Early Support Engagement
Interactive Intelligence

Presented to
The Faculty of the Systems Engineering Program

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Introduction

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- Support Services & PSO
- Problem Definition and Statement
- Top-Level Requirements
- Alternative Solutions
- Stakeholders
- System Boundaries
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• Current System
• Desired System
• Risk Management
• System Verification and Validation
• Lean Enablers
• Conclusion
About Interactive Intelligence

• Provides global unified communications and business process automation contact-center software and services

• Global leader in Internet protocol–based telephony networks

• The company started in 1994 with a vision to provide an all-in-one software platform to bring employees, businesses, and their customers together faster and more reliably than similar hardware systems

• Offers various platforms:
  • Cloud-based service
  • On-site Servers
  • Managed Services accounts
Support Services

• Customers' IT teams get full-time technical support, along with a direct and rapid connection to certified Interactive Intelligence support engineers

• Provides services such as:
  • Software upgrades
  • Updates and fixes via secured portal
  • Access to troubleshooting, triage, tips and tricks, third-party product solutions via web portal

• Ticketing system

• Regional Management for transition meeting
Professional Services Organization

Professional Services (PSO) is the project team customers hire to deploy Interactive Intelligence solutions. The process begins by assigning a project engagement manager, who designs the statement of work. Once the statement of work is signed, a resource manager begins allocating the project team based on the skills required.
Problem Definition

• Reported a 67 percent compound annual growth rate (2010-2013) of its Communications as a Service offering, topping 20,000 seats. (http://investors.inin.com/releasedetail.cfm?ReleaseID=849068)

• More than 5,000 customers worldwide

• PSO and sales engineering department are overwhelmed with new projects that are contracted every week

• Once the project is complete, customers relay all questions, issues, and new feature requests to the support organization
Problem Definition cont..

- The current project methodology PSO follows consists of seven steps: **Initiation** and Planning, **Requirements and Design**, **Consultation**, **Application Development**, **System Development and Deployment**, and **Closing**.

- The next slide shows at which phase Support are involved
Problem Definition Cont..

Interactive Intelligence Professional Services
Project Methodology Flow Chart

Engineering Track:
- Transition to Support

Infrastructure Track:
- Infrastructure Kick-Off → Infrastructure Workshop → Infrastructure Setup & Base Build
Problem Definition cont..

• The transition to support occurs at the project’s closing stage
  • “is to execute a full knowledge transfer from the PSO organization to the Support organization. Also to simultaneously introduce the customer to the appropriate Support team and transition them from working with PSO to working with Support”

• This means the technical team that handles all future issues is not introduced to the customer until the project is nearly complete

• Therefore, the customer is expected to build a new relationship with a new team to report problems
Problem Definition and impact

- Communication gap between support and the customer
  - Example

- Every new customer PSO deploys must comply with support’s recommendations and best practices; however, support is not involved until the project’s transition phase. Consequently, this delayed involvement results in severe costs
  - Example
Problem Statement

- Improving internal processes and team coordination and communication will minimize errors in implementation and late project delivery, which would significantly increase success. In addition, support can provide suggestions, tips, and recommendations to ensure a stable and robust project delivery to customers.
Top-Level Requirements

• The system must increase customer satisfaction in newly implemented solutions.
• The system must reduce the risk of customers running into unsupported configurations by 90%.
• The system shall increase Interactive Intelligence’s economic vitality and competitiveness.
• The system shall reduce the need for PSO’s extended work hours.
• The system shall increase the support process quality.
• The system shall eliminate wasteful processes.
• The system shall enhance communication and collaboration between internal teams at Interactive Intelligence.
• The system shall improve overall employees’ satisfaction and reduce frustration.
Alternative Solutions

- Assign a Support Resource with PSO During Projects
- Train PSO Engineers on Support Processes
- Assign a Service Delivery Manager
- Doing Nothing
Stakeholders

- Customers
- Sales Engineering
- PSO engineering
- PSO management
- Support
### Stakeholder’s Relationship

<table>
<thead>
<tr>
<th>Stakeholders</th>
<th>Impact on</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Finance</td>
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<tr>
<td></td>
<td>Planning</td>
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<td></td>
<td>R &amp; D</td>
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<tr>
<td></td>
<td>Coordination</td>
</tr>
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<td></td>
<td>System Development &amp; Deployment</td>
</tr>
<tr>
<td></td>
<td>Closing</td>
</tr>
<tr>
<td>Customer</td>
<td>✓</td>
</tr>
<tr>
<td>Sales Engineering</td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td>PSO Engineering</td>
<td>✓ ✓ ✓ ✓ ✓</td>
</tr>
<tr>
<td>PSO Management</td>
<td>✓</td>
</tr>
<tr>
<td>Support</td>
<td>✓ ✓ ✓ ✓ ✓</td>
</tr>
</tbody>
</table>
System Boundaries
Key System Functions
Current System

• The current system allows support to be engaged in the project only in two major situations:
  1. First, when a component fails that is considered a critical project item. This failure has to have a great impact that would delay the project’s current phase for support to be engaged urgently.
  2. The second situation that requires support’s involvement is when the project is completely transitioned for support services.
Desired System

• System Architecture
• Requirement and Design Phase
• System Development and Deployment Phase
• Closing Phase
System Architecture (OV-2)
Requirement and Design Phase

• Requirement and Design phase methodology consists of seven stages:
  a) The discovery workshop
  b) Call flow design
  c) Functional requirements specifications
  d) Project plan
  e) Test plan
  f) Training plan
  g) Go-live plan

• Which two stages support needs to be involved with?
A. The discovery workshop

- Determines the customer’s functional and business requirements.
- Customer will know minimum technical requirements for Interactive Intelligence’s system to function properly.
- The PSO controls which approach to utilize for a technical solution that meets those requirements.
- Unfortunately, some of those approaches could create scenarios that support has not approved.
  - Example
A. The discovery workshop cont..

• To avoid similar situations
  • PSO should contact the designated support regional management team and present the requirement draft for approval
  • Support has enough knowledge and data to make quick decisions
  • Support has direct access to the main Interactive Intelligence developers should the solution require further analysis.
  • Eventually, a more educated decision will be made to approve the customer’s functional and business requirements.
B. The Functional Requirements Specifications

• According to the PSO policy page, the functional requirements specifications document is the most important document created during a project.

• Contain every requirement for every product/deliverable.

• Contain the functional design that corresponds to each requirement (not all requirements necessitate a functional design)

• Therefore,
  • PSO should consult support to insure all specifications are ready for deployment without violating support’s best practices
System Development and Deployment Phase

- This phase of the project is the execution phase
- All portions of this phase are dependent upon the completion of a previous stage
- This phase is divided into six stages:
  - Infrastructure Setup
  - Base Build
  - Configuration
  - System Testing
  - User Acceptance Testing
  - Training
  - Go Live
- The desired system will make recommendations to some but not all stages
The Infrastructure Setup

- Gather information about the customer’s native server architecture and local requirements that are specific to the customer’s environment

- PSO needs to gather information and work with the customer to complete several worksheets, which are given to the customer to complete.
  - Provide information on the broader topics of server configuration, local account information, and remote access policies.

- The above tasks are the daily job of one of support’s skill teams: the Server team
The Infrastructure Setup cont..

- To avoid risk when installing Interactive Intelligence products in new environments
  - The PSO infrastructure team should engage support’s server team to transfer knowledge.
  - Open communication between teams increases the chances of finding the best approach to deal with obstacles occurring in any new environment.
  - As a result, it should reduce the risk of delayed implementation and customer dissatisfaction.
Base Build

- According to PSO policy, customers are required to install the latest service update for Interactive Intelligence products.

- Service updates are released approximately every 2 to 3 months.

- Depending on how soon after the release a particular base build is in process, there might not be enough information to refer to in the event of failures.

Therefore,

- Open communication with support’s installation team will ensure the PSO base build processes are up to date with the latest information available for that service updates.
Integration Testing

• The goal of integration testing is to provide an opportunity for the customer to put the system into a fully simulated business environment.

• It connects the customer’s various other business software suites using the installed integrations eliminate concerns before go live or sign off.

• Therefore,
  • Allocating a support will help avoid major delays such as when calls fail after integrating the new system with the customer’s existing environment.
  • Support can compare this configuration with any of the existing 5,000 customers and determine whether the same problems have occurred
  • Troubleshooting time is reduced and the issue can be resolved faster.
Closing Phase

• The closing phase in the current PSO project methodology consists of four different facets:
  A. System specifications
  B. Transition to support
  C. Project acceptance
  D. Project review.
Transition to Support - Advantages

• Allows the support team to review all customer’s documentation related to the project with PSO prior the transition meeting.

• Support can decide when to conduct the transition meeting
Transition to Support - Disadvantages

• Usually the first time support learns anything about the customer

• If a critical issue occurs at the customer site, usually this new customer is not comfortable working with support. Therefore, they tend to contact the PSO team for assistance

• Support interacts with customers using a time consuming ticketing system that requires training

• Customers who experience problems immediately after the transition meeting are usually unable to use that system

• Increase frustration levels
Transition to Support – Desired System

• Support gets involved early in the project

• Training for the new ticketing system occurs before the closing phase

• Allocating support resources or introducing the regional management team early in the project will insure an easy transition

• Customers will be more comfortable working with someone who is knowledgeable in their system
Risk Management

• The current culture and relationships between teams are not flexible enough to accept even such a minor change as early support engagement.
  • Example

• To prevent the desired system from being rejected because of interactions between teams and/or high risk, we must consider the potential risks and find the best ways to mitigate them.
## Risk Assessment

<table>
<thead>
<tr>
<th>Risk item</th>
<th>Likelihood</th>
<th>Impact</th>
<th>Effect on Project</th>
<th>Risk Reduction Actions</th>
<th>If it happened</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical resources from ININ Support not available</td>
<td>Low</td>
<td>High</td>
<td>Project delay and may cause design changes</td>
<td>Plan ahead to allocate a resource</td>
<td>Triggers</td>
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<td></td>
<td>Project Budget/Project Manager (PM)</td>
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<tr>
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<td></td>
<td>Support Regional Management Actions</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rearrange the project phase’s priority</td>
</tr>
<tr>
<td>Client resources not available to provide necessary details for all</td>
<td>Low</td>
<td>Medium</td>
<td>Project may be delayed</td>
<td>Accept</td>
<td>Triggers</td>
</tr>
<tr>
<td>requirements</td>
<td></td>
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<td></td>
<td>PSO Project Manager Actions</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td>Meet with the customer’s management</td>
</tr>
<tr>
<td>Over engaging Support</td>
<td>High</td>
<td>Medium</td>
<td>Affecting credibility of PSO engineering</td>
<td>Set limits for support engagement on each phase</td>
<td>Triggers</td>
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<td></td>
<td></td>
<td></td>
<td>Project Manager Actions</td>
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<td></td>
<td></td>
<td></td>
<td>Withdraw support, transfer knowledge to PSO</td>
</tr>
<tr>
<td>Customer identifying the correct project team</td>
<td>Low</td>
<td>Medium</td>
<td>Unable to request tasks to PSO team</td>
<td>Keep communication between Support and customer at minimum</td>
<td>Triggers</td>
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<td></td>
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<td></td>
<td>Project Manager Actions</td>
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<td>Hire new staff</td>
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Risk Matrix definition

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</tbody>
</table>

Consequence of Occurrence
System Verification and Validation

1. The system must increase customer’s satisfaction in newly implemented solutions.
   - This requirement will be verified using the analysis method.
   - Using Customer satisfaction survey

2. The system must reduce the risk of customers running into unsupported configurations by 90%.
   - This requirement will be verified through analysis.
   - Support collects statistics on the number of escalations customers raise per month.

3. The system shall increase Interactive Intelligence’s economic vitality and competitiveness.
   - This requirement will be verified through analysis.
   - The best way to measure this is to analyze PSO projects’ revenue.
4. The system shall reduce the need for PSO's extended work hours
   - This requirement will be verified through analysis
   - Each PSO engineer is required to submit a report of how many hours were utilized during a project

5. The system shall increase the process quality of how support is engaged.
   - This requirement will be verified through demonstration
   - The current process for how PSO involves support in project issues is poor
   - Observing and recording how support and PSO collaborate ensures the process is of high quality.

6. The system shall eliminate wasteful tasks.
   - This requirement will be verified through demonstration
   - PSO engineers' waste time troubleshooting issues
   - The system shall analyze this data to make sure hours are not wasted in tasks with which support can assist
   - Support can provide training session to insure that PSO engineers are familiar with all the tools used to obtain data on existing or past issues
System Verification and Validation cont..

7. The system shall enhance communication and collaboration between internal teams at Interactive Intelligence.
   - This requirement will be verified through analysis
   - The faster PSO-related tickets are resolved, the faster more accurate data can be collected on communication between teams

8. The system shall improve overall employees’ satisfaction and reduce frustration.
   - This requirement will be verified through analysis
   - The majority of PSO engineers fill out the employee satisfaction survey
   - Analyzing this report should provide data on how this requirement can be fulfilled.
Lean Enablers

• The two enablers that influenced the early support engagement idea are Lean Principle
  • Lean Principle 3, Enabler: 5. Use efficient and effective communication and coordination
  • Lean Principle 5, Enabler: 7. Promote complementary continuous improvement methods to draw best energy and creativity from all employees.
## Lean Enablers cont...

<table>
<thead>
<tr>
<th>Subenabler</th>
<th>4.7.2—LEFSE: 3.5.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subenabler(s) text</td>
<td>Maximize coordination of effort and flow.</td>
</tr>
<tr>
<td>Explanation</td>
<td>For the flow of work to proceed robustly, predictably, right the first time, the effort of each task in the flow should be predictable, well planned, and coordinated with other tasks and with the overall flow. This requires common planning between IPTs, functions, and major suppliers.</td>
</tr>
<tr>
<td>Used at work?</td>
<td>No, sometimes the subenablers don’t have sufficient time to implement maximum coordination.</td>
</tr>
</tbody>
</table>
| Benefit to stakeholders | - Insure value added activity and predictable flow.  
- Value stream can be easily understood.  
- Risks can be easily identified. |
| If not used, Why? | Coordination is been done but not to the maximum effort |
| Planning to implement? | Yes, this will be essential for the quality of work provided as our business grow |
| Comment | A lot of time is wasted on coordinating nonvalue-added tasks. |
# State Vs Future Map

<table>
<thead>
<tr>
<th>Support engagement should happen shortly BEFORE cutover and go-live</th>
<th>I) Internal Project and SharePoint Review Call</th>
<th>II) External Customer and Support Introduction Call</th>
<th>III) Internal Outstanding Item Review Call</th>
<th>IV) External Transition to Support Call</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support engagement should happen early either at Planning or Consultation phase</td>
<td>I) Internal Project and SharePoint Review Call</td>
<td>II) External Customer and Support Introduction Call</td>
<td>III) Internal Outstanding Item Review Call</td>
<td>IV) External Transition to Support Call</td>
</tr>
</tbody>
</table>
Conclusion

• PSO is flooded with new projects

• Frequently, the team members experience product issues that might require support’s assistance.

• Because of a lack of clear PSO procedure on engaging support, these issues take longer to resolve. As a result, customers react negatively to the longer resolution time.

• The main argument raised is that support must be involved earlier than the PSO projects’ closing phase.

• Another layer of support to any PSO project and help reduce any waste on tasks requiring support.
Conclusion cont..

- This was accomplished by
  - identifying key top-level requirements
  - System Boundaries
  - Key Stakeholders
  - Definition of Current Vs. desired system

- The desired system included
  - System architecture
  - The specific changes to the current PSO project methodology

- Risk definition

- Lean enablers that influenced the project.
Q&A