



## ***An IT Governance Solution:***

# ***Performing Integrated Process Improvement and Appraisals Using an Integrated System Framework (ISF®)***

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CMMI® Technology Conference and User Group**



# ISD - Who We Are

Integrated System Diagnostics (ISD) is a multinational company dedicated to process improvement, quality and performance management.

ISD Principals were Senior Members of the Technical Staff at the SEI prior to “spinning off” the company under a Cooperative Research and Development Agreement with SEI in 1994.

ISD is a long standing and well respected *Software Engineering Institute (SEI) Partner* and ISD maintains a close collaboration with the SEI in researching, developing and delivering process and quality improvement solutions.

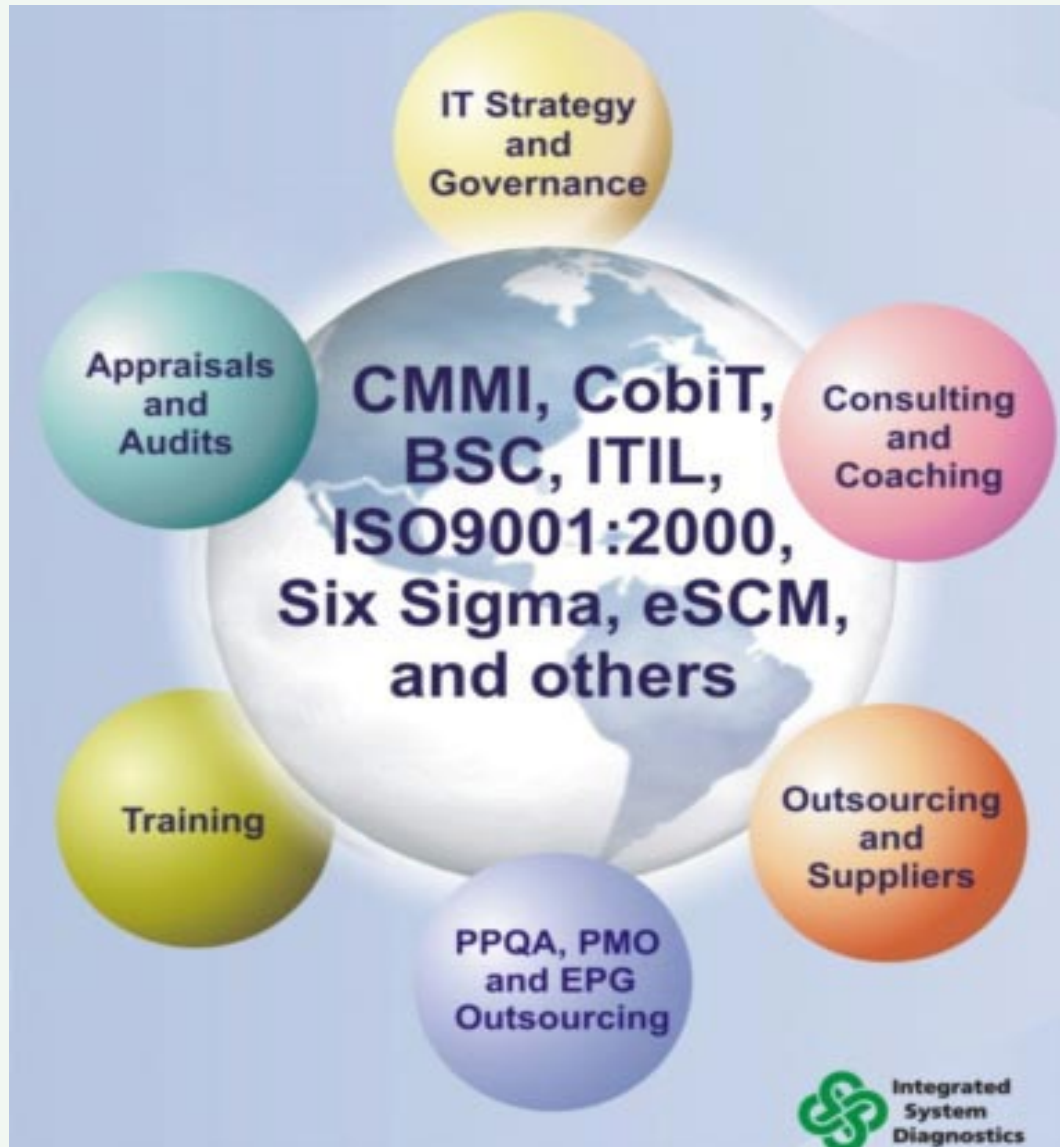
ISD is also an *IT Services Qualification Center (ITSqc) Partner* for delivering eSCM-SP and eSCM-CL (IT-Enabled Sourcing Capability Models) services.

*SEI and ITSqc are entities of Carnegie Mellon University*

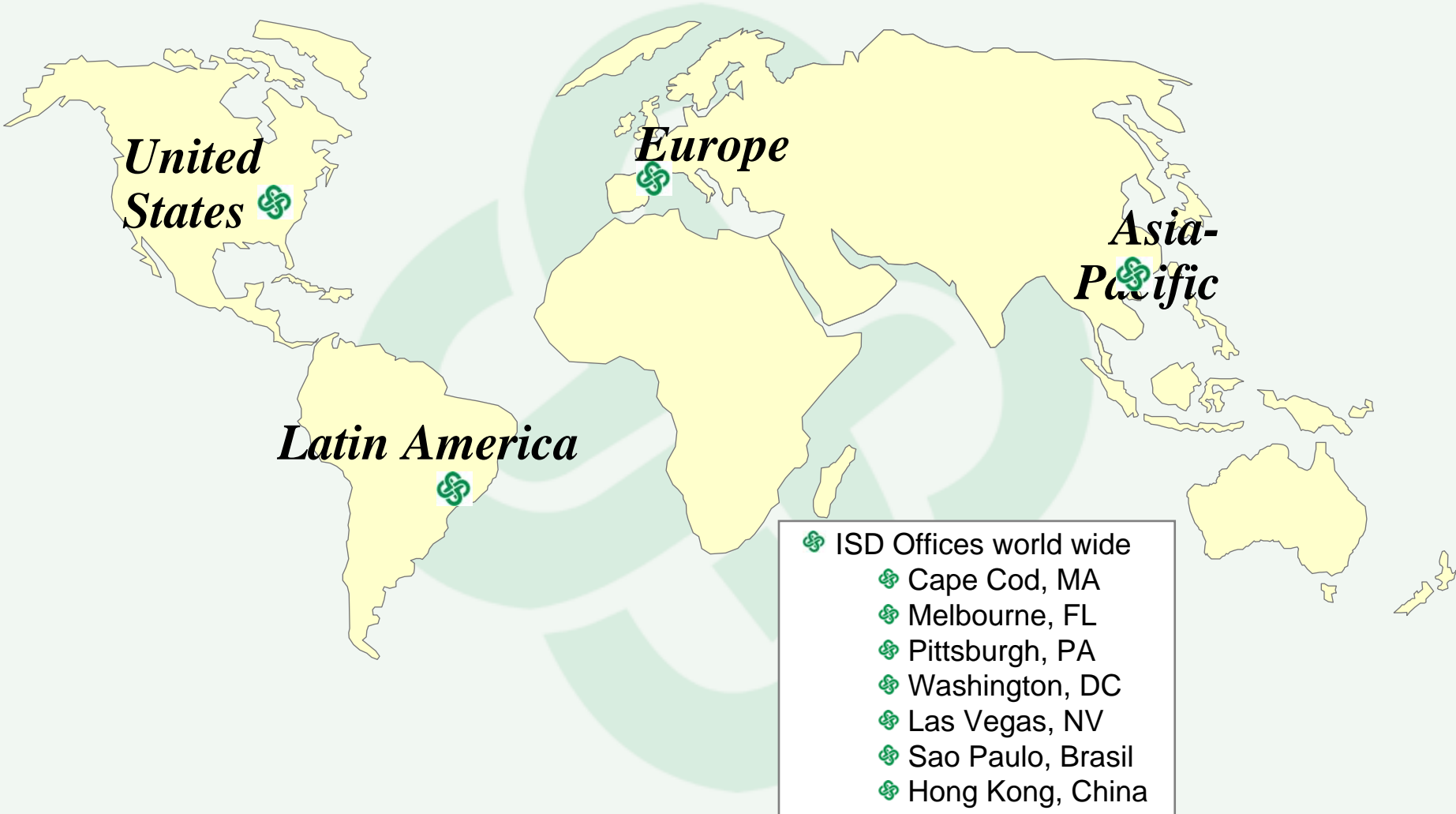
*SEI – Software Engineering Institute*

*ITSqc – IT Services Qualification Center*

# ISD - What We Do



# ISD - Where We Operate



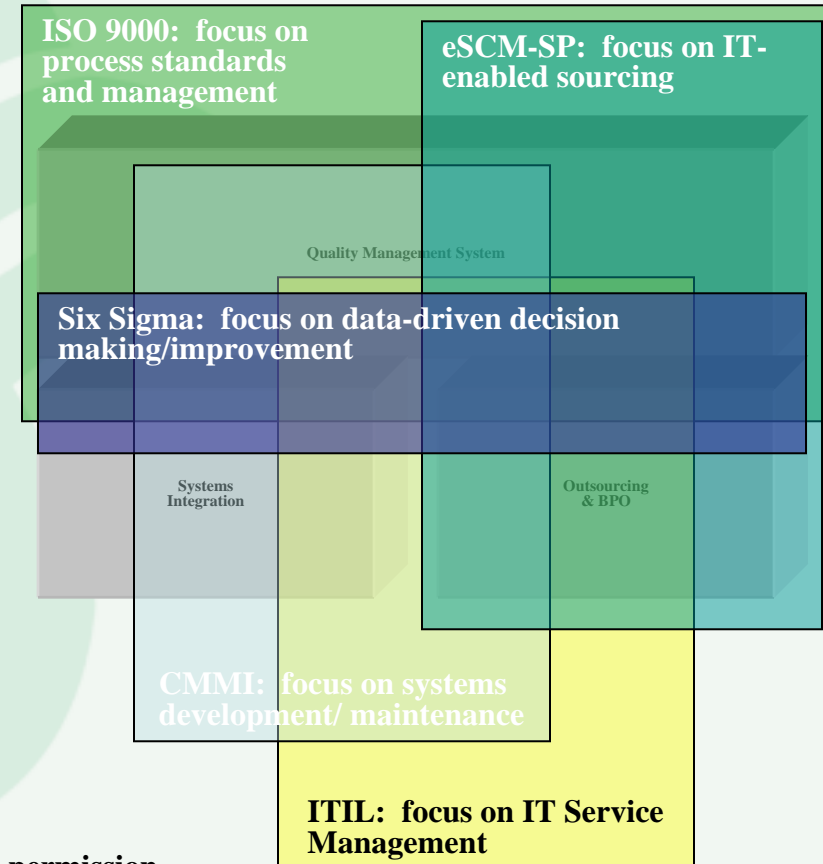
- Refresh on the Need for Integrated Enterprise Improvement
- Refresh on the Integrated System Framework (ISF)
- Current Case Studies: Using ISF
- Next Steps

# A Global Problem: “A Frameworks Quagmire”

- Process standardization and improvement efforts are expanding across the entire enterprise.
  - Process models and frameworks are proliferating to focus on different domains/disciplines within an enterprise.
  - The impact and implementation is global.
  - Compliance requirements levied by customers using these frameworks is driving costs in the opposite direction of management desires.
- Domain and business area specific reference models and frameworks
  - Directly address process needs of specific sub-communities on both the client and provider sides.
    - Can cause sub-optimal investments in process
    - Can cause counter productive implementations
    - Produce large expense side inefficiencies
  - *Can* be successfully integrated into an enterprise improvement effort.

# A Business Imperative: Key Models Have Overlapping Content

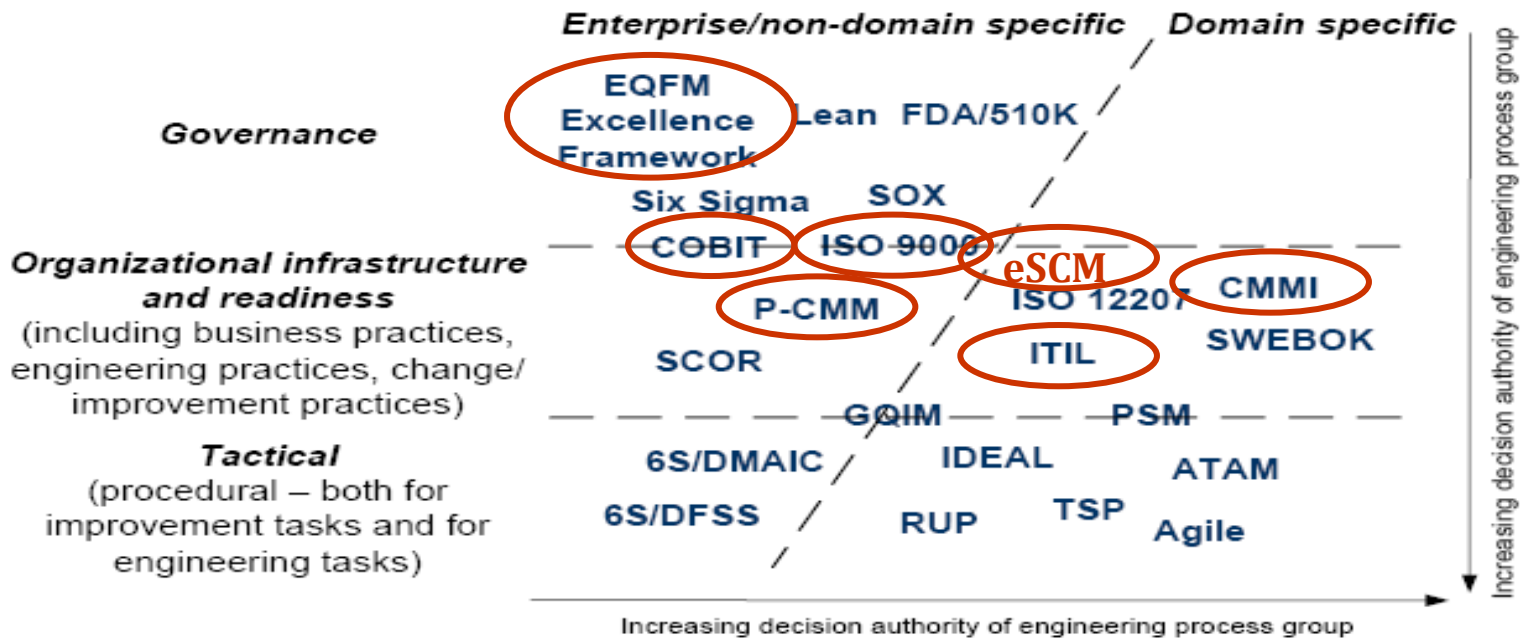
- Most standards/models have content overlap
  - Often based on Total Quality Management (TQM) and Deming’s plan-do-check-act principles
  - Some core topics show up in most models
- Each industry standard/model has a ‘sweet spot’ or particular area of focus. For example:
  - CMMI is particularly focused on systems development and maintenance
  - eSCM-SP is focused on IT-enabled sourcing
  - COPC is focused on customer care
  - ITIL is focused on IT Service Management



Source: Accenture. Used with permission



## Strategy/Selection Patterns: *An Affinity Matrix*





# Management and Governance requires *Systemic Thinking!*



Strategic Alignment and Execution – know your business and align with it

Performance Management – manage your performance qualitative and quantitative



Innovation Strategic Projects – select and manage the right projects and add value to the organization

Risks and Operations – manage your risks and operations and take preventive and corrective actions in incidents



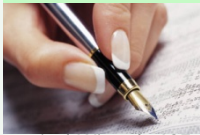
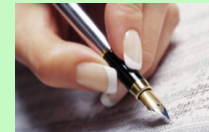
Structured and Facts-Based Decision – take decisions appropriately (time and discipline)

Suppliers and Sourcing – use the best balance between insourcing and outsourcing and manage your external and internal suppliers



Resource Management – minimize costs and make the best use of all assets and resources

Management Process and Systemic View – continuously improve your value chain and grow!

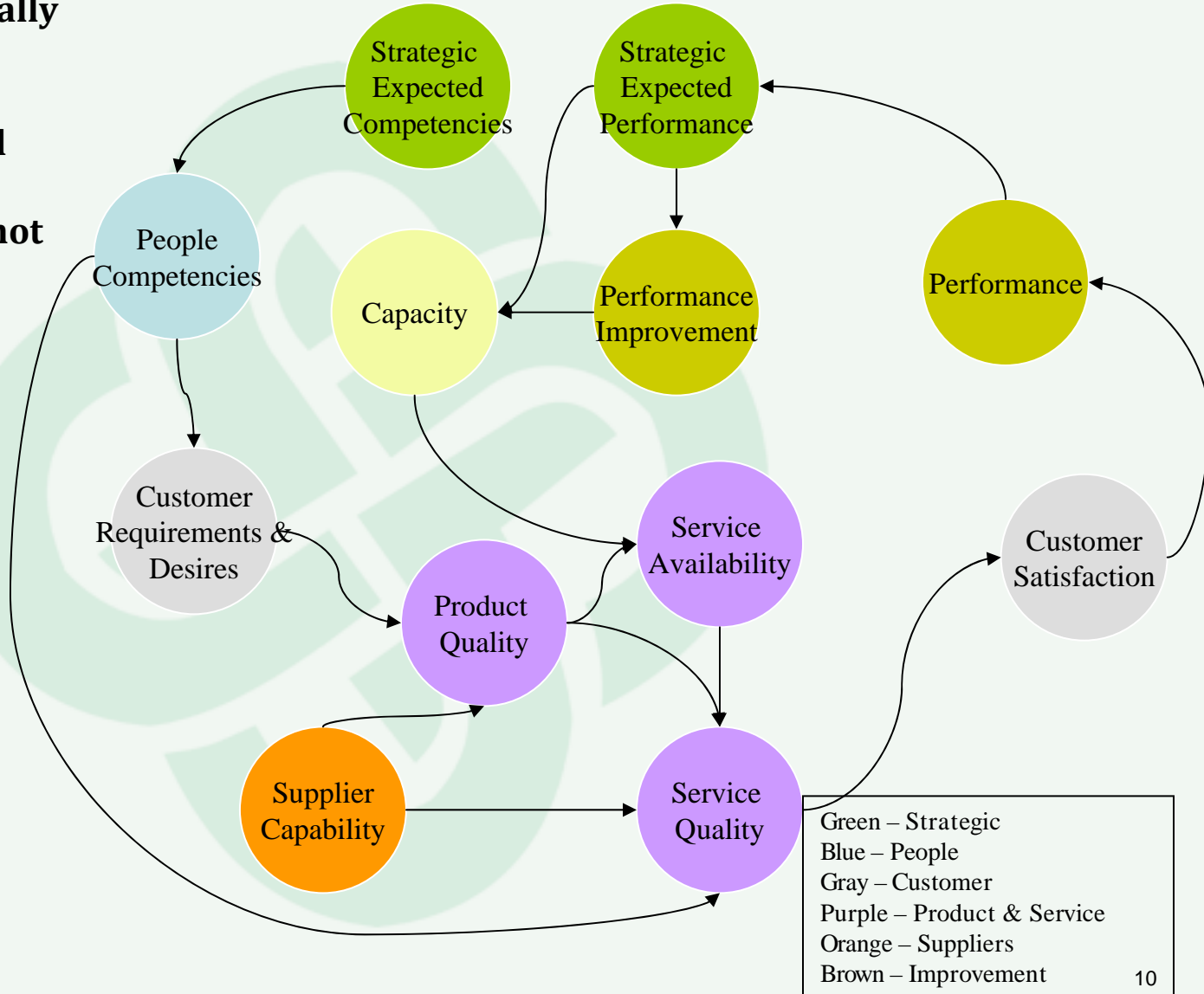


People Management – cultivate, manage and retain your talents

# “Systemic” Thinking

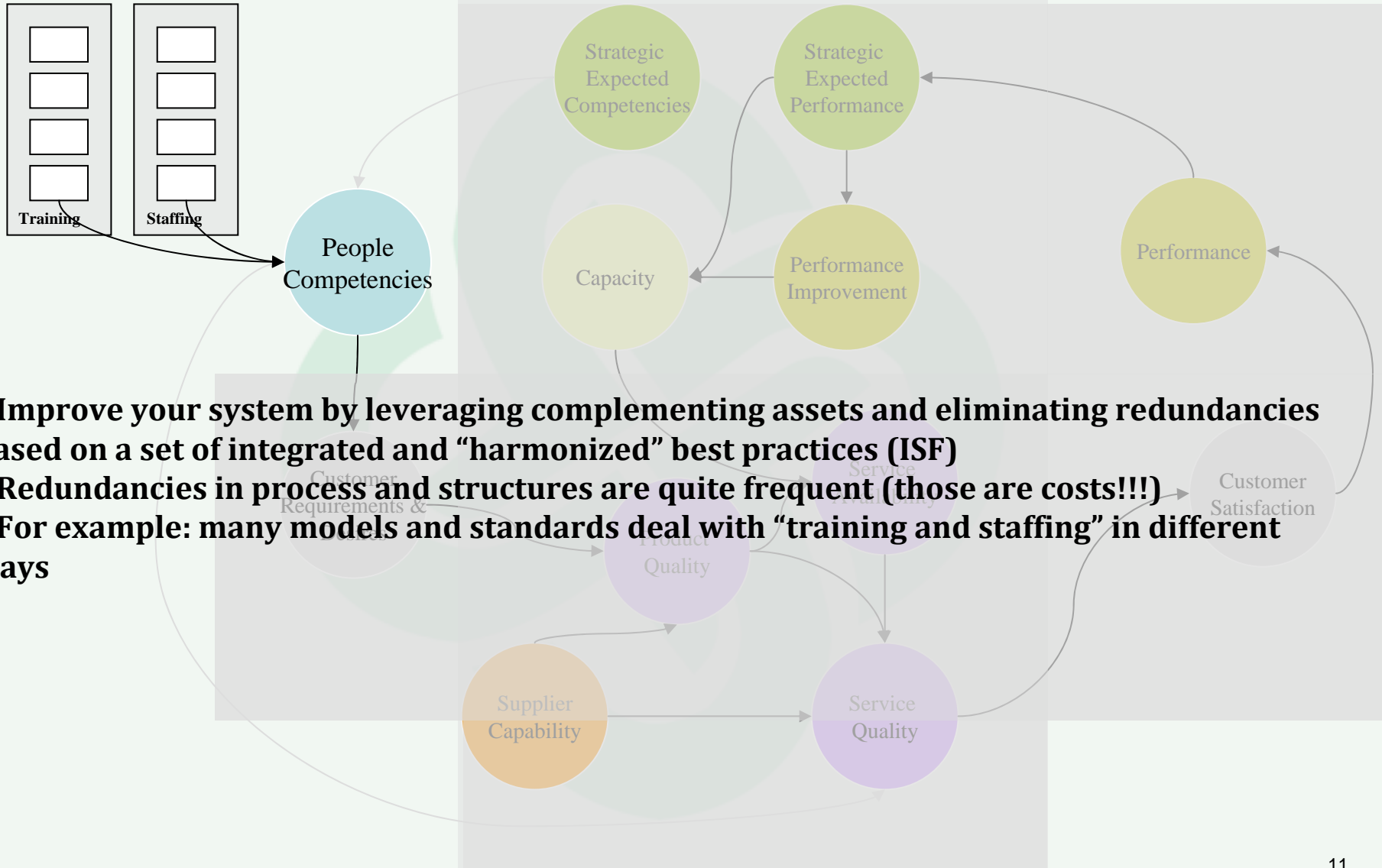
## Reason 1 – Big problems and Opportunities

- Big problems are generally intrinsically systemic
- Big opportunities and actions must be deployed through your system
- Working on parts may not improve the system
- Improvements must be done where the system is not working properly



# “Systemic” Thinking

## Reason II – Complementarities and Redundancies



- Improve your system by leveraging complementing assets and eliminating redundancies based on a set of integrated and “harmonized” best practices (ISF)
- Redundancies in process and structures are quite frequent (those are costs!!!)
- For example: many models and standards deal with “training and staffing” in different ways

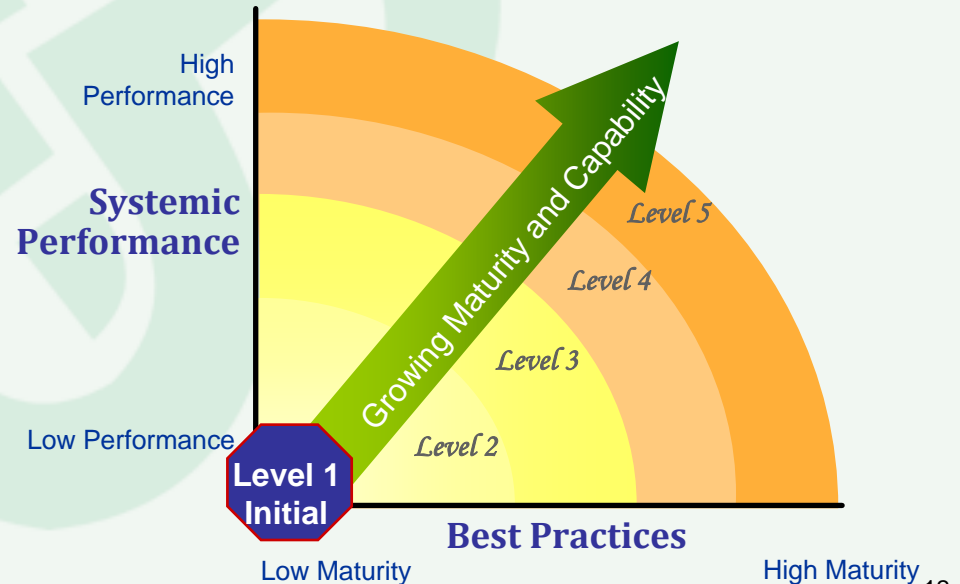
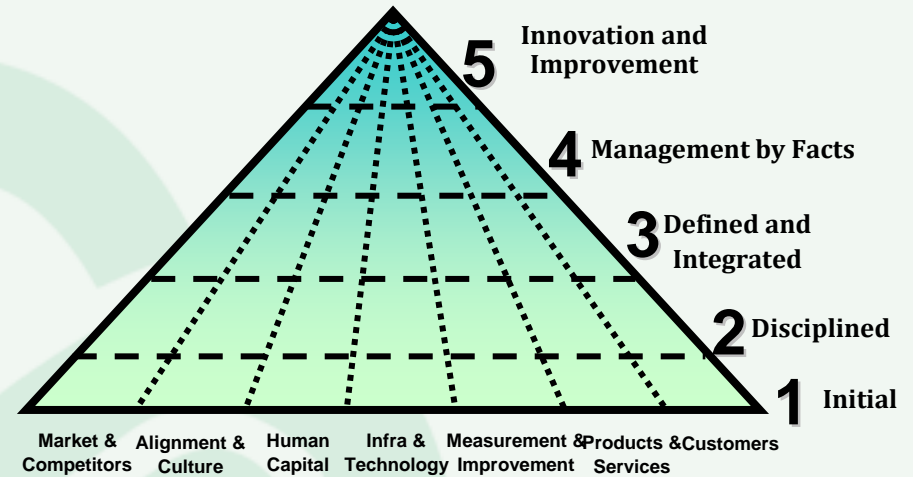
# “Systemic” Thinking

## Reason III – Problems and Opportunities

- To detect systemic problems and opportunities we have to perform integrated improvement and appraisals
- By “integrated” we mean:
  - Compliance and Performance
  - Multiple Models and Best Practices
  - Multiple Processes and Areas

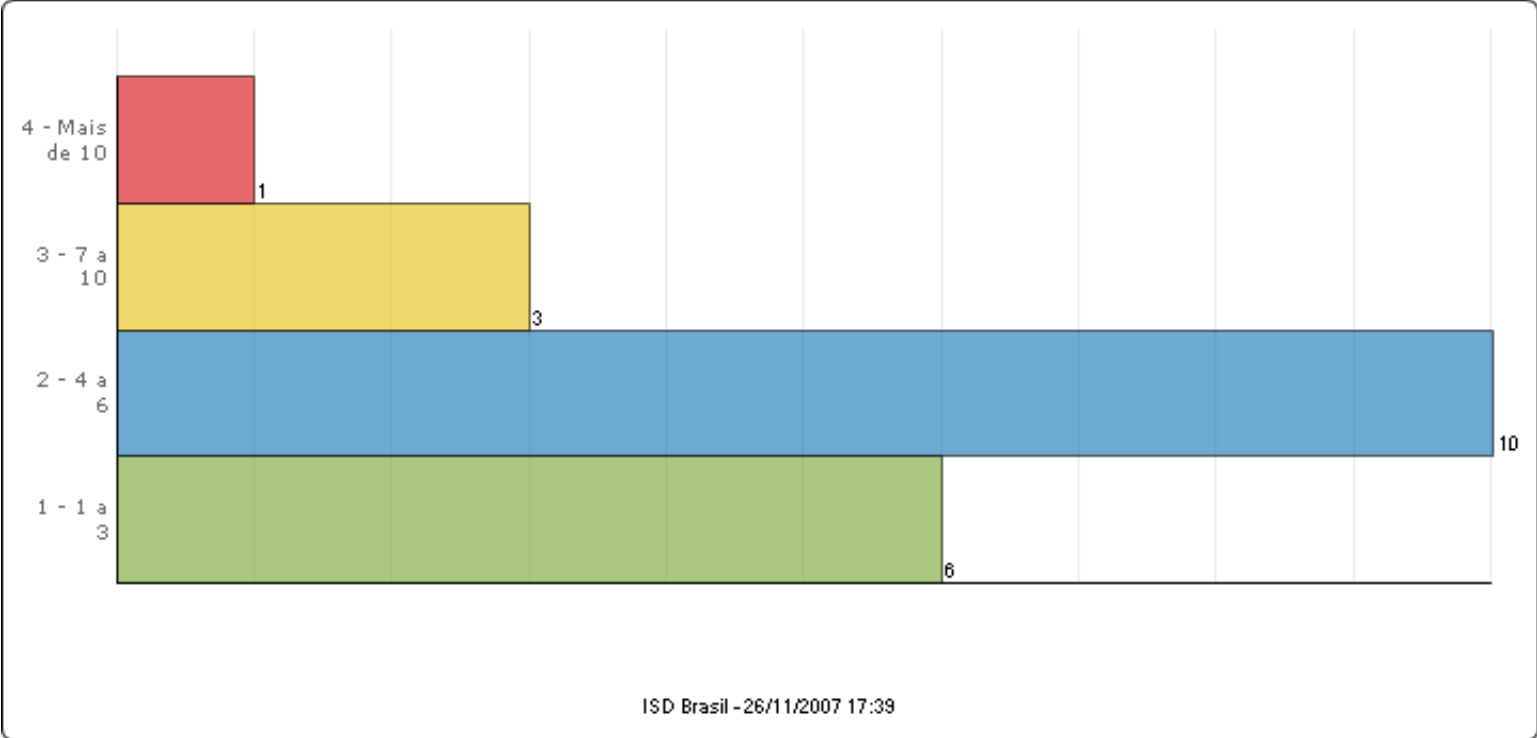
### Objectives:

- *Reduce redundancy*
- *Improve integration*
- *Create synergy*
- *Leverage best practices*
- *Make frameworks transparent*



# “Systemic” Thinking

## Reason IV – Reduce Appraisal / Audit Costs

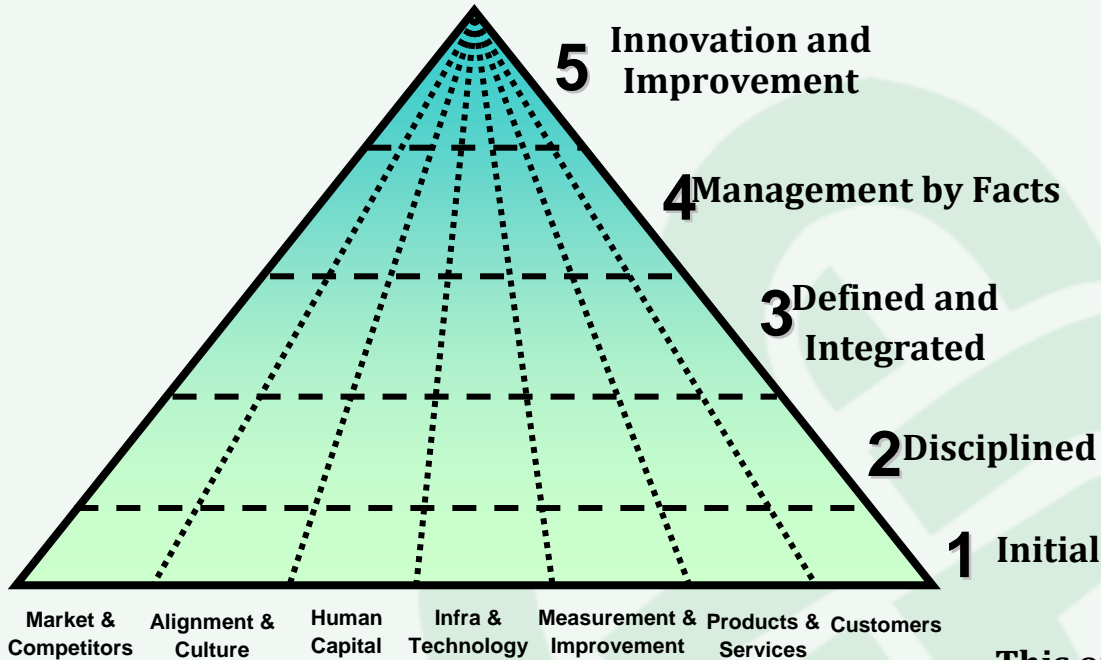


**The question is: how many appraisals and audits your organization was submitted to during a year?**

Source: ISD Brasil Survey 2007

# “Systemic” Thinking

## Reason IV – Reduce Appraisal / Audit Costs



### Scenario - Organization “X”

- ISO9001 Certified
- ISO20000 Certified
- CMMI-DEV Level 3
- eSCM-SP Level 3

### Requirements for Organization “X”

- ISO Surveillance audits during the year
- Progress CMMI Classes C and B appraisals during the year
- eSCM “Progress” Mini-Evaluations during the year

This organization will go through:

- At least 4 appraisals / audits a year
- At least 8 appraisals / audits in 2 years
- At least 20 appraisals / audits in 5 years

Now, imagine a company with at least 5 organizations like this one!

Now, calculate all costs including opportunity costs!

# Integrated System Framework® *for Excellence*

*“Many Standards, One Solution!”*

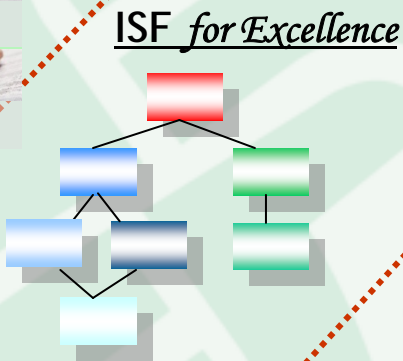


- ❧ Address a global, systemic enterprise problem of implementing, managing, maintaining, and complying with multiple process models, frameworks, and methods.
- ❧ The Integrated System Framework<sup>®</sup> provides one part of a technical solution to client requirements for
  - ❧ Optimizing cost to effectively demonstrate ongoing process adherence to multiple standard models.
  - ❧ Leveraging process investments across the enterprise to increase effectiveness of process improvement efforts.
  - ❧ Increasing synergy across business areas to improve process implementation efficiency
- ❧ Contribute to the professional model based process improvement community and positively influence its future.
- ❧ ISF<sup>®</sup> can make it easier to deal with a multi-model improvement
  - ❧ Systemic view (causal system)
  - ❧ Business, investment, and performance focus
  - ❧ Common language, robust measures
  - ❧ Use “best” of breed best practices

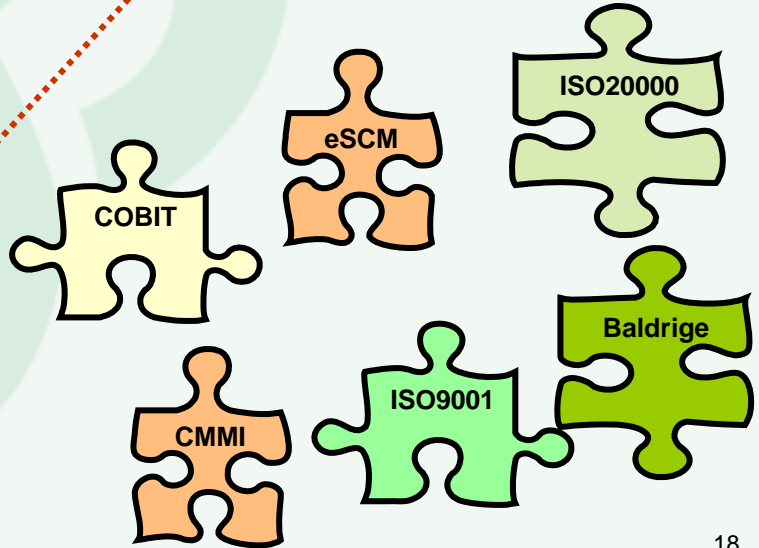
# ISF Project History

- ❖ ISD has performed various multi-model appraisals since the late 1990's.
- ❖ ISF was first envisioned in 2001 as a mechanism for ISD to support customers in multi-model environments.
- ❖ ISD has developed ISF since 2003 following customers needs and requirements related to appraisals and consultancy demands.
- ❖ Since 2006, ISF has been developed by ISD Brasil and PUC-RS (Brazilian Catholic University) as a formal research project.

### Management and Governance Themes



### World of Best Practices



- Objectives:**
- Reduce redundancy
  - Improve integration
  - Create synergy
  - Leverage best practices
  - Make frameworks transparent

**ORGANIZATIONAL EXCELLENCE &  
QUALITY**

**Baldrige / EFQM**

**ISO9001**

**CONTROL & GOVERNANCE**

**CobiT**

**PEOPLE**

**SERVICES & RISKS**

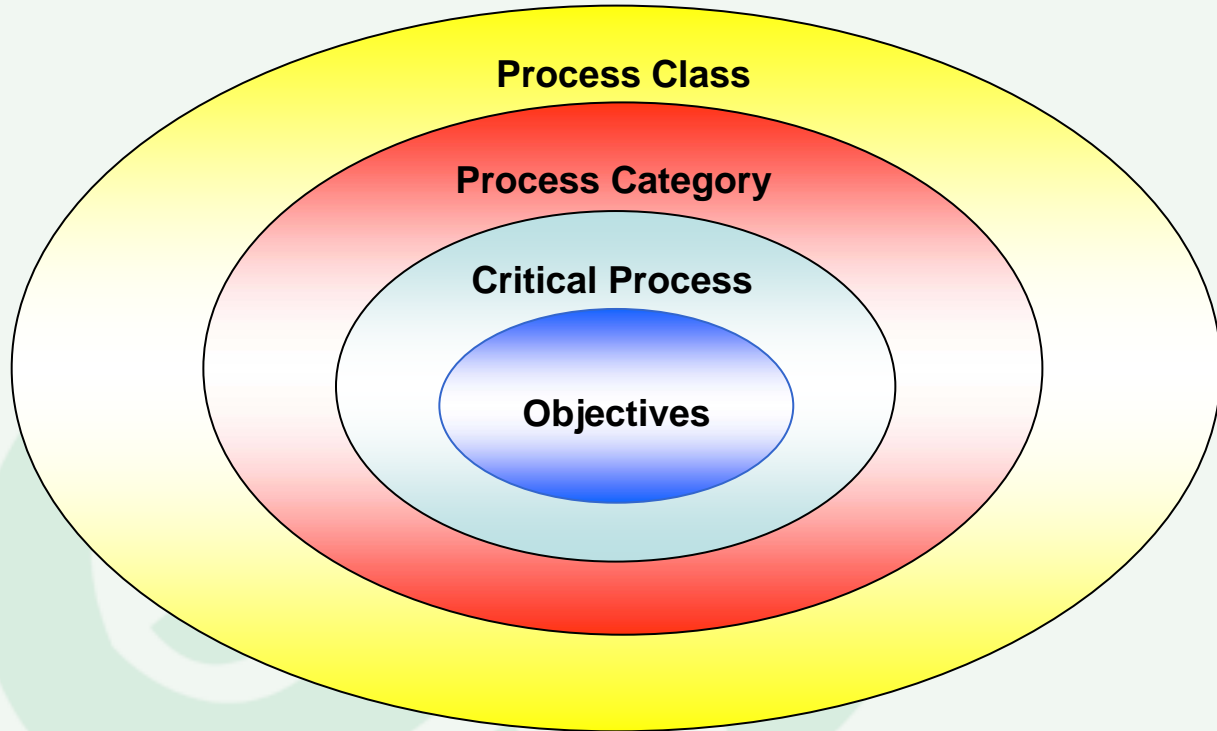
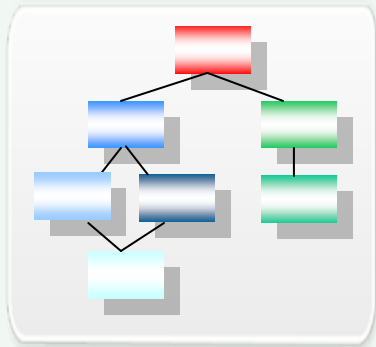
**SOLUTIONS & VALUE**

**eSCM / CMMI-Acq**

**People CMM**

**ISO20000-1**

**CMMI-Dev**



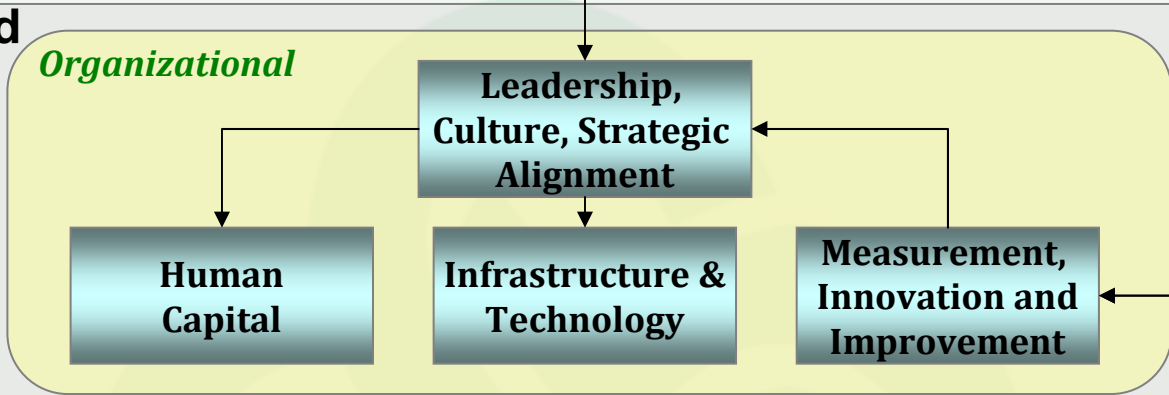
For each process "class" and "category" there will be an unique set of "CPP" (critical process for the performance) that will address (map) all the models and best practices minimizing or eliminating redundancy and respecting the overlaps.

# ISF for Excellence – Systemic View

The “green” titles are called “Classes”



*Market*



*Customers (pre-contract)*



*Products & Services*



*Customers (post-contract)*

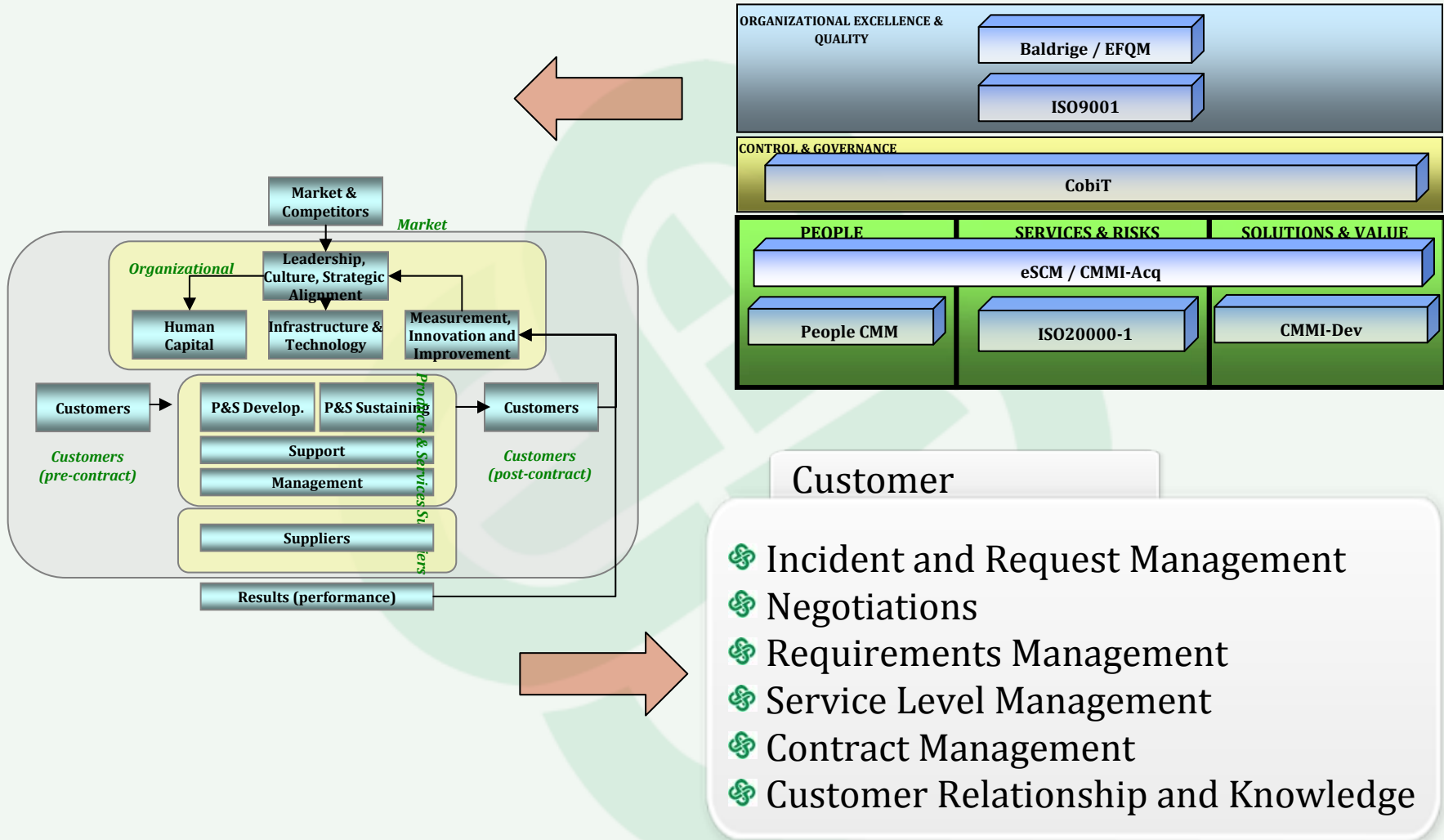


*Suppliers*

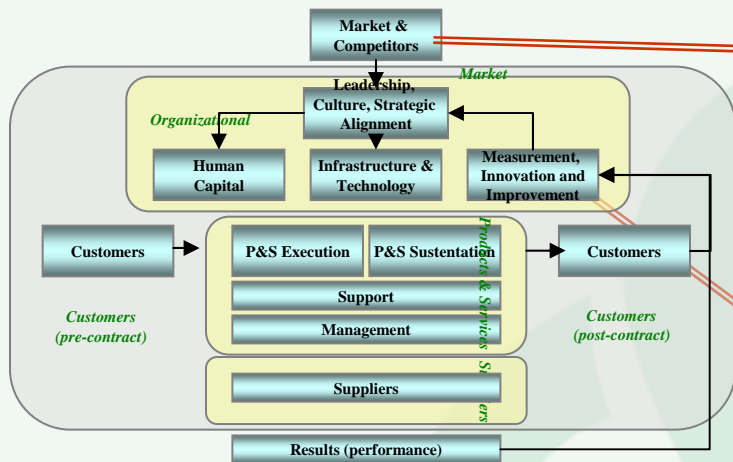


The boxes are called “Categories”

# ISF for Excellence – Examples of Areas







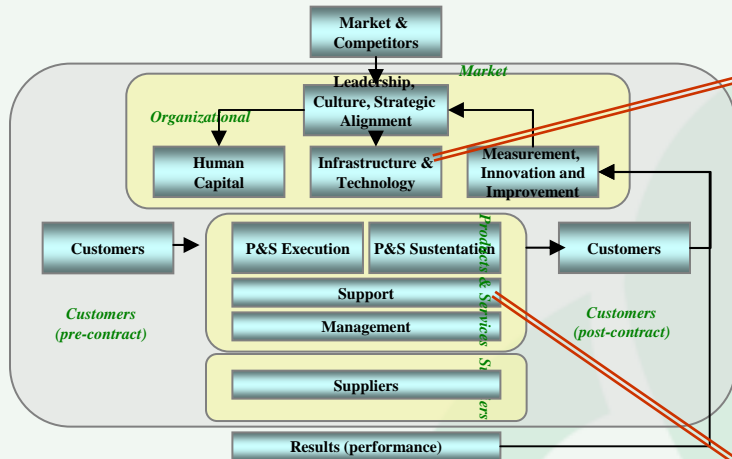
## Category: Market and Competitors

- ❖ Benchmarking
- ❖ Brand Management
- ❖ Market Knowledge
- ❖ Stakeholders Management

## Category: Measurement, Analysis and Improvement

- ❖ Measurement and Analysis
- ❖ Performance Management
- ❖ Continuous Improvement Management
- ❖ Process Assets Management
- ❖ Innovation and Performance Management
- ❖ Causal Analysis and Resolution
- ❖ Knowledge Management

**Critical Process Performance (“CPPs”) streams are similar to the concept of “process areas.”**



## Infrastructure and Technology

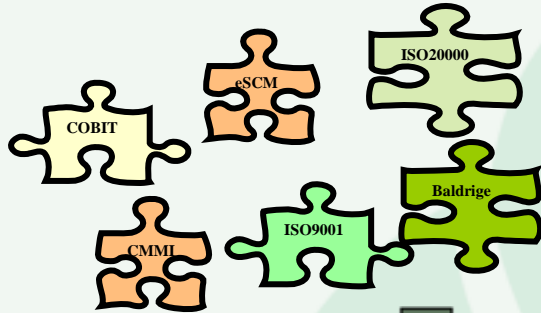
- ❖ Capacity management
- ❖ Continuity Management
- ❖ Availability Management
- ❖ Security Management
- ❖ Portfolio Management
- ❖ Infrastructure Management
- ❖ Financial and Cost Management

## Support

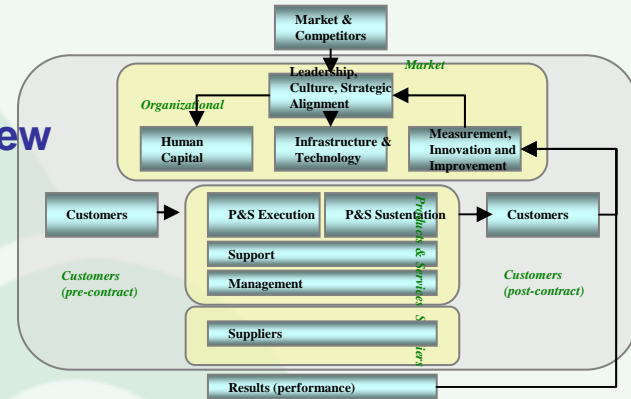
- ❖ Incident Management
- ❖ Problem Management
- ❖ Configuration Management
- ❖ Release Management
- ❖ Change Management
- ❖ Quality Assurance Management

**Critical Process Performance (“CPPs”) streams are similar to the concept of “process areas.”**

## Best Practices



## Integrated View



## Process Definition



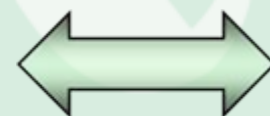
## Diagnostic Tools



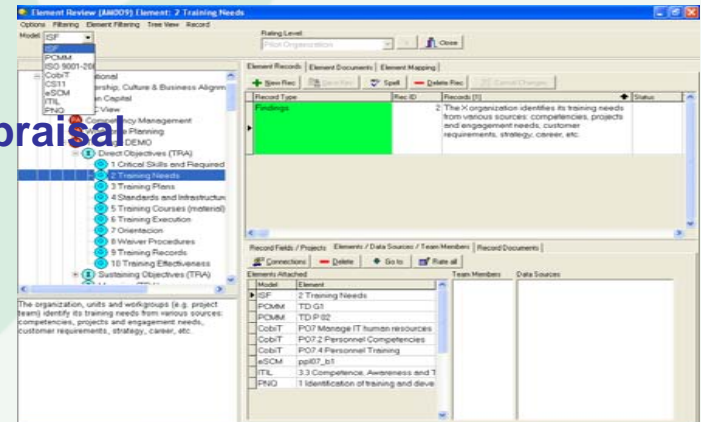
## Customer Process Architecture



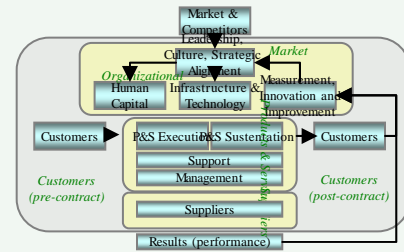
## Enterprise Appraisal



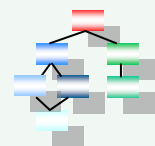
## Appraisal Wizard



# Relationship: Enterprise Architecture, Best Practices, Process Improvement

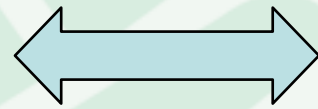


## Business Architecture



Activity A – Missing Process

Activity B – Needs Process Improvement



ISF CPP X Objective Z  
ISO Clause X  
PCCM Practice Y

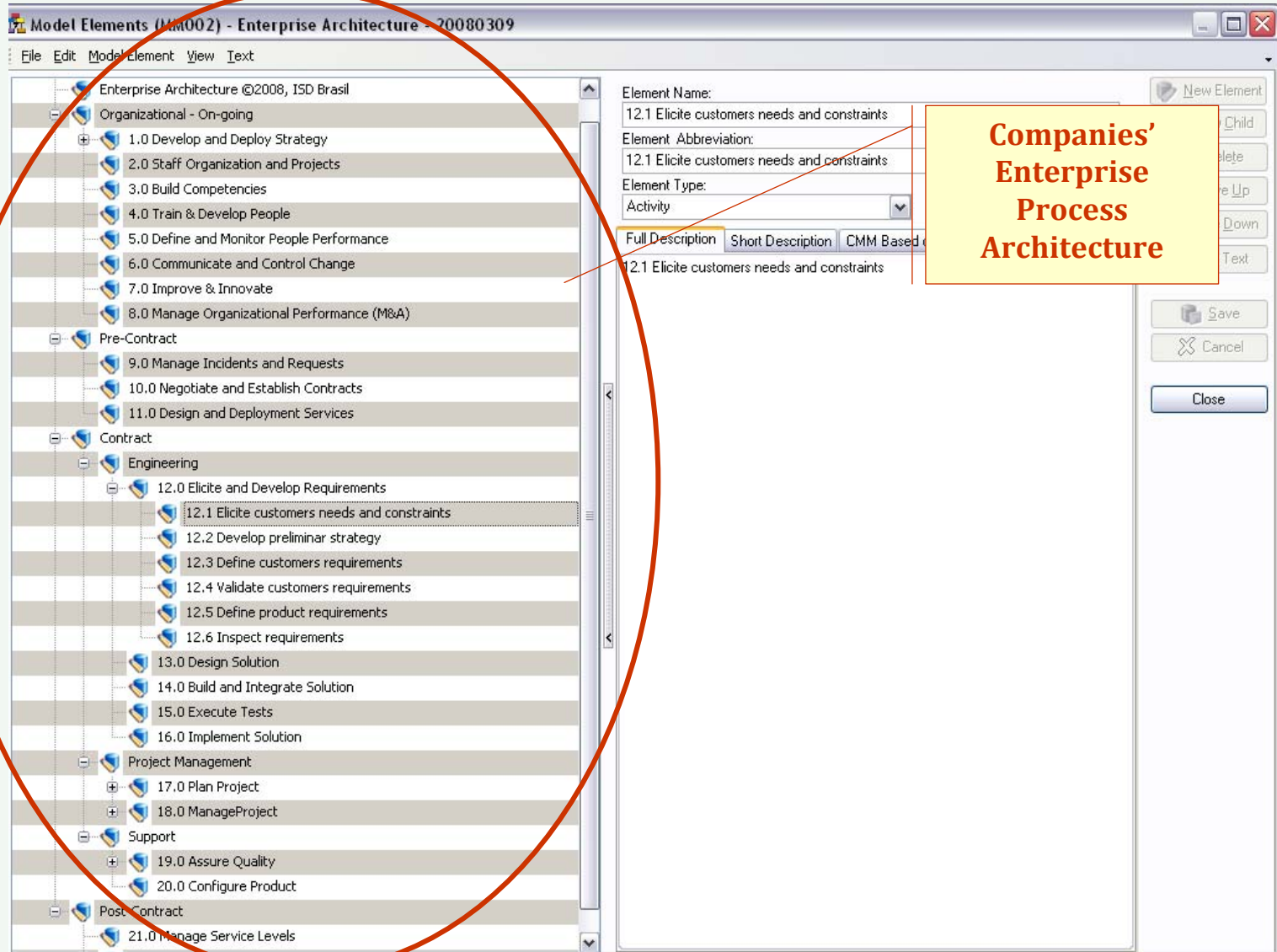
ISF CPP X Objective Z  
ISO Clause B  
CMMI Practice SP #.#

Process Improvement  
Implementation Guidance

Best Practices



Example of an appraisal “in action”  
using  
Integrated System Framework®



The screenshot shows the 'Model Elements (MM002) - Enterprise Architecture - 20080309' window. The left pane displays a tree structure of elements. The 'Engineering' section is expanded, showing sub-elements 12.0 through 12.6. Element 12.1, 'Elicit customers needs and constraints', is selected and highlighted. A red circle is drawn around the entire tree structure. A yellow callout box with red text points to element 12.1, containing the text: **Companies' Enterprise Process Architecture**. The right pane shows the details for the selected element, including 'Element Name', 'Element Abbreviation', and 'Element Type' (set to 'Activity').

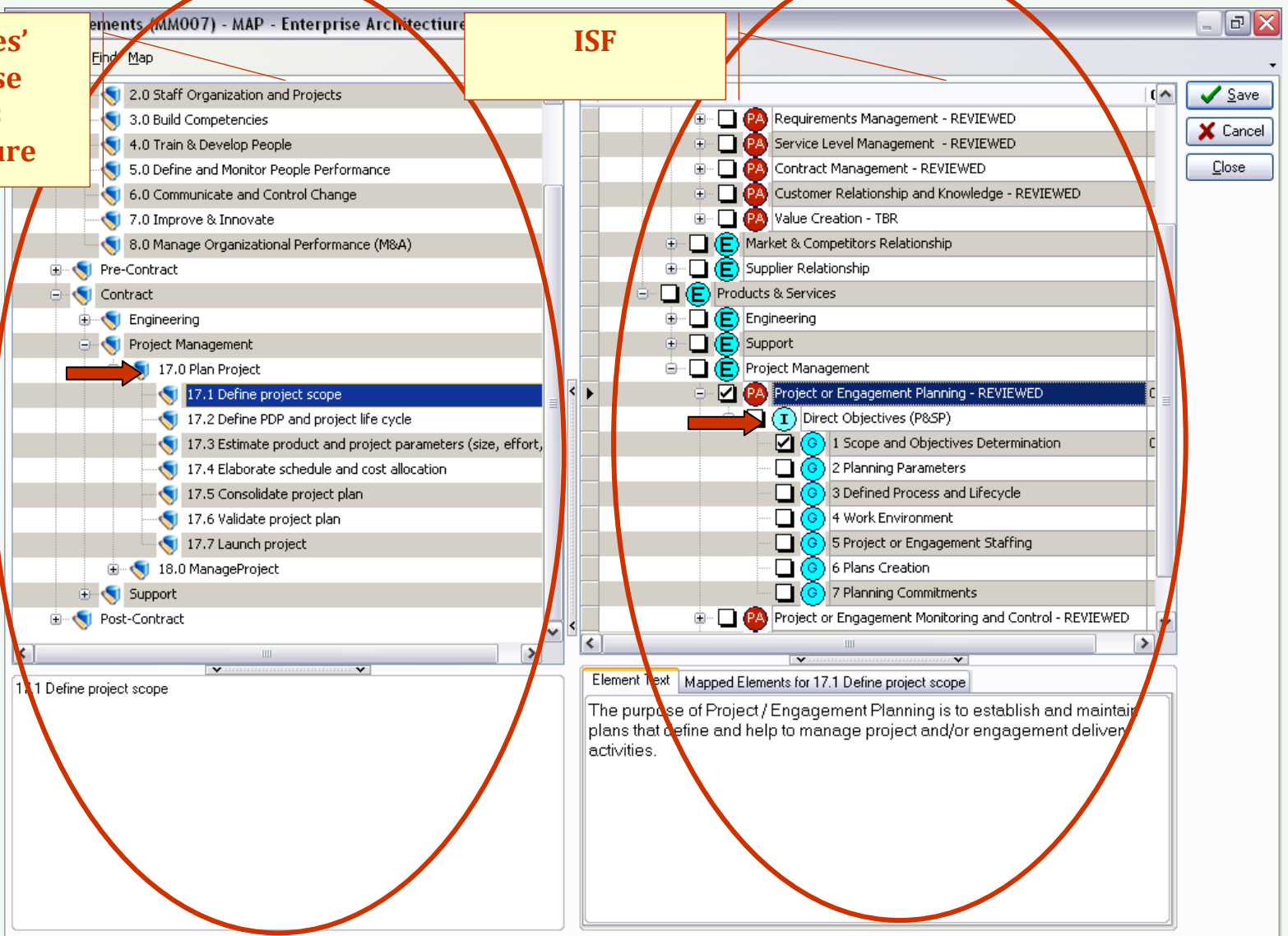


# ISF® “in action” – Step 2

## Map your Enterprise Architecture to ISF using Model Mapper™

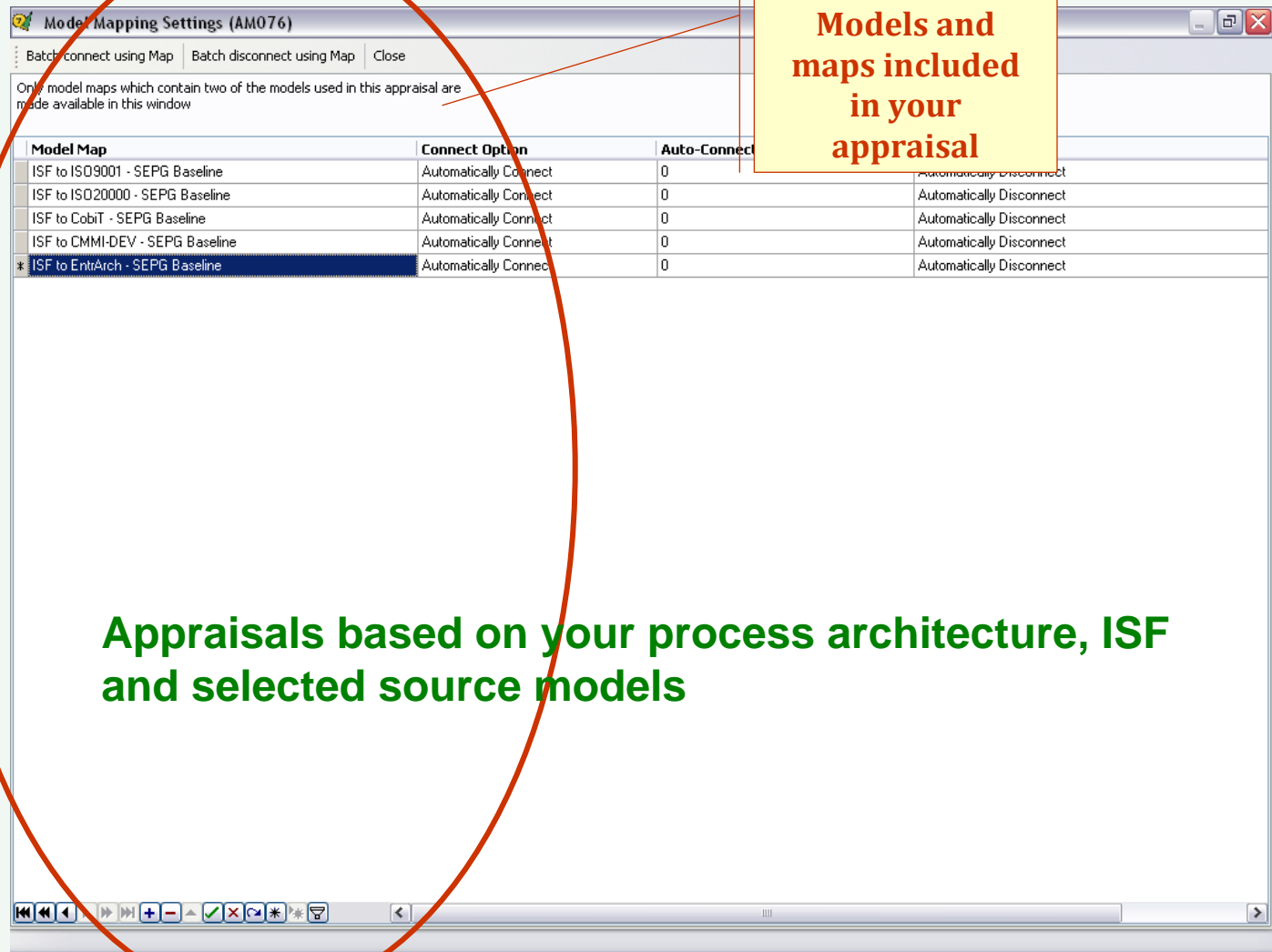
**Companies' Enterprise Process Architecture**

**ISF**



The screenshot displays the Model Mapper interface with two main panes. The left pane, titled 'Elements (MM007) - MAP - Enterprise Architecture', shows a hierarchical tree of process elements. The right pane, titled 'ISF', shows a list of ISF elements. A yellow box labeled 'ISF' is positioned above the right pane. Two red circles highlight the mapping process: one circle encompasses the left pane and a yellow box labeled 'Companies' Enterprise Process Architecture', and the other circle encompasses the right pane and a yellow box labeled 'ISF'. An orange arrow points from '17.1 Define project scope' in the left pane to 'Project or Engagement Planning - REVIEWED' in the right pane. Another orange arrow points from 'Direct Objectives (P&SP)' in the right pane to a list of sub-objectives. A text box at the bottom right, titled 'Element Text Mapped Elements for 17.1 Define project scope', contains the following text: 'The purpose of Project / Engagement Planning is to establish and maintain plans that define and help to manage project and/or engagement deliver activities.'





Model Mapping Settings (AM076)

Batch connect using Map | Batch disconnect using Map | Close

Only model maps which contain two of the models used in this appraisal are made available in this window

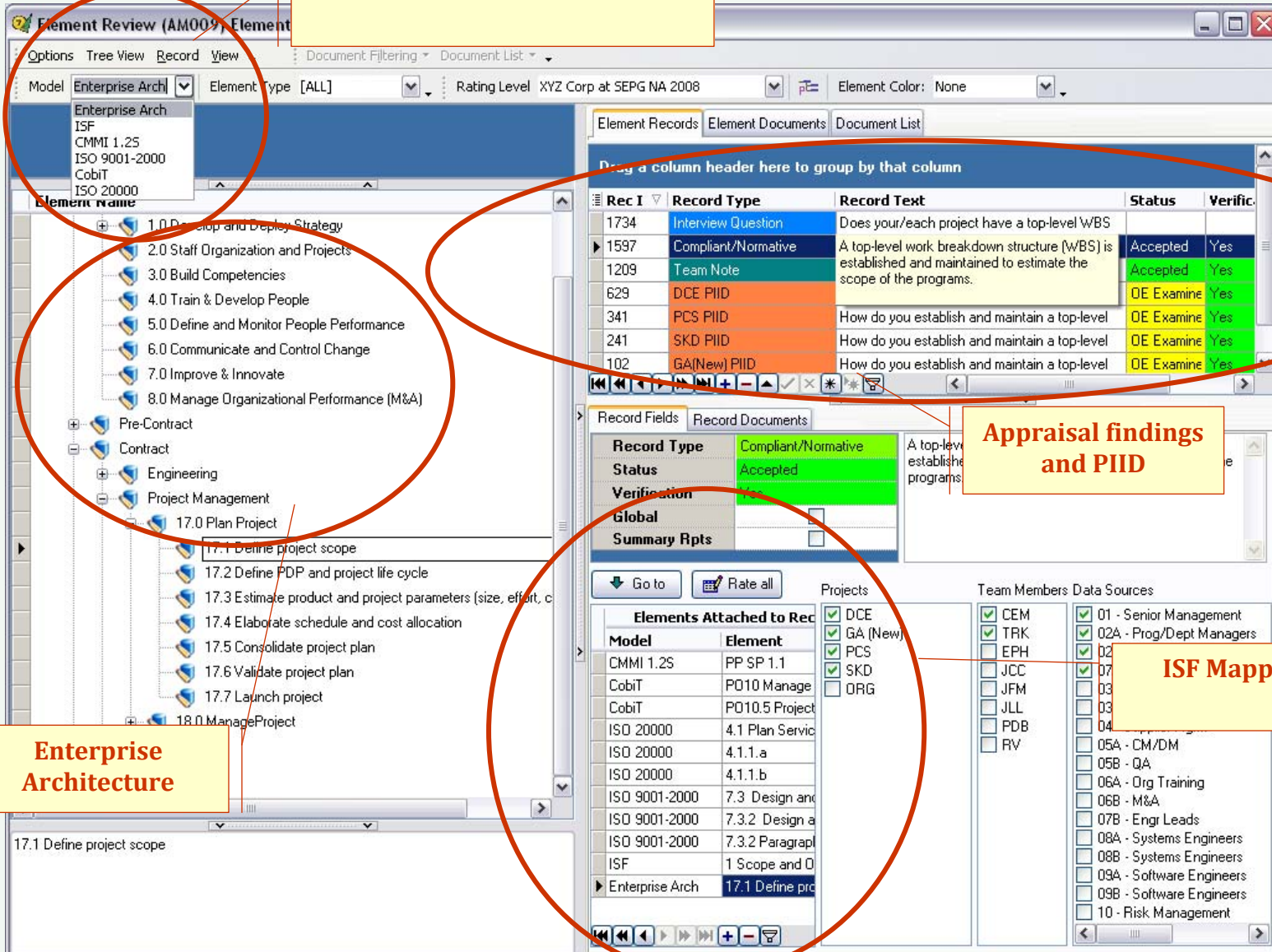
Model Map	Connect Option	Auto-Connect	Auto-Disconnect
ISF to ISO9001 - SEPG Baseline	Automatically Connect	0	Automatically Disconnect
ISF to ISO20000 - SEPG Baseline	Automatically Connect	0	Automatically Disconnect
ISF to CobiT - SEPG Baseline	Automatically Connect	0	Automatically Disconnect
ISF to CMMI-DEV - SEPG Baseline	Automatically Connect	0	Automatically Disconnect
* ISF to EntrArch - SEPG Baseline	Automatically Connect	0	Automatically Disconnect

**Models and maps included in your appraisal**

**Appraisals based on your process architecture, ISF and selected source models**

# ISF® “in action” – Step 4 Perform your Appraisals using Appraisal Wizard™

**Models and Standards involved**



The screenshot displays the 'Element Review (AM009) Element' window. The interface includes a menu bar (Options, Tree View, Record, View), a toolbar (Document Filtering, Document List), and a main workspace. The workspace is divided into several sections:

- Model Selection:** A dropdown menu shows 'Enterprise Arch' selected, with a list of models including 'Enterprise Arch', 'ISF', 'CMMI 1.25', 'ISO 9001-2000', 'CobIT', and 'ISO 20000'.
- Element Tree:** A hierarchical tree view on the left shows 'Element name' with categories like '1.0 Develop and Deploy Strategy', '2.0 Staff Organization and Projects', '3.0 Build Competencies', '4.0 Train & Develop People', '5.0 Define and Monitor People Performance', '6.0 Communicate and Control Change', '7.0 Improve & Innovate', '8.0 Manage Organizational Performance (M&A)', 'Pre-Contract', 'Contract', 'Engineering', 'Project Management', and '17.0 Plan Project'.
- Record List:** A table with columns 'Rec I', 'Record Type', 'Record Text', 'Status', and 'Verific'. It lists records such as 'Interview Question', 'Compliant/Normative', 'Team Note', 'DCE PIID', 'PCS PIID', 'SKD PIID', and 'GA(New) PIID'.
- Record Details:** A section below the table shows details for a selected record, including 'Record Type: Compliant/Normative', 'Status: Accepted', and 'Verification: Yes'.
- Elements Attached to Record:** A table with columns 'Model' and 'Element' showing mappings like 'CMMI 1.25' to 'PP SP 1.1', 'CobIT' to 'PD10 Manage', 'CobIT' to 'PD10.5 Project', 'ISO 20000' to '4.1 Plan Service', and 'Enterprise Arch' to '17.1 Define project scope'.
- Team Members Data Sources:** A list of team members and roles, including '01 - Senior Management', '02A - Prog/Dept Managers', '02B - Eng Leads', '03 - Systems Engineers', '04 - Software Engineers', '05A - CM/DM', '05B - QA', '06A - Org Training', '06B - M&A', '07B - Engr Leads', '08A - Systems Engineers', '08B - Systems Engineers', '09A - Software Engineers', '09B - Software Engineers', and '10 - Risk Management'.

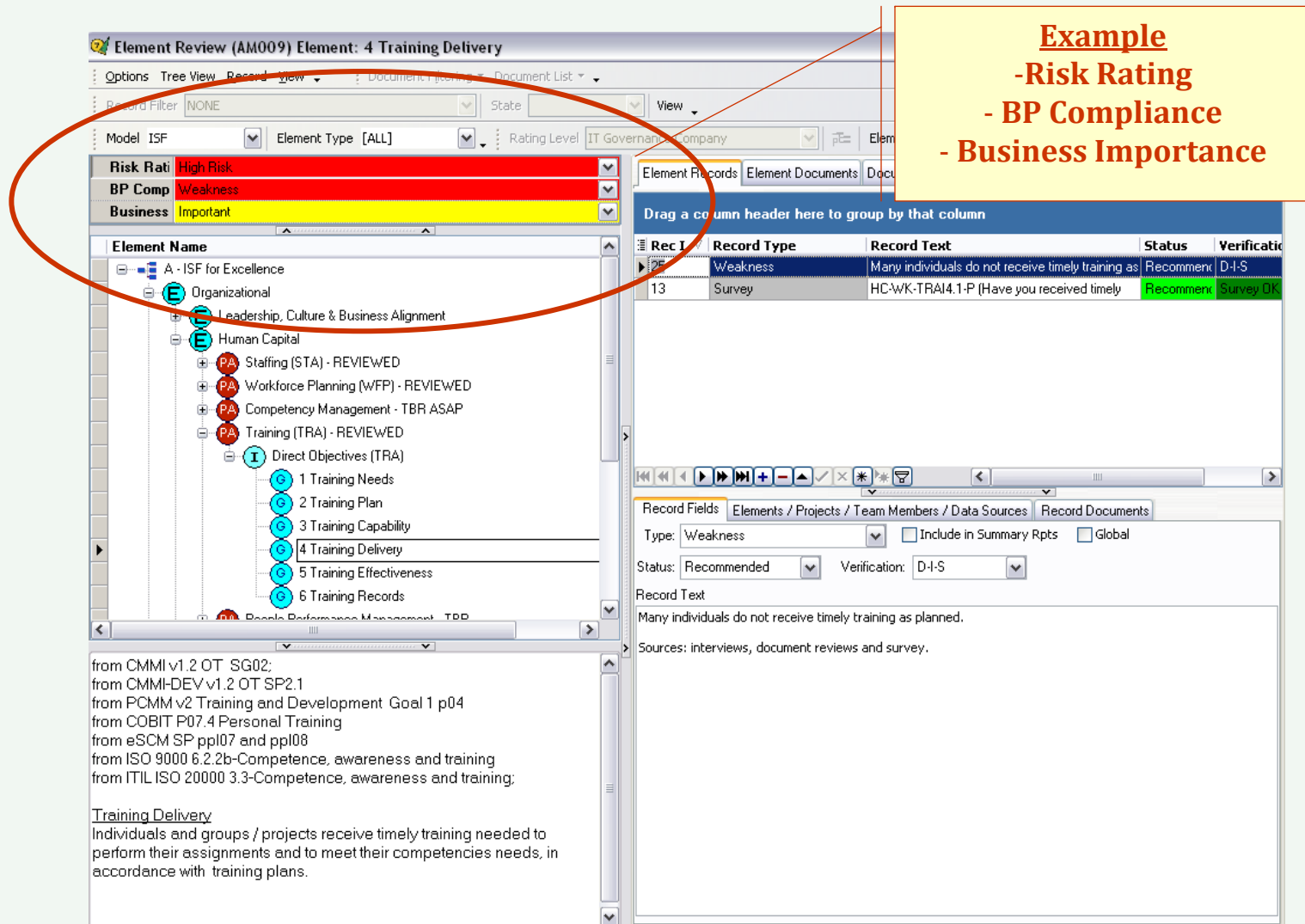
**Enterprise Architecture**

**Appraisal findings and PIID**

**ISF Mappings**

# ISF® “in action” – Step 5

## Rate elements against your Architecture, ISF and selected source models



**Example**  
- Risk Rating  
- BP Compliance  
- Business Importance

**Element Review (AM009) Element: 4 Training Delivery**

Model: ISF | Element Type: [ALL] | Rating Level: IT Governance Company

Risk Rating: High Risk  
BP Comp: Weakness  
Business: Important

**Element Name**

- A - ISF for Excellence
  - Organizational
    - Leadership, Culture & Business Alignment
    - Human Capital
      - Staffing (STA) - REVIEWED
      - Workforce Planning (WFP) - REVIEWED
      - Competency Management - TBR ASAP
      - Training (TRA) - REVIEWED
        - Direct Objectives (TRA)
          - 1 Training Needs
          - 2 Training Plan
          - 3 Training Capability
          - 4 Training Delivery
          - 5 Training Effectiveness
          - 6 Training Records

**Table:**

Rec I	Record Type	Record Text	Status	Verificati
13	Weakness	Many individuals do not receive timely training as	Recommend	D-I-S
	Survey	HC-WK-TRAI4.1-P (Have you received timely	Recommend	Survey OK

**Record Fields:** Elements / Projects / Team Members / Data Sources | Record Documents

Type: Weakness | Include in Summary Rpts | Global

Status: Recommended | Verification: D-I-S

Record Text: Many individuals do not receive timely training as planned.

Sources: interviews, document reviews and survey.

from CMMI v1.2 OT\_SG02:  
from CMMI-DEV v1.2 OT SP2.1  
from PCMM v2 Training and Development Goal 1 p04  
from COBIT P07.4 Personal Training  
from eSCM SP p07 and p08  
from ISO 9000 6.2.2b-Competence, awareness and training  
from ITIL ISO 20000 3.3-Competence, awareness and training:

Training Delivery  
Individuals and groups / projects receive timely training needed to perform their assignments and to meet their competencies needs, in accordance with training plans.

# ISF® “in action”

## integrating Multiple Appraisal and Audit Results

### Using ISF and Appraisal Wizard™

Element Review (AM009) Element: 1 Training Needs

**Integrated Audit and Appraisal Findings**

Options Tree View Record View Document Filtering Document List

Model ISF Element Type [ALL] Rating Level XYZ Corp at SEPG NA 2008 Element Color: None

Element Records Element Documents Document List

Drag a column header here to group by that column

Rec I	Record Type	Record Text	Status	Verification
2293	ISO Minor NC	Although organization workforce is trained to	Accepted	Yes
▶ 1641	CMMI Compliant	A determination is made as to which training	Accepted	Yes
1640	CMMI Compliant	The strategic training needs of the organization	Accepted	Yes
1183	Org Process PIID	How do you determine which training needs are	OE Examine	Yes
1182	Org Process PIID	How do you establish and maintain the strategic	OE Examine	Yes

Record Fields Record Documents

Record Type	CMMI Compliant	A determination is made as to which training needs are the responsibility of the organization and which will be left to the individual program or support group.
Status	Accepted	
Verification	Yes	
Global	<input type="checkbox"/>	
Summary Rpts	<input type="checkbox"/>	

Go to Rate all

Elements Attached to Rec

Model	Element
CMMI 1.2 Stag	OT SP 1.2
▶ ISF	1 Training Needs

Projects

- ORG
- DCE
- GA (New)
- PCS
- SKD

Team Members Data Sources

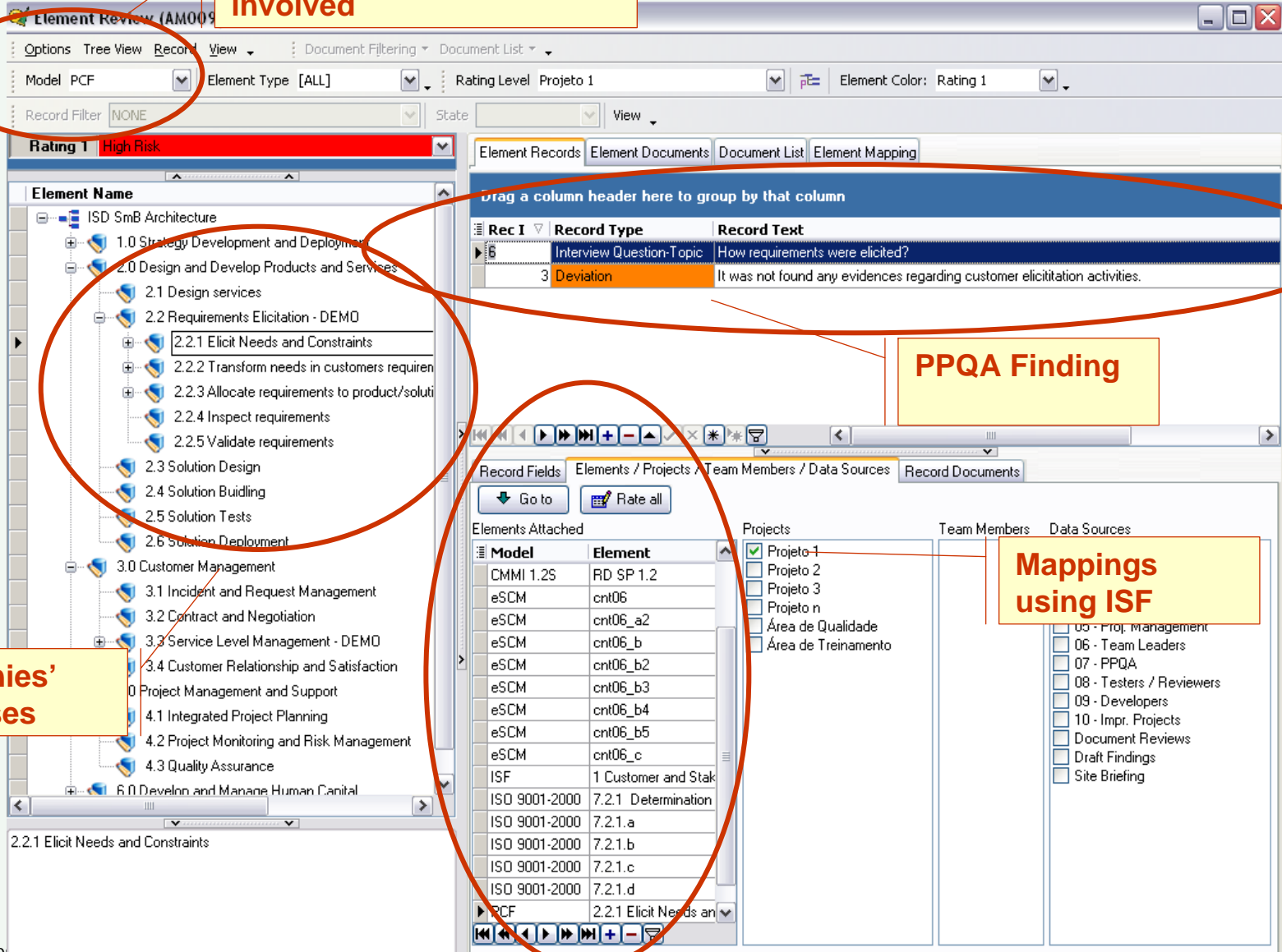
- EPH
- JLL
- CEM
- JCC
- JFM
- PDB
- RV
- TRK
- 01 - Senior Management
- 02A - Prog/Dept Managers
- 02B - Prog/Dept Managers
- 06A - Org Training
- 07A - Engr Leads
- 03A - Proj Engr/Mid Mgr
- 03B - Proj Engr/Mid Mgr
- 04 - Supplier Mgmt
- 05A - CM/DM
- 05B - QA
- 06B - M&A
- 07B - Engr Leads
- 08A - Systems Engineers
- 08B - Systems Engineers
- 09A - Software Engineers
- 09B - Software Engineers
- 10 - Risk Management

from ITIL ISO 20000 3.3-Competence, awareness and training  
 from ISO 9000 6.2.2b-Competence, awareness and training  
 from PNQ 2006 6.2-Capacitação e desenvolvimento  
 from CMMI-DEV v1.2 OT SP1.1 and SP1.2  
 from PCMM v2 Training and Development - p01 p02  
 from eSCM SP pp107-Plan and deliver training

**ISF Component**

# ISF "in action" in a PPQA Review

**Models and standards involved**



Options Tree View Record View Document Filtering Document List

Model PCF Element Type [ALL] Rating Level Projeto 1 Element Color: Rating 1

Record Filter NONE State View

**Rating 1 High Risk**

Element Name

- ISD SmB Architecture
  - 1.0 Strategy Development and Deployment
  - 2.0 Design and Develop Products and Services
    - 2.1 Design services
      - 2.2 Requirements Elicitation - DEMO
        - 2.2.1 Elicit Needs and Constraints
        - 2.2.2 Transform needs in customers requiren
        - 2.2.3 Allocate requirements to product/soluti
        - 2.2.4 Inspect requirements
        - 2.2.5 Validate requirements
      - 2.3 Solution Design
      - 2.4 Solution Building
      - 2.5 Solution Tests
      - 2.6 Solution Deployment
    - 3.0 Customer Management
      - 3.1 Incident and Request Management
      - 3.2 Contract and Negotiation
      - 3.3 Service Level Management - DEMO
      - 3.4 Customer Relationship and Satisfaction
    - 4.0 Project Management and Support
      - 4.1 Integrated Project Planning
      - 4.2 Project Monitoring and Risk Management
      - 4.3 Quality Assurance
    - 6.0 Develop and Manage Human Capital

Drag a column header here to group by that column

Rec I	Record Type	Record Text
6	Interview Question-Topic	How requirements were elicited?
3	Deviation	It was not found any evidences regarding customer elicitation activities.

**PPQA Finding**

Record Fields Elements / Projects / Team Members / Data Sources Record Documents

Go to Rate all

Model	Element
CMMI 1.2S	RD SP 1.2
eSCM	cnt06
eSCM	cnt06_a2
eSCM	cnt06_b
eSCM	cnt06_b2
eSCM	cnt06_b3
eSCM	cnt06_b4
eSCM	cnt06_b5
eSCM	cnt06_c
ISF	1 Customer and Stak
ISO 9001-2000	7.2.1 Determination
ISO 9001-2000	7.2.1.a
ISO 9001-2000	7.2.1.b
ISO 9001-2000	7.2.1.c
ISO 9001-2000	7.2.1.d
PCF	2.2.1 Elicit Needs an

Projects

- Projeto 1
- Projeto 2
- Projeto 3
- Projeto n
- Área de Qualidade
- Área de Treinamento

Team Members Data Sources

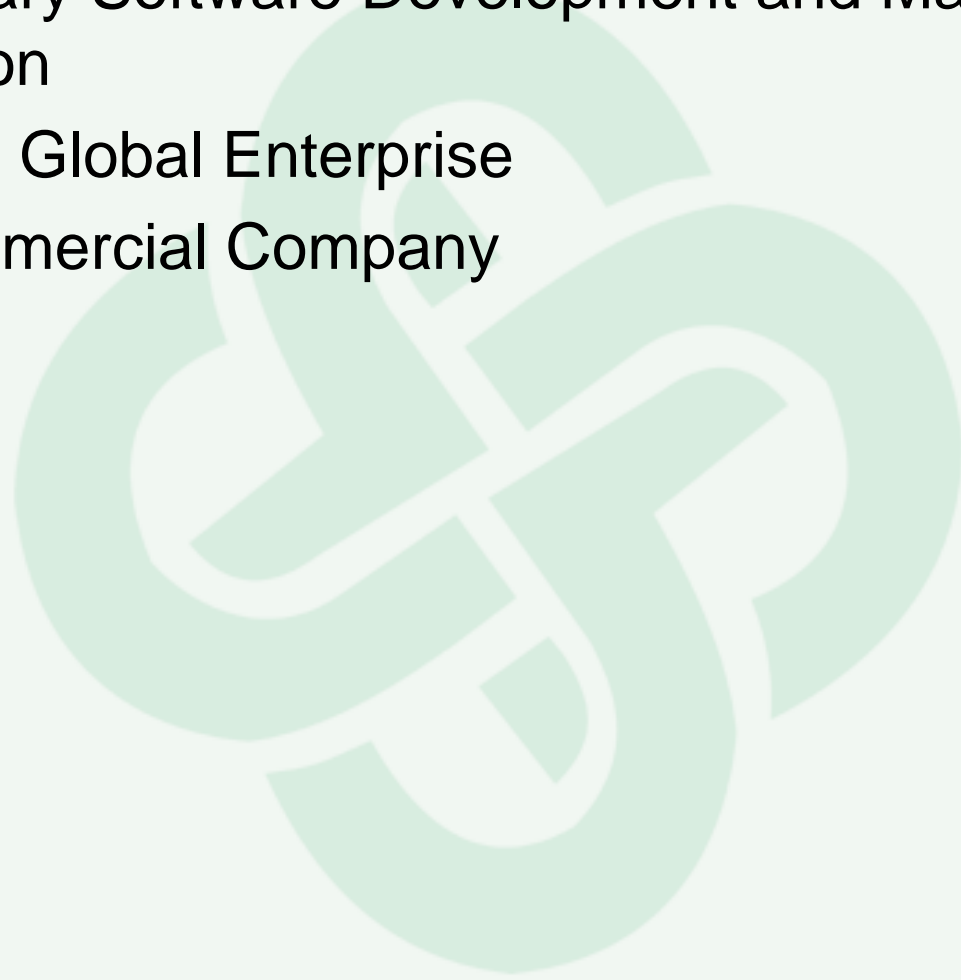
- 03 - Proj. management
- 06 - Team Leaders
- 07 - PPQA
- 08 - Testers / Reviewers
- 09 - Developers
- 10 - Impr. Projects
- Document Reviews
- Draft Findings
- Site Briefing

**Mappings using ISF**

**Companies' Processes**

# Some Current Case Studies

- Large Military Software Development and Maintenance Organization
- Very Large Global Enterprise
- Small Commercial Company





**BALDRIGE**

Source: ARDEC. Used with permission

**Organizational Excellence Benchmark**

**Baldrige Criteria**

**Organizational Excellence Measures**

ORG EXCELLENCE

MODELS, STANDARDS, QUALITY

CMMI-DEV – V1.2  
CMMI-SVC (Draft)  
CMMI-ACQ V1.2  
ISO 9001  
People CMM

**Domain Standards**

**Enterprise PIF**

**Project Specific**

ARDEC/  
Policy

**Enterprise OSSP**

OSSP

Tailoring

**Defined Project Processes**

Learning Model

APPLY

APPLY

**Lean Six Sigma**

**Statistical Process Control**

**Lean Six Sigma (Organizational Focus)**

**Lean Six Sigma (Project Level Focus)**

IMPROVEMENT TOOLS

*Benchmarks, Models, Standards, Toolsets*

*Resolve Organizational Improvement Redundancies & Design Solutions to Improvement Gaps*

*ID Project Redundancies & Design Solution to Project Process Gaps*

**Sources**

**Best Practice**

**Tailored Implementation**

- Transform the business by significantly improving the efficiency of model based process improvement activities.
- Build on established internal capability and new organization to restructure how process improvement is implemented across organization.
- Use standard processes, coupled with model based improvement and appraisal implementation, to better integrate center functions.
- Eliminate redundancies in our OSP without losing any of our current process capability.



Business Objective	Improvement Objective
Reduce the redundancies in the processes deployed across ARDEC	Increase efficiency and effectiveness of improvement program.
Reduce rework and quality issues	Reinforce training and develop new skills and capabilities Reduce the number of costly “false-starts”
Enable achievement of growth	Targeted at facilitating high value activities: <ul style="list-style-type: none"> <li>• key start-up decisions</li> <li>• appraisal program management</li> <li>• ongoing expert process improvement advice</li> </ul>
Consolidate audits and process compliance reporting	Implement standard processes. Increase portability of resources. Transfer lessons learned. Leverage best practices.

# Case Study 2 – Multi-Mapped PPQA Reviews (Small Commercial Firm)

1

Use **Model Wizard** to create or import a model that represents your Organizational Standard Model and/or the desired QA Reference Model.



2

Use **Appraisal Wizard (AW)** to setup Appraisal Wizard Audit Template(s) for each type of Audit you want to perform (e.g. setup unique record types, status values, and document types, etc.)

- Create Audit Question records to build audit checklist for set of audit checkpoints.
- Use the Record Documents tab and the document list to identify the expected objective evidence for each audit question.



3

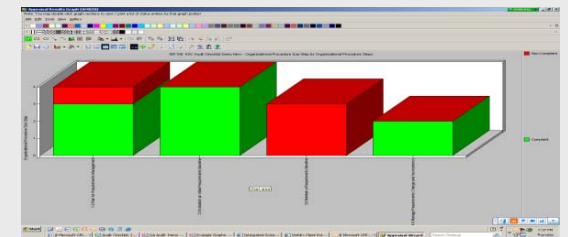
Use the **AW tool** during the audit to document the audit finding(s) (e.g. “Compliance, “Non-Compliance (N/C)”, “Information Needed” record types).

- Write up N/C Action Item records
- Determine compliance ratings



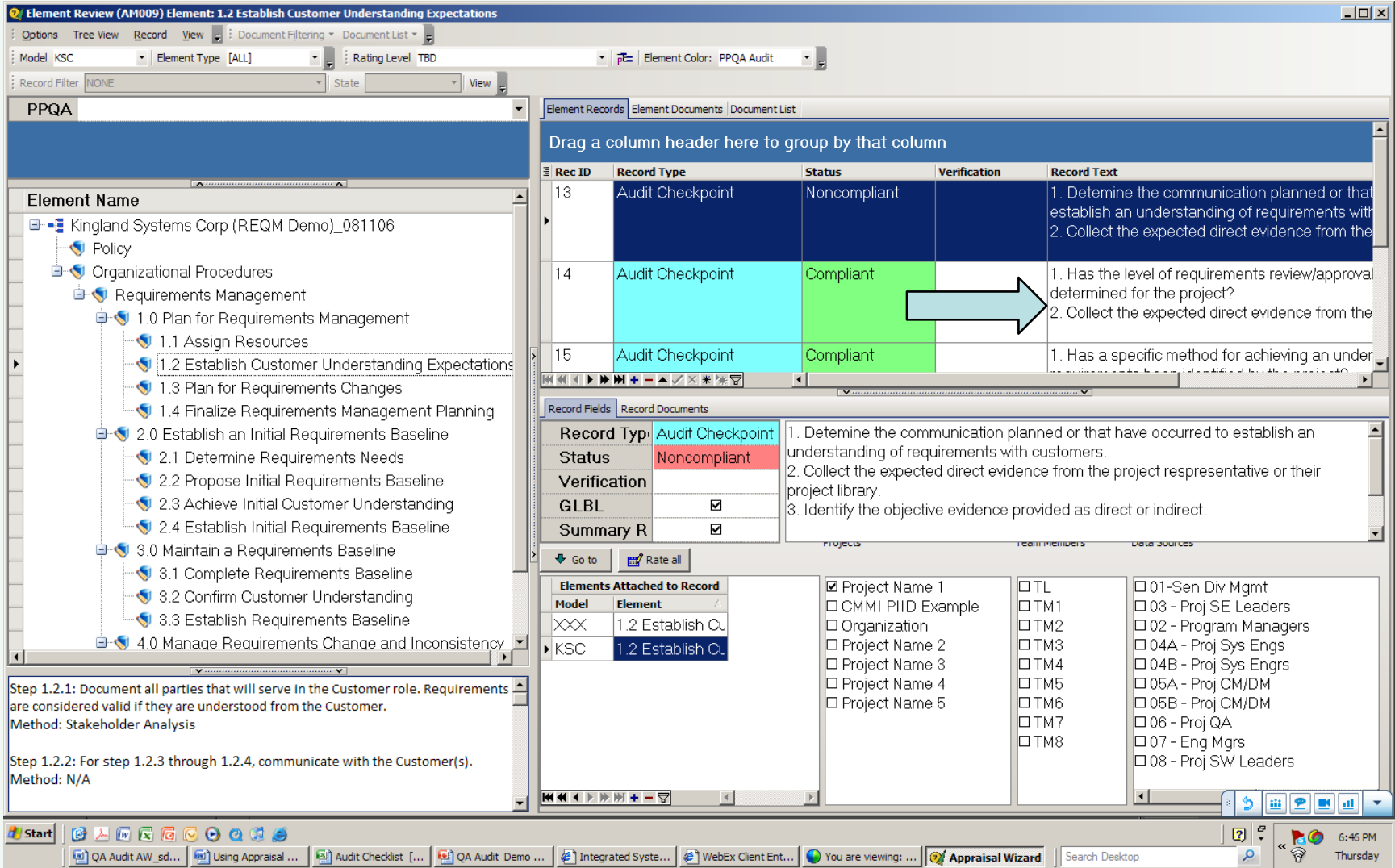
4

Use the **AW tool** to build various reports of the audit finding(s) (e.g. Reports of % compliant/% non-compliant findings; List N/C Action Items; etc.) to prepare for follow-on audits.



5

- Use **Model Mapper** to map QA Reference model to a standard or model (e.g. CMMI) for use in appraisals.
- Import new “Mapped Model” into AW to use audit results and organization's existing data to support Readiness Reviews and Appraisals.



The screenshot displays the 'Element Review' window for 'Element: 1.2 Establish Customer Understanding Expectations'. The interface includes a tree view on the left, a table of audit records in the center, and a detailed view of a specific record on the right.

**Tree View (Left):**

- Kingland Systems Corp (REQM Demo)\_081106
  - Policy
  - Organizational Procedures
    - Requirements Management
      - 1.0 Plan for Requirements Management
        - 1.1 Assign Resources
        - 1.2 Establish Customer Understanding Expectations
        - 1.3 Plan for Requirements Changes
        - 1.4 Finalize Requirements Management Planning
      - 2.0 Establish an Initial Requirements Baseline
        - 2.1 Determine Requirements Needs
        - 2.2 Propose Initial Requirements Baseline
        - 2.3 Achieve Initial Customer Understanding
        - 2.4 Establish Initial Requirements Baseline
      - 3.0 Maintain a Requirements Baseline
        - 3.1 Complete Requirements Baseline
        - 3.2 Confirm Customer Understanding
        - 3.3 Establish Requirements Baseline
      - 4.0 Manage Requirements Change and Inconsistency

**Audit Records Table (Center):**

Rec ID	Record Type	Status	Verification	Record Text
13	Audit Checkpoint	Noncompliant		1. Determine the communication planned or that establish an understanding of requirements with 2. Collect the expected direct evidence from the
14	Audit Checkpoint	Compliant		1. Has the level of requirements review/approval determined for the project? 2. Collect the expected direct evidence from the
15	Audit Checkpoint	Compliant		1. Has a specific method for achieving an under...

**Record Details (Right):**

**Record Type:** Audit Checkpoint  
**Status:** Noncompliant  
**Verification:**  
**GLBL:**   
**Summary R:**

**Record Text:**

- Determine the communication planned or that have occurred to establish an understanding of requirements with customers.
- Collect the expected direct evidence from the project representative or their project library.
- Identify the objective evidence provided as direct or indirect.

**Elements Attached to Record:**

Model	Element
XXX	1.2 Establish Cu
KSC	1.2 Establish Cu

**Checkboxes:**

- Project Name 1
- CMMI PIID Example
- Organization
- Project Name 2
- Project Name 3
- Project Name 4
- Project Name 5
- TL
- TM1
- TM2
- TM3
- TM4
- TM5
- TM6
- TM7
- TM8
- 01-Sen Div Mgmt
- 03 - Proj SE Leaders
- 02 - Program Managers
- 04A - Proj Sys Engrs
- 04B - Proj Sys Engrs
- 05A - Proj CM/DM
- 05B - Proj CM/DM
- 06 - Proj QA
- 07 - Eng Mgrs
- 08 - Proj SW Leaders

**Task Description (Bottom Left):**

Step 1.2.1: Document all parties that will serve in the Customer role. Requirements are considered valid if they are understood from the Customer.  
Method: Stakeholder Analysis

Step 1.2.2: For step 1.2.3 through 1.2.4, communicate with the Customer(s).  
Method: N/A

# Audit Results Tie to Mapped Standards/ Models

Element Review (AM009) Element: 12.3 Define customers requirements

Options Tree View Record View Document Filtering Document List

Model Enterprise Arch Element Type [ALL] Rating Level XYZ Corp at SEPG NA 2008 Element Color: None

Record Filter NONE State View

Element Name

- Enterprise Architecture - 20080309
  - Enterprise Architecture @2008, ISD Brasil
  - Organizational - On-going
  - Pre-Contract
  - 9.0 Manage Incidents and Requests
  - 10.0 Negotiate and Establish Contracts
  - 11.0 Design and Deployment Services
  - Contract
  - Engineering
    - 12.0 Elicit and Develop Requirements
      - 12.1 Elicit customers needs and constraints
      - 12.2 Develop preliminary strategy
      - 12.3 Define customers requirements
      - 12.4 Validate customers requirements
      - 12.5 Define product requirements
      - 12.6 Inspect requirements
    - 13.0 Design Solution
    - 14.0 Build and Integrate Solution
    - 15.0 Execute Tests
    - 16.0 Implement Solution

12.3 Define customers requirements

Element Records | Element Documents | Document List

Drag a column header here to group by that column

Rec ID	Record Type	Status	Verification	Record Text
26	DCE PIID	OE Examined	Yes	How do you identify and collect stakeholder needs, constraints, and interfaces for all phases of the
27	DCE PIID	OE Examined	Yes	How do you elicit stakeholder needs, expectations, constraints, and interfaces for all phases of the product's life cycle?
89	GA(New) PIID	OE Examined	Yes	How do you maintain bi-directional traceability among requirements and the project plans and work products?
204	GA(New) PIID	OE Examined	Yes	How do you identify and collect stakeholder needs, expectations, constraints, and interfaces for all phases of the product's life cycle?

Record Fields | Record Documents

Record Type: DCE PIID  
 Status: OE Examined  
 Verification: Yes  
 GLOBL:   
 Summary R:

Go to Rate all

Elements Attached to Record

Model	Element
ISO 900	7.2.1.b
ISO 900	7.2.1.c
ISO 900	7.2.1.d
CMMI 1	RD SP 1.1

DCE  
 GA (New)  
 ORG  
 PCS  
 SKD  
 RV  
 CEM  
 EPH  
 JCC  
 JFM  
 JLL  
 PDB  
 TRK  
 01 - Senior Management  
 02A - Prog/Dept Managers  
 02B - Prog/Dept Managers  
 03A - Proj Engr/Mid Mgr  
 03B - Proj Engr/Mid Mgr  
 04 - Supplier Mgmt

Start

2 Microsoft Offi... Audit Checklist [QA Audit Demo... Example Graphic... Integrated System... WebEx Client Ent... 2 Microsoft Offi... Appraisal Wizard

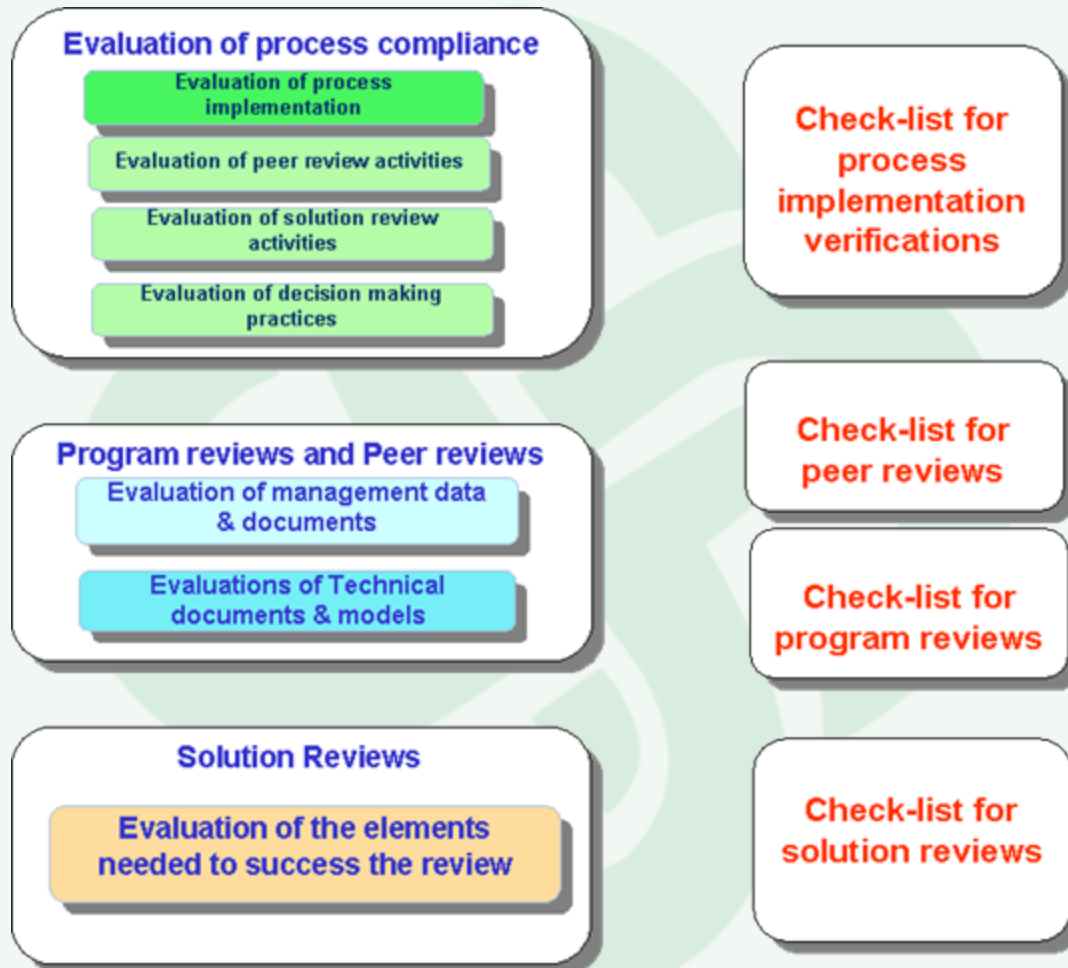
Search Desktop

7:48 PM Thursday

A series of reviews for different purposes

- Process compliance
- Program performance
- Technical quality

Integrating the around the ISF, using Appraisal Wizard, facilitates common reporting and comparisons



All types of reviews can be integrated into Appraisal Wizard

- Map reviews against ISF
- Cascade maps to relevant models
- Does not need to be a complete map

- ❖ In 2008, ISD partners with SEI PRIME project to bring ISF to a larger, long term multi-model development effort (work starting Q1 2009).
- ❖ ISF full scale pilot(s) with several base models and maps Q4 2008 through 2009.
- ❖ ISF V1.0 initial release with base models and “approved” maps 2009 (full AW tool and CAM method support)





- For Enterprise SPICE, see the following web site, under “initiatives/Enterprise SPICE
  - [www.spiceusergroup.org](http://www.spiceusergroup.org)
- For Sarah Sheard’s current contact info:
  - Principal, Third Millennium Systems LLC; [sheard@3MilSys.com](mailto:sheard@3MilSys.com)
- For ISD technical papers or AW download demo
  - <http://www.isd-inc.com/>
  - <http://members.isd-inc.com/resources.papers/>
  - <http://members.isd-inc.com/support.downloadArea/>



<p><b>Issues</b></p>	<ul style="list-style-type: none"> <li>❁ Distribution and/or importation/integration support for models (IP questions, permissions; not a technical issue)</li> <li>❁ Definition, coordination, acceptance, and maintenance of the model maps (more a political than technical issue)</li> </ul>	<p>Status: ISD had obtained rights to distribute CMMI models, eSCM, and ISO in Appraisal Wizard</p> <p>Status: ISF itself, although ISD registered, is expected to be in the public domain.</p>
<p><b>Directions</b></p>	<ul style="list-style-type: none"> <li>❁ Continue technical development and piloting with current interested parties (e.g. CMU ITSqc; global clients with current CMMI and ISO requirements; SSCI)</li> <li>❁ Continue to investigate and develop solutions to legal and political “issues” in collaboration with specific large influential clients, industry groups, and “stewards”</li> </ul>	<p>Status: Engaging 3 global clients regarding pilot appraisals and development tasks (adding client specific models of concern to ISF).</p> <p>Status: Announced collaboration in the SEI PRIME initiative.</p>
<p><b>Opportunities</b></p>	<ul style="list-style-type: none"> <li>❁ Direct sponsorship and collaboration</li> <li>❁ Collaboration invitations from Consortium / Industry Association / Government working groups</li> <li>❁ Participation in independent AW user group with subcommittees</li> <li>❁ Creation and/or participation in a new cross community consortium</li> </ul>	<p>Status: Joined the Enterprise SPICE initiative as part of Steering Group and Development team.</p> <p>Status: SSCI sponsored AW User Group meeting conducted November 2007.</p>

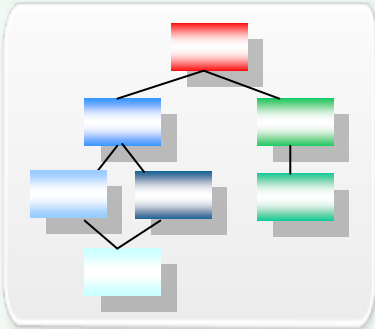


# A “System Approach” is Needed to Maximize Improvement Benefits

4 important system components:

- Process Model
- Appraisal Method
- Improvement Approach
- Automated Tooling

**ISF® – Meta-Model Framework**



**Comprehensive  
Appraisal Method  
(CAM<sup>sm</sup>) – Integrated  
Appraisal Method**



**Enterprise Process  
Improvement/Appraisal  
Life Cycle  
Implementation Model**

**Appraisal  
Wizard™ and  
Model Wizard™ –  
Operational Tool Suite**



# System Component Positioning

System Component	Positioning
The Integrated System Framework <sup>®</sup>	<ul style="list-style-type: none"> <li>✿ Is a conceptual vehicle to relate an organization's process architecture to multiple standard models; and</li> <li>✿ Helps to maintain and measure process compliance across multiple models simultaneously.</li> </ul>
The Comprehensive Appraisal Method (CAM <sup>SM</sup> )	<ul style="list-style-type: none"> <li>✿ Provides a integrated, tailorable, rigorous, extensible, model-“neutral” appraisal method for use across models</li> <li>✿ Is suitable for conducting Process Assurance, Project Progress Tracking, Enterprise Process Oversight, and Formal Benchmark compliance determinations/audits.</li> </ul>
Appraisal Wizard <sup>TM</sup> /Model Wizard <sup>TM</sup> V7	<ul style="list-style-type: none"> <li>✿ Provides robust support for operationalizing the conceptual framework, and</li> <li>✿ Enables conducting Process Assurance monitoring and Formal Benchmarking compliance activities in an effective, efficient, automated manner.</li> </ul>
Enterprise Process Improvement/Appraisal Life Cycle Implementation Model	<ul style="list-style-type: none"> <li>✿ Provides a framework for integrating often disparate internal process management activities [e.g., quality audits, project process status reporting, gap analyses, interim appraisals, benchmark assessments]</li> </ul>

# Closing Thoughts

<p>Process standardization, modeling, and improvement efforts are expanding.</p>	<ul style="list-style-type: none"> <li>❖ Process models and frameworks proliferation will continue.</li> <li>❖ Independent model/framework bodies/owners are not really interested in giving up their “space.”</li> <li>❖ The enterprise cost impacts are significant</li> <li>❖ Increased customer drivers for compliance is driving costs higher when lower is desired.</li> </ul>
<p>Domain and business area specific reference models and frameworks...</p>	<ul style="list-style-type: none"> <li>❖ Directly address process needs of specific sub-communities.</li> <li>❖ Do have positive impacts within their constituencies and niche areas.</li> <li>❖ But...Can cause sub-optimal investments in process, cause counter productive implementations, and produce large expense side inefficiencies</li> </ul>
<p>Mechanisms being developed and implemented by ISD accept and address reference model realities and synergies</p>	<ul style="list-style-type: none"> <li>❖ ISF<sup>®</sup>, appraisal life cycle model, Appraisal Wizard<sup>™</sup> and Model Wizard<sup>™</sup> V7, and CAM<sup>SM</sup>.</li> </ul>
<p>The models <i>can</i> be successfully integrated to improve enterprise performance.</p>	<ul style="list-style-type: none"> <li>❖ Improve both the quality and efficiency of enterprise process improvement (standardization, implementation, management oversight, appraisals)</li> </ul>

# Appraisal Benefits

- ❖ Make use of an integrated framework of best practices (ISF for Excellence)
- ❖ Make use of a tool suite that optimizes the full life cycle of an appraisal process
- ❖ Reduced number of appraisals and audits and a more effective and useful results
- ❖ These enterprise appraisals and audits can be used to:
  - ❖ Maintain maturity and certifications
  - ❖ Check progress against goals and plans
  - ❖ Appraise and identify potential systemic problems and issues
  - ❖ Benchmark internally and externally
  - ❖ Achieve resource optimization and cost reduction in appraisals and process improvement programs
  - ❖ Appraise and monitor enterprise suppliers capability in sourcing programs
  - ❖ Perform QA reviews against enterprise process architecture
  - ❖ Reuse of already performed appraisal and audit results around a more robust and complete set of best practices

# ISF for Excellence Benefits

## Operationalize an Enterprise Improvement Strategy

Provides an enterprise strategy to implement best practices from multiple models.

## Reduce compliance costs

Leverages the commonalities among models to reduce overall costs of compliance.

## Increase efficiency

Appraisals can be conducted using multiple models simultaneously.

## Provide a unified implementation approach

Provides management a common, unified “roadmap” to achieve high maturity, high performance goals.

