Alternative Strategies and RFPs

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Lecture 5

Topics for Today

- Analysis of Alternative Strategies
  - What are alternative strategies?
  - Discovering alternative strategies
  - Analyzing alternative strategies and choosing
- Request for Proposals
  - What is an RFP? Who is its Target?
  - Contents of the RFP
- Source: PS98 3.2-3.3

What are Alternative Strategies?

- **Alternative strategies** are options which the organization may take to address its needs.
  - Should be general, not technologically specific
  - Should help guide decisions
- Prepare a list of potential solution paths and consider them fully.
- When the options have been explored and discussed, a preferred strategy or strategies is chosen.
  - Will guide the development of the RFP
- Note: Some organizations may skip this step if they have already decided what strategy to take based on the preliminary design

Example Alternatives

- Example 1: The existing system worked on an old proprietary server which is no longer supported by the supplier. The new system must maintain the old system's interface and work on new hardware.
- Example 2: When building a web portal system, the organization is debating whether to host it in house and supply its own infrastructure or to have it hosted by a server farm and do remote maintenance.

Thinking about Alternatives

- Alternatives at this point are coarse options
  - Organization or technology may change
  - Situations may change – don't rule it out unless you are sure
- One option is to cancel the project
- Doing more work now will make the RFP clearer
  - You will know what you want
  - The less clear things are now, the more work you will have later

Example: Buy/Develop

Buying off the shelf and adapting
- For a standard transaction processing system (TPS)
- There will be many options for purchasing off the shelf.
- Likely that the organization's needs are not too different from other companies' needs.
- Examine off-the-shelf products and do a cost benefit analysis to see if it's worth buying one instead of developing.

In house development
- If the company has an in house development team, it can construct the new system.
- The in house team should be consulted to make sure that they have the resources and man-power to do the work.
- Find out the relative costs and benefits of using them over outsourcing. There are complex decisions to be made here.
- Discuss with the management about whether they are interested in reducing the amount of work being done by the in house team or increasing it.
- If the organization does not have an in house team, this may be an option if the company is interested in starting their own development department.
- For proprietary or secrecy issues, this may be the only option.

Outsourced development
- Outsource the development to a third party development house.
- May be existing agreements between the company and the development house which guide the project's eventual development.
- The development house should have experience with the kinds of system sought.
- The company should get a good idea of the time frame, costs, working habits, and chances of success.
- If there are multiple development house options, they should be evaluated using those metrics.

End user development
- In odd cases the users may do the development themselves.
- This may happen if there is no budget for the new system and it must be put together piecemeal.
- The users must be skilled enough to do the work
- Best for incremental or simple systems which may be written piecemeal
- For scripting based programs, this is an option.

Example: Deployment

- There are options for deployment as well
  - For small systems there is nothing to talk about (just one computer/server)
  - For larger systems, this is an issue
- For billing, payment, or web systems there are many options
- Licensing is also a consideration
  - Large applications may be sold by "seat", processor, computer, user
  - Licenses may be expensive and affect the deployment

Example: Deployment

Central Shared Computer
- System is deployed on a central computer which hosts other information systems of the organization and accessed by terminals.
- System must be small and the existing main computer must be able to handle it.
- Virtual and remote desktop applications have made this option return recently.

Dedicated Computer
- System is deployed on one computer which is dedicated to the system and accessed via terminals
- The system may be moderately heavy or there is no central computer with space to host the system.
- Computer must withstand the expected workload (with increases)

Server/Network Deployment
- Deploying the system on a central server which is accessible to clients via the network.
- Deploy the main parts of the system on the server so that it is accessible via ethernet or wireless.
- Client applications are on user computers and communicate with the main server.

Local Area Network Deployment
- Application does not use a central server, but is distributed to client applications.
- The application is shared between users and communicates over the network to do work
- Commonly referred to as a "Peer-to-Peer" application.

Web Deployment
- Application is adapted to work via web browsers.
- Often called "Web Applications"
- The computation is done on central servers which export an HTML or web interface
- No special software is needed locally, just a web browser and (potentially) plugins. (Thin Client)

Mobile Deployment
- Application is designed to run on small, power limited devices which have limited connectivity.
- An addition to the other models above where consideration is taken for small, power and processor limited devices.
- Data is uploaded and downloaded as connections become available.

Discovering Alternative Strategies

Personal Experience
- Staff should have experience in the area that they developing and should have insights from their previous work.
- May also take advice from the steering committee
- Outside experts may also help in determining possibilities based on their experience.

Requests from Suppliers
- Talk to potential suppliers about the kind of solutions.
- Suppliers will give information about their products which can be helpful in deciding whether their products are viable options.
- You can talk to development houses about potential systems if nothing is extant.
- Development companies will often give offers for work based on your requirements. They can be useful for evaluation even if you don't use them

Conferences and Business Fairs
- Go to industry events and see the options from suppliers
- Workshops and roundtables can give ideas and feedback from peers about what they have done.
- Socializing with other attendees can help share ideas

Industry Publications
- Industry publications have advice and product descriptions
- Often have case studies from companies published
- "White papers" give general ideas about the kinds of systems that they build or supply

Discovering Alternative Strategies

Similar Organizations
- Ask similar organizations what they have done
- Not always possible if the organization is competitive.
- Sometimes companies publish press releases about their strategic decisions which may indicate what they are doing internally.
- Suppliers often publish case studies on their web sites describing their large customers. If any of the customers match your organization, that can be indicative.

Online Forums
- Often workers in a particular fueld will have online forums where they meet and socialize.
- Being involved in the online communities can open connections to other similar companies.
- Can find out casually what other companies are doing or get advice from people who have experience
- Some workers in large companies maintain developer blogs which can give insight into potential solutions.

Analyzing Alternatives and Choosing

- Write down all alternatives and explain them
  - Include supporting documents, if any
- Choosing which is the best option is not necessarily easy
- We'll talk about some guides that can help

Guidelines for Choosing

- **Appropriateness to the System's Goals**
  - How close is it to the needs of the system
- **Example:** If the goal of the new system is to reduce the response time by a factor of 10, the options must be evaluated to see if it's possible to get such an increase.
- **Example**: If the option involves using an outsourced hosting service, can the hosting service be relied upon to provide the desired up time?
- **Example:** If the goal of the system is the make it easier for workers to track the movements and products in the factor, does the new system significantly improve the usability?
- **Appropriateness for Constraints**
  - Given the constraints of the organization, how appropriate is the choice?
- **Example:** If the organization has strict security requirements, is it feasible that the option suggested can keep to those security requirements?
- **Example**: If the organization is fast changing, constantly hiring and firing individuals, can the alternative provide support for the dynamism?

Guidelines for Choosing

- **Appropriateness for the Functional Requirements**
  - Based on what the system must do, does the alternative answer it?
- **Example:** If the system will have a large quantity of data or real time data collection, can the alternative answer the need?
- **Approximate Cost**
  - About how much with the new system cost?
- **Example:** If the organization has some (even approximate) budget constraints, it's important to know whether the new system can be developed with that in mind.

Guidelines for Choosing

Risk

- What are the potential risks which come along?
- What kinds of dangers are there with the given alternative?
- Will the choice restrict future decisions or development in the system?
- Will the introduction of the system affect the behavior or performance of other systems?
- **Example:** If the supplier is new in the field, what are the chances that the supplier will not be able to meet deadlines or stay in budget?
- **Example:** If the developer is not financially solid, what is the chance that it will be out of business soon?
- **Example:** What kind of support can be expected for the system? Bug fixes?
- **Example:** If the system is based on a particular technology, what will happen if it become obsolete or no longer available?
- **Example:** Is there a chance for upgrading the system when new technologies become available?

Effect on Users

- What kind of user reaction can be expected for the new system?
- Is the alternative going to create a system which users are used to or will need a lot of training?
- Does the choice introduce a significant obstruction to work which will prevent the users' adaptation?

Coming to a Choice

- Use the guidelines (or others) to weight each choice
  - Weights will be fuzzy since not all details are known
  - Can give letter grades or scores to each alternative
- Also take the constraints into account
- Based on all of the above – choose one (or perhaps two) best alternative

Example: Course Info System

- Current State:
  - An off the shelf product purchased by the college and run on a dedicated server in the college.
  - Two technical staff members in charge of supporting the system on a day to day basis.
- **Needs:**
  - Based on feedback from students and teachers, the college has decided to replace the system
  - Should have a higher up time
  - Should be faster
  - Should work on more browsers
  - Should allow for different course structures
  - Should allow support file extensions as per the needs of specialized classes
- **Constraints**
  - Constrained by budget
  - Has a relatively small student population (so it doesn't have much bargaining power with large software suppliers).
  - Students are multilingual, so the application must be suited for Hebrew, Arabic, and Russian, (and English?)

Example: Course Info System

Some options:

1. Replace it with another purchased locally hosted academic courseware system.
   - Get one recommended by other institutions of approximately the same size and with a similar student population.
2. Replace it with a hosted academic courseware service which the supplier hosts and supports
3. Replace it with a collaborative application (*e.g.* a Wiki) which can be adapted for use for academic and course needs.
4. Replace it by developing a custom application in house which will address the needs of the college.
5. Replace it by contracting with a third party developer to develop a custom solution for the college.
   - Will be locally hosted, but the developer will provide a maintenance contract.

- Constraints?
  - **Appropriateness to the System's Goals**
  - **Appropriateness for Constraints**
  - **Appropriateness for the Functional Requirements**
  - **Risk**
  - **Effect on Users**

So Far

- Analysis of Alternative Strategies
  - What are alternative strategies?
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- Request for Proposals
  - What is an RFP? Who is its Target?
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Request for Proposals (RFP)

- The **Request for Proposals (RFP)** document is a description of an organization's needs which is sent to potential suppliers.
  - It is prepared using the information gathered during the previous stages we have discussed

RFP is summarized and organized for distribution

- Potentially proprietary information must be removed
- May be distributed to:
  - Development houses
  - Software and application suppliers
  - Advisory companies
  - Computer supply companies (for hardware and software)
  - In-house development division (optional)

- The organization expects to receive responses and choose from them
- We'll talk about an RFP for developing a system

Ways they are distributed

Publish on the web
- Simplest, cheapest
- Index it with major RFP search engines
- Draw attention to it with ads
- (ex. Tenders Electronic Daily, rfpdb, findrfp)

Short List
- Limits the exposure of the RFP
- Good for proprietary information
- May require a prior meeting
- Goal – reduce the number of responses

Publish a summary and sell it
- Done for some public sector RFPs
- Cost is trivial (500 shekels), but meant to deter non-serious responders
- Helps offset the cost of preparation

Provide a summary and interview
- Publish the requirements
- Anyone interested must come for a meeting
- Potential vendors get a copy of the RFP
- Filters like short list, but more open

RFP Examples

- Miami Parking

Partial RFPs

RFPs must be clear, documented, and understandable

If
- The organization has no experience writing RFPs
- The organization doesn't know how to self-study

➔ Hire an outside contractor to write the RFP
- The organization may issue and RFP to write a better RFP

- The result is a complete RFP to really advertise
  - The company which prepared the RFP may want to do the job

What's in an RFP? (1/3)

Administrivia
- Company contact info
- Deadline
- Required appendices
- Legally required text
- Decision procedure

Organizational Description
- Organizational goals
- Structure
- Governance
- Responsibility

Current System Description
- Hardware, software, use
- If it's to be replaced new – just how it works
- Communicating and surrounding systems
- Workflows, forms, formats

Problems and New Requests
- What is wrong/right
- What to do better

What's in an RFP? (2/3)

Goals for the Information System
- Goals
- Boundaries/scope
- Reasons for goals

Organizational Constraints
- Deadlines, technologies, languages
- Make-or-break requirements
- Don't but too much budget info
- Legacy requirements
- Chosen solution alternative(s)

Functional Design
- For each business process in the Initial Design אפיון ראשוני:
  - Users, Trigger
  - Input, Output, Data
  - Logical Description
  - Requirements

Requests and General Attributes
- GUI design or needs
- Use of external tools
- Access control/security
- Documentation requirements
- Support information
- Requests for prototypes or pilots
- Integration
- Training

Size and Data Scale
- How many users?
- Terminals?
- Outside users or connections?
- Data scale
- Scale of operations

What's in an RFP? (3/3)

What the supplier must provide

- What must be in each response
- Tools to do this:
  - Questionnaires
  - Check lists
  - Forms with guided information
  - Sample response sheets

Let's talk more about this

Summary

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