managed by SDC

Phase 2 – Network Printers

Phase 3 – Discovered Software and License Recovery

## **Agencies – Providers**

Phase 1 –

DHS (Vendor Data), Logon script, BATCHfile, ZenWorks

Forestry – Vendors Data, SMS

DEQ – Asset Database, SMS, Vendor Data

DAS – ScriptLogic, AD

ODOT – SMS, Remedy, Asset, Quarterly Phys. Inventory

Revenue – ZenWorks

Phase 2 –

DHS – Vendor Data, TBD Discovery tool

Forestry – Vendor Data, Physical, Inventory

DEQ – Asset DB (Oracle)

DAS – ScriptLogic

ODOT – Remedy User

Revenue – Vendor Data

Phase 3 –

DHS – ZenWorks, Remedy, Manual Entry of Licenses Used

Forestry – Excel, SMS

DEQ – SMS, ScriptLogic

PAS – ScriptLogic

ODOT – SMS, Remedy Asset Mngmt.

Revenue – ZenWorks

**Operational Asset Life Cycle States**

Requisition

Acquisition

Received

Configuration

Deploy

Maintain

Retrieve

Dispose

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**Day 3 (8/22/2007)**

**Foundation Data Operational Hierarchy**

DHS  
Division  
Office  
Sector / Unit  
Team

SDC  
Domain  
Unit

DAS  
Division  
Sector

ODOT  
Division  
Section  
District

Revenue  
Division  
Section  
Unit

DEQ  
Region  
Division  
Program

Forestry  
Division  
Section  
Unit

### Foundation Data Location Hierarchy

DAS City Street Address	SDC City Street Address	DEQ Headquarters Region	ODOT Street City Zip Region District Other (BLdg \$ Flr. Svc. Group)
DHS County Site (Address)	Forestry H.Q. Area District	Revenue Building Field	

### Foundation Data Support Group Hierarchy

DHS Section CSS Team (Back Office) Role ( External Admin)	SDC Service Desk Domain Units Tier 2 Tier 3	DAS Help Desk Tech Support Front Office Back Office	Forestry Help Desk Tech Support Sys Admin Field Coordinator
DEQ Headquarters Region	Revenue Billing Field Office		

**Foundation Data Categories and actions required.**

- Company (Agencies, Vendors, Customers, Partners, etc.)
- Organization – Discuss and Normalize structure
- Location – Collect Data
- Support Groups – Collect Data
- People (Where we are getting our data) – (Use Home Address as Secondary Address)
- Product Categorizations – Determine Tier 1 (Should be Global)
- Operational Categorizations

**Possible Operational Categories (Example)**

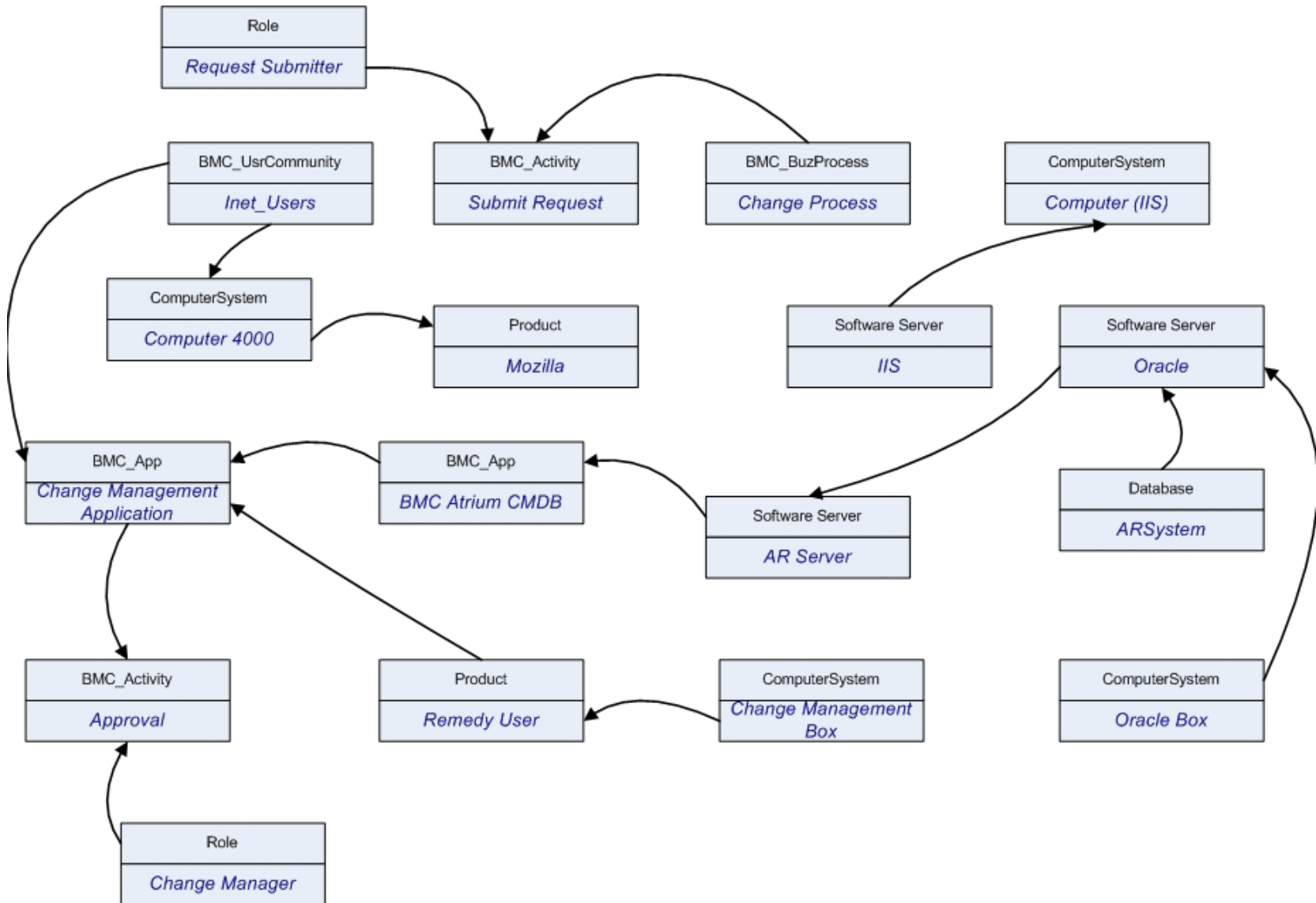
- Unable to Logon
- PW Reset
- Cannot Use email
- Install Software
- No Internet
- Received Spam

**Operational Categorization Example**

Do	What	To What
Install	Account	Desktop
Create	Hardware	Email
Repair	Connectivity	SAN
Add	Software	Network
Validate		Requestor
Relocate		System
Remove		Peripheral
Suspend		Application
Training / Inquiry		Process

Across all classes of foundation data, issues were identified and discussed. To leverage any ITIL or ITSM process in a systematic way across organizations mandates a project to rationalize foundation data into a consistent, cohesive, and effective structure.

## Working Common Data Model definition exercise, CI Dependency Diagram



# ITIL / ITSM Application Readiness

This section of the report summarizes application readiness for primary ITIL disciplines supported by the BMC ITSM suite. The State's agenda and limited time did not support full analysis; limitations in this section validate the recommendation for the Enterprise Scope Analysis project.

## Incident Management

The majority of participating organizations deployed Remedy Help Desk applications around 2000, with a range of ARS and Application versions in production today. The scope of the sessions did not focus on analysis of details of Incident Management so evaluation is limited. General observations indicate that the level of effort to maintain and upgrade multiple parallel systems to be inefficient. The scale of operations is reasonable for consolidation or a shared system. Use of Knowledge Management could facilitate operational efficiency.

## Problem Management

Problem management processes are not well supported by current tools. Processes are effective in the major organizations, although not measurable. Problem management efforts should be formalized and leveraged across organizations.

## Asset Management

A significant effort was made about seven years ago to improve IT Asset Management by legislative mandate. The results are generally healthy operations within organizations. An economy of scale exists for significant savings in federating or consolidating data into a common, shared CMDB.

## Change Management

Change management processes vary between organizations. Although Remedy Change tools may be available, manual processes are dominant. The lack of a Configuration Management tool to validate compliance limits effectiveness (see below). This application is recommended as the pilot process to leverage a CMDB.

## Service Level Management

Insufficient details were available to assess maturity or make recommendations.

## Service Request Management

Insufficient details were available to assess maturity or make recommendations.

## Configuration Management

Major departments have deployed common configuration management agents to workstations, and in some cases to servers. No agency revealed a successful network topology discovery toolset. Both management agents and network scanning technology are appropriate tools to populate a CMDB with accurate data, and monitor the process of change on a network over time.