Integrated System Framework (ISF®) for Excellence

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ISF for Excellence Author
ISD Brasil

Presentation to the 7th Annual CMMI® Technology Conference
ISD - What We Do
Agenda

What is the current problem state?

What is the correlation between business needs and improvement frameworks?

What is the Integrated System Framework (ISF) and how will it help?

Next steps? Questions?
Opening Thoughts – “Frameworks Quagmire” – The quest for a “single model” is lost

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

ISD is one of the largest *Software Engineering Institute (SEI) Partners* and has been working together with the institute in researching, developing and delivering services (consulting, training and audits) related to several best practice models (SW-CMM, CMMI, People CMM) and appraisal methods (CBA-IPI, SCE, SCAMPI).

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

*SEI and ITSqc are entities of Carnegie Mellon University*

*SEI – Software Engineering Institute*

*ITSqc – IT Services Qualification Center*
Sponsor’s Appraisal Nightmare

Scenario – Organization X

- ISO9001 certified
- ISO20000 certified
- CMMI Level 3
- CobiT oriented

This organization will go through:

- 5 to 7 appraisals / audits a year
- 10 to 14 appraisals / audits in 2 years
- 25 to 35 appraisals / audits in 5 years

Imagine a company with 5 organizations like this one!
Organizational, Strategic, and Operational Challenges Magnify the Problem

- How is the organization defined
  - How to identify/communicate with stakeholders

- Multi-national and Multi-geographic
  - Norms, culture, and values
  - Languages, time zones, locations

- Operational/Time Constraints
  - Business pressure
  - Management pressure
  - Stockholder pressure

- Many affected groups
  - Large scope and risk adds complexity, which leads to longer deployment.
  - Outsourcing impacts more groups, adding more points of potential failure.
  - Different targeted groups
    - Adds to cultural and legacy complexity.
    - Exhibit varying levels of process maturity.

Some slide content adapted from Paul Byrnesâ’INCOSE 2000 presentation
## Improvement Program Risks Magnify the Problem

<table>
<thead>
<tr>
<th>Risk</th>
<th>Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insufficient senior management commitment</td>
<td>Caused by turnover or mergers</td>
</tr>
<tr>
<td></td>
<td>Based on disillusionment with results</td>
</tr>
<tr>
<td></td>
<td>Resulting from shifting investment priorities</td>
</tr>
<tr>
<td></td>
<td>Due to inadequate resource allocation</td>
</tr>
<tr>
<td>Middle management resistance</td>
<td>Overriding pressure for project performance; Incentives on delivery,</td>
</tr>
<tr>
<td></td>
<td>not quality</td>
</tr>
<tr>
<td></td>
<td>Doubt about seriousness of senior leadership</td>
</tr>
<tr>
<td>Inappropriate improvement goals</td>
<td>Level 5 in 1 year</td>
</tr>
<tr>
<td></td>
<td>75 business units to be assessed by year end</td>
</tr>
<tr>
<td>Unrealistic expectations</td>
<td>The great productivity gap related to managing change</td>
</tr>
<tr>
<td></td>
<td>The technology adoption curve and change management awareness</td>
</tr>
<tr>
<td></td>
<td>Lack of motivation for or continuous focus on process improvement</td>
</tr>
<tr>
<td>Crash implementations</td>
<td>No plans or long-term perspective, and lack of following through on</td>
</tr>
<tr>
<td></td>
<td>improvement efforts</td>
</tr>
<tr>
<td></td>
<td>Termination of activities before they are institutionalized</td>
</tr>
</tbody>
</table>

Slide from Paul Byrnes 2nd ISD Customer Conference presentation

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## Common Goals – Current Issues

<table>
<thead>
<tr>
<th>Common Goal</th>
<th>Sub-Goal</th>
<th>Current State, Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensure results</td>
<td>Contribute directly to business improvement</td>
<td>Benchmark events less so than interim events</td>
</tr>
<tr>
<td></td>
<td>Comparable across companies/organizations</td>
<td></td>
</tr>
<tr>
<td>Optimize value to sponsors</td>
<td>Support business objectives</td>
<td>Multiple requirements must be satisfied</td>
</tr>
<tr>
<td></td>
<td>Optimize cost and minimize disruption</td>
<td>Can be more costly without changes in approach</td>
</tr>
<tr>
<td>Ensure appraisal reliability</td>
<td>Create repeatable processes standardize</td>
<td>Too many improvement frameworks??</td>
</tr>
<tr>
<td></td>
<td>Make results predictable and differences explainable</td>
<td>Benchmarks (if any) not standard</td>
</tr>
<tr>
<td></td>
<td>Results independent of team composition</td>
<td>Objectivity an issue for both outsourcer and service provider</td>
</tr>
</tbody>
</table>

Slide adapted and updated from presentations by Mr. Byrnes while managing the appraisal project at the SEI.
Purpose and Objectives

Address a global, systemic enterprise problem of implementing, managing, maintaining, and complying with multiple process models, frameworks, and methods.

The Integrated System Framework® 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.
Overlap of Key Models

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
## Comparative Model Coverage (Example)

<table>
<thead>
<tr>
<th>Service Transfer</th>
<th>eSCM-SP</th>
<th>CobiT</th>
<th>ISO 9001</th>
<th>BS 15000</th>
<th>CMMI</th>
<th>COPC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge Management</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>○</td>
</tr>
<tr>
<td>People Management</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>○</td>
</tr>
<tr>
<td>Performance Management</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>○</td>
</tr>
<tr>
<td>Relationship Management</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>○</td>
</tr>
<tr>
<td>Technology Management</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>○</td>
</tr>
<tr>
<td>Threat Management</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>○</td>
</tr>
<tr>
<td>Contracting</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>○</td>
</tr>
<tr>
<td>Service Design &amp; Deployment</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Service Delivery</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>○</td>
</tr>
</tbody>
</table>

- ● = fully
- ○ = largely
- ○ = partially
- ○ = not covered

Slide courtesy of ITSqc at Carnegie Mellon University

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Agenda

- What is the current problem state?

- What is the correlation between business needs and improvement frameworks?

- What is the Integrated System Framework (ISF) and how will it help?

- Next steps? Questions?
## IT Governance Areas

<table>
<thead>
<tr>
<th>Area</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT strategic alignment and execution</td>
<td>know your business and align with it</td>
</tr>
<tr>
<td>IT Performance Management</td>
<td>manage your performance qualitative and quantitatively</td>
</tr>
<tr>
<td>Innovation Strategic Projects</td>
<td>select and manage the right projects and add value to the organization</td>
</tr>
<tr>
<td>Risks and Operations</td>
<td>manage your risks and operations and take preventive and corrective actions in incidents</td>
</tr>
<tr>
<td>Structured and Facts-Based Decision</td>
<td>take decisions appropriately (time and discipline)</td>
</tr>
<tr>
<td>Suppliers and Sourcing</td>
<td>use the best balance between insourcing and outsourcing, and manage your external and internal suppliers</td>
</tr>
<tr>
<td>Resource Management</td>
<td>minimize costs and make the best use of all resources</td>
</tr>
<tr>
<td>Management Process and Systemic View</td>
<td>continuously improve your value chain and grow!</td>
</tr>
<tr>
<td>People Management</td>
<td>cultivate, manage and retain your talents</td>
</tr>
</tbody>
</table>
IT Governance Architecture

World of Best Practices

**IT Governance themes**

- **IT Governance**
  - IT Structure and Architecture
    - Systemic View – Processes
      - Human Capital “People”

- **IT Governance themes**
  - IT strategic alignment and execution: know your business and align with it
  - IT Performance Management: manage your performance qualitative and quantitatively
  - 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
  - Suppliers and Sourcing: use the best balance between insourcing and outsourcing, manage your external and internal suppliers
  - Resource Management: have the lower possible cost and make the best use of all resources
  - Management Process and Systemic View: continuously improve your value chain and grow!
  - People Management: cultivate, manage and retain your talents

**World of Best Practices**

- COBIT
- ISO9001
- eSCM
- ITIL
- CMMI
- Baldrige
IT Governance Themes

- **IT strategic alignment and execution** — know your business and align with it
- **IT Performance Management** — manage your performance qualitative and quantitatively
- **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, manage your external and internal suppliers
- **Resource Management** — have the lower possible cost and make the best use of all resources
- **Management Process and Systemic View** — continuously improve your value chain and grow!
- **People Management** — cultivate, manage and retain your talents

**ISF for Excellence**

**World of Best Practices**

- COBIT
- eSCM
- ITIL
- Baldrige
- ISO9001
- CMMI
Need to Put the Pieces Together!!

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

ISF!
Agenda

- What is the current problem state?
- What is the correlation between business needs and improvement frameworks?
- What is the Integrated System Framework (ISF) and how will it help?
- Next steps? Questions?
Challenge - How Do We Integrate All the Models?

Most of the models, frameworks, and best practices share a common set of principles, process areas, and practices

- Senior Management Commitment
- Leadership
- Customer Focus
- People Focus
- Systemic View Focus
- Management by Process
- Decisions Based on Facts
- Learning
- “Win-Win” Partnership
for Excellence – Relationship View

ORGANIZATIONAL EXCELLENCE & QUALITY
- Baldrige
- ISO9001:2000

CONTROL & GOVERNANCE
- CobiT

PEOPLE
- People CMM

SERVICES & RISKS
- ITIL (ISO20000)

SOLUTIONS & VALUE
- CMMI – DEV

PROCESS IMPROVEMENT
- Six Sigma/IDEAL^sm
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.
for Excellence – Systemic View

The green titles are called Classes

The boxes are called Categories

Market & Competitors

Leadership, Culture, Strategic Alignment

Human Capital

Infrastructure & Technology

Measurement, Innovation and Improvement

Market

Organizational

Customers (pre-contract)

P&S Execution

Support

Management

P&S Sustainment

Results (performance)

Customers (post-contract)

Suppliers
Critical Process Performance (CPPs) streams are similar to the concept of process 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.
HOW TO EVALUATE YOUR PERFORMANCE AGAINST THE ISF?
ISF for Excellence – Automated Tooling

(Model Wizard ™)

Human Capital
- Staffing
- Competency Management
- Training
- Career Management
- Compensation
- Performance Management
- Team Management
- Work Environment
- Mentoring and Coaching

Market & Competitors
- Leadership, Culture & Business Alignment
- Human Capital
- Staffing
- Compensation
- Career Development
- Team Development
- Mentoring & Coaching
- People Performance Management
- Infrastructure & Technology
- Measurement, Innovation and Continuous Improvement
- Relationship & Stakeholders
  - Customer Relationship
  - Supplier Relationship
  - Support Relationship
- Products & Services
  - Engineering
  - Support
  - Project Management

Costumers (pre-contract)
- P&S Execution
  - Support
  - Management
- Suppliers
- Results (performance)

Costumers (post-contract)
- P&S Sustentation
- Support
- Management
- Suppliers
- Results (performance)

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for Excellence – Automated Tooling (Model Mapper™)
for Excellence – Automated Tooling (Appraisal Wizard™)
Agenda

• What is the current problem state?

• What is the correlation between business needs and improvement frameworks?

• What is the Integrated System Framework (ISF) and how will it help?

• Next steps? Questions?
4 important system components:
- Process Model
- Appraisal Method
- Improvement Approach
- Automated Tooling

ISF® í Meta-Model Framework

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

Enterprise Process Improvement/Appraisal Life Cycle Implementation Model

Appraisal Wizard™ and Model Wizard™ í Operational Tool Suite
<table>
<thead>
<tr>
<th>System Component</th>
<th>Positioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Integrated System Framework®</td>
<td>✍ Is a conceptual vehicle to relate an organization’s process architecture to multiple standard models; and ✍ Helps to maintain and measure process compliance across multiple models simultaneously.</td>
</tr>
<tr>
<td>Appraisal Wizard™/Model Wizard™ V7</td>
<td>✍ Provides robust support for operationalizing the conceptual framework, and ✍ Enables conducting Process Assurance monitoring and Formal Benchmarking compliance activities in an effective, efficient, automated manner.</td>
</tr>
<tr>
<td>Enterprise Process Improvement/Appraisal Life Cycle Implementation Model</td>
<td>✍ 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]</td>
</tr>
</tbody>
</table>
Near Term Plans

- ISF has been in joint development between ISD Brasil and PUC (a Brazilian University) since mid-2006.

- ISF V0.5 full scale pilot(s) with several base models and maps Q2/3 2007 (partial to full AW tool and CAM method support)

- ISF V1.0 initial release with more base models and "approved" maps Q4 2007/Q1 2008 (full AW tool and CAM method support)
## Issues
- Distribution and/or importation/integration support for models (IP questions, permissions; not a technical issue)
- Definition, coordination, acceptance, and maintenance of the model maps (more a political than technical issue)

### Status
- ISD had obtained rights to distribute CMMI models, eSCM, and ISO in Appraisal Wizard
- ISF itself, although ISD registered, is expected to be in the public domain.

## Directions
- Continue technical development and piloting with current interested parties (e.g. CMU ITSqc; global clients with current CMMI and ISO requirements; SSCI)
- Continue to investigate and develop solutions to legal and political issues in collaboration with specific large influential clients, industry groups, and stewards

### Status
- Engaged 3 global clients already regarding pilot appraisals and development tasks (adding client specific models of concern to ISF).
- Discussing collaboration in an SEI SPRC (Europe) initiative.

## Opportunities
- Direct sponsorship and collaboration
- Collaboration invitations from Consortium / Industry Association / Government working groups
- Participation in independent AW user group with subcommittees
- Creation and/or participation in a new cross community consortium

### Status
- Joined the new Enterprise SPICE initiative as part of Steering Group and Development team.
## Closing Thoughts

| Process standardization, modeling, and improvement efforts are expanding. | - Process models and frameworks proliferation will continue.  
- Independent model/framework bodies/owners are not really interested in giving up their space.  
- The enterprise cost impacts are significant  
- Increased customer drivers for compliance is driving costs higher when lower is desired. |
| --- | --- |
| Domain and business area specific reference models and frameworks | - Directly address process needs of specific sub-communities.  
- Do have positive impacts within their constituencies and niche areas.  
- But can cause sub-optimal investments in process, cause counter productive implementations, and produce large expense side inefficiencies |
| Mechanisms being developed and implemented by ISD accept and address reference model realities and synergies | - ISF®, appraisal life cycle model, Appraisal Wizard® and Model Wizard® V7, and CAM℠. |
| The models can be successfully integrated to improve enterprise performance. | - Improve both the quality and efficiency of enterprise process improvement (standardization, implementation, management oversight, appraisals). |
## Benefits

<table>
<thead>
<tr>
<th><strong>Operationalize an Enterprise Improvement Strategy</strong></th>
<th>Provides an enterprise strategy to implement best practices from multiple models.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reduce compliance costs</strong></td>
<td>Leverages the commonalities among models to reduce overall costs of compliance.</td>
</tr>
<tr>
<td><strong>Increase efficiency</strong></td>
<td>Appraisals can be conducted using multiple models simultaneously.</td>
</tr>
<tr>
<td><strong>Provide a unified implementation approach</strong></td>
<td>Provides management a common, unified roadmap to achieve high maturity, high performance goals.</td>
</tr>
</tbody>
</table>
Back Up Material

Å For Enterprise SPICE, see the following web site, under initiatives/Enterprise SPICE
  ï www.spiceusergroup.org

Å For Sarah Sheard’s current contact info:
  ï Principal, Third Millennium Systems LLC; sheard@3MilSys.com

Å For ISD technical papers or AW download demo
  ï http://www.isd-inc.com/
  ï http://members.isd-inc.com/resources.papers/
  ï http://members.isd-inc.com/support.downloadArea/
Leadership, Alignment e Culture:
- Social Responsibility and Ethics
- Leadership
- Governance
- Strategic Planning
- Strategic Execution
- Culture of Excellence
- Decision and Analysis Resolution
- Audits
Human Capital
- Staffing
- Training
- Career Management
- Compensation
- Performance Management
- Team Management
- Work Environment
- Mentoring and Coaching
Integrated System Framework for Excellence – CPPs Examples by Category

- Sourcing Strategy
- Opportunity Analysis
- Sourcing Planning
- Supplier Selection
- Supplier Management
- Quantitative Supplier Management
- Transition
Organizational Architecture
IT Governance Architecture
Some important definitions

<table>
<thead>
<tr>
<th>PURPOSE OF AN ORGANIZATION</th>
<th>Maximize shareholders wealth</th>
</tr>
</thead>
<tbody>
<tr>
<td>CORPORATIVE GOVERNANCE</td>
<td>Control mechanisms and incentives so that the agents of a company may have an adequate behavior aligned with the shareholders needs</td>
</tr>
</tbody>
</table>
| INFORMATION TECHNOLOGY GOVERNANCE | 1) Decision rights and responsibilities framework which encourage IT adequate behavior  
2) Consists of leadership, structure and processes to make sure that IT will add value to business and organizations’ strategies in a controlled (risks) and effective (ROI) way |
| SUMMARY                    | IT will help the organization to maximize shareholders value, having, for such a purpose, adequate behavior |
Excellence – Maturity/Capability Levels

Since a majority of frameworks include a notion of "maturity" or "capability," the ISF includes this concept.
Excellence – Maturity and Performance

Level 1: Initial

Level 2: Disciplined Best Practices

Level 3: Defined and Integrated

Level 4: Management by Facts

Level 5: Innovation and Improvement

Low Performance

High Performance

Low Maturity/Capability

High Maturity/Capability

Growing Maturity and Capability
‘Frameworks Quagmire’ Revisited

From: The Frameworks Quagmire, A Brief Look, by Sarah Sheard of SPC, now SSCI
Business Model Integration: EDS View

Source: EDS. Used with permission
MI®-Based “System Architecture”

**Process Management**
- Organization
- Process Focus (OPF)
- Organization Process Definition (OPD)
- Training Program (OT)
- Organization Process Performance (OPP)
- Organization Innovation and Deployment (OID)

**Project and Supplier Management**
- Project Planning (PP) and Project Monitoring and Control (PMC)
- Supplier Agreement Management (SAM)
- Integrated Project Management (IPM) and Risk Management (RSKM)
- Quantitative Project Management (QPM)

**Pre-Development Processes**
- Concept Exploration
- System Allocation (RD, TS)
- Proposal Management
- Project Initiation (PP)

**Product Mgt.**
- Requirements Mgt.
- and Development (RD)
- Product Engineering (TS, PI)
- Verification, Validation, (VER, VAL)

**Post-Development Processes**
- Tailoring
- Environment
- Conversion
- Installation
- Operation
- Support
- Maintenance
- Retirement

**Integral Support Processes**
- Quality Assurance (PPQA), Config. Management (CM), Measurement and Analysis (MA), Decision Analysis and Resolution (DAR), Causal Analysis and Resolution (CAR)