

ECE 321 Software Requirements Engineering

Lecture 6: The vision document

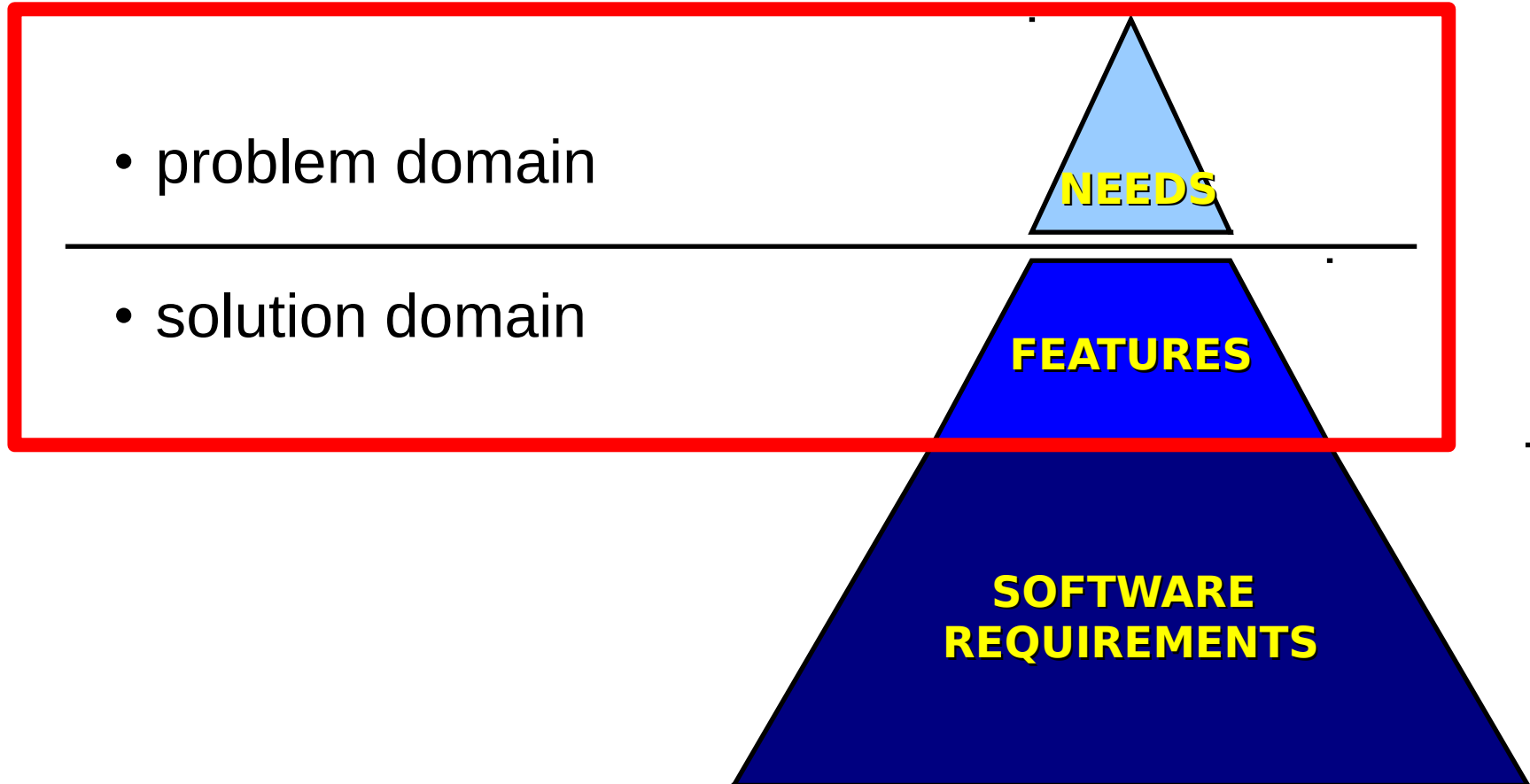
The 3 steps of the requirements development process

- **Requirement elicitation**
 - Understanding and analyzing the problem
 - Learning and understanding user needs
- **Requirement specification**
 - Developing a vision document
 - Developing requirement specification document
- **Requirement validation and verification**

The 3 steps of the requirements development process

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The software requirements pyramid



Organizing requirements information

- Requirements must be captured and recorded
 - In a document
 - In a database
 - In a model
 - In a tool
 - Or a combination of the above

Requirements can rarely be defined in a single monolithic document

- Marketing and business goals have to be separated from detailed product requirements
- Needs are documented prior to requirements
- System may be very complex

The vision and SRS documents

- Vision document
 - Concentrates on marketing and business goals
 - Defines features of the system in general terms
- Software Requirements Specification (SRS)
 - Defines requirements in more specific terms

The vision document combines market and product requirements

- Describes the application in general terms, including descriptions of
 - The target market
 - The system users
 - The application features
- Defines, at a high level of abstraction, the problem and the envisioned solution

The vision document gives an overview of the product from all significant perspectives

- It is the basis for discussion and agreement among
 - The marketing department
 - The project team developing the application
 - The management team

A template for the vision document 1/2

Revision History

1 Business requirements

1.1 Background, Business opportunity, Customer needs

1.2 Business objectives and success criteria

1.3 Business risks

2 Vision of the solution

2.1 Vision statement

2.2 Major features

2.3 Assumptions and dependencies

A template for the vision document 2/2

3 Scope and limitations

- 3.1 Scope of initial and subsequent releases

- 3.2 Limitations and exclusions

4 Business context

- 4.1 Stakeholder profiles

- 4.2 Project priorities

An example vision document (template 1)

Vision and Scope Document
for
Cafeteria Ordering System (COS)

ver 1.0 approved

prepared by Karl Wiegiers
Process Impact
November 4, 2002

(from: Wiegiers, K., Software Requirements, Microsoft)

COS Vision: Revision history

Name	Date	Reason For Changes	Version
Karl Wieggers	10/13/02	initial draft	1.0 draft 1
Karl Wieggers	11/4/02	baseline following changes after inspection	1.0 approved

COS Vision: Business requirements 1/4

1.1 Background, business opportunity and customer needs

A majority of employees presently spend an average of 60 minutes per day going to the cafeteria to select, purchase, and eat lunch. About 20 minutes of this time is spent walking to and from the cafeteria, selecting their meals, and paying for their meals by cash or credit card. When employees go out for lunch, they spend an average of 90 minutes off-site. Some employees phone the cafeteria in advance to order a meal to be ready for them to pick up. Employees don't always get the selections they want because the cafeteria runs out of certain items. The cafeteria wastes a significant quantity of food that is not purchased and must be thrown away. These same issues apply to breakfast and supper, although far fewer employees use the cafeteria for those meals than for lunch.

Many employees have requested a system that would permit a cafeteria user to order meals on-line, to be delivered to a designated company location at a specified time and date. Such a system would save those employees who use the service considerable time and it would increase the chance of them getting the food items they prefer. This would improve both their quality of work life and their productivity. Knowing what food items customers want in advance would reduce wastage in the cafeteria and would improve the efficiency of cafeteria staff. The future ability for employees to order meals for delivery from local restaurants would make a wider range of choices available to employees and provides the possibility of cost savings through volume purchase agreements with the restaurants.

COS Vision: Business requirements 2/4

1.2 Business objectives and success criteria 1/2

BO-1: Reduce cafeteria food wastage by 50% within 6 months following initial release

Scale: Value of food thrown away each week by cafeteria staff.

Meter: Examination of Cafeteria Inventory System logs

Past [2002, initial study]: 30%

Plan: Less than 15%

Must: Less than 20%

COS Vision: Business requirements 3/4

1.2 Business objectives and success criteria 2/2

BO-2: Reduce cafeteria operating costs by 15% within 12 months following initial release.

BO-3: Increase average effective work time by 20 minutes per employee per day within 3 months following initial release.

SC-1: Have 75% of those employees who presently use the cafeteria use the Cafeteria Ordering System within 6 months following initial release.

SC-2: Achieve an increase in the average rating on the quarterly cafeteria satisfaction survey of 0.5 within 3 months and 1.0 within 12 months following initial release.

COS Vision: Business requirements 4/4

1.3 Business risks

RI-1: The cafeteria employees union might require that their contract be renegotiated to reflect the new roles and hours of operation (Prob=0.6; Impact=3)

RI-2: Too few employees might use the system, reducing the return on investment (Prob=0.3; Impact=9)

RI-3: Local restaurants might not agree to offer price reductions to justify employees using the system (Prob=0.4; Impact=3)

COS Vision: Vision of the solution 1/3

2.1 Vision statement

For employees who wish to order meals from the company cafeteria or from local restaurants on-line, the Cafeteria Ordering System is an Internet-based application that will accept individual or group meal orders, process payments, and trigger delivery of the prepared meals to a designated locations. Unlike the current telephone and manual ordering processes, employees who use the Cafeteria Ordering System will not have to go to the cafeteria to get their meals, which will save them time and will increase the food choices available to them.

COS Vision: Vision of the solution 2/3

2.2 Major features

FE-1: Order meals from the cafeteria menu to be picked up or delivered

FE-2: Order meals from local restaurants to be delivered

FE-3: Create, view, modify and delete meal service subscriptions

FE-4: Register for meal payment options

FE-5: Request meal delivery

FE-6: Create, view, modify and delete cafeteria menus

Etc.

COS Vision: Vision of the solution 3/3

2.3 Assumptions and dependencies

AS-1: Intranet-enabled computers and printers will be available in the cafeteria to permit cafeteria employees to process the expected volume of orders.

AS-2: Cafeteria staff and vehicles will be available to deliver all orders within 15 minutes of the requested delivery time.

DE-1: If a restaurant has its own online ordering system, the cafeteria ordering system must be able to communicate with it bidirectionally.

COS Vision: Scope and limitations 1/2

3.1 Scope of initial and subsequent releases

Feature	Release 1	Release 2	Release 3
FE-1	Standard meals from lunch menu only; delivery orders may be paid for only by payroll deduction	Accept orders for breakfasts and dinners, in addition to lunches; accept credit and debit card payments	
FE-2	Not implemented	Not implemented	Fully implemented
FE-3	Implemented if time permits (medium priority)	Fully implemented	
FE-4	Register for payroll deduction payments only	Register for credit card and debit card payments	
FE-5	Meals will be delivered only to company campus sites, not to off-site locations	Add delivery from cafeteria to selected off-site locations	
FE-6	Fully implemented		
FE-7	Not implemented	Not implemented	Fully implemented
FE-8	Not implemented	Fully implemented	
FE-9	Fully implemented		

COS Vision: Scope and limitations 2/2

3.2 Limitations and exclusions

LI-1: Some food items that are available from the cafeteria will not be suitable for delivery, so the menus available to the patrons of the ordering system will be a subset of the full cafeteria menus.

COS Vision: Business context

4.1 Stakeholder profiles

Stakeholder	Major Value	Attitudes	Major Interests	Constraints
Corporate Management	Improved employee productivity; cost savings for cafeteria	Strong commitment through release 2; support for rel. 3 contingent on earlier results	Cost savings must exceed development and usage costs	None identified

COS Vision: Business context

4.1 Stakeholder profiles

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COS Vision: Business context

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Patrons	Better food selection; time savings; convenience	Strong enthusiasm, but might not use it as much as expected because of social value of eating lunches in cafeteria and restaurants	Simplicity of use; reliability of delivery; availability of food choices	Access to corporate Intranet is needed

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Payroll Department	No benefit; needs to set up payroll deduction registration scheme	Not happy about the software work needed, but recognizes the value to the company and employees	Minimal changes in current payroll applications	No resources yet committed to make software changes

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Restaurant Managers	Increased sales; marketing exposure to generate new customers	Receptive but cautious	Minimal new technology needed; concern about resources and costs of delivering meals	Might not have staff and capacity to handle order levels; might need to get Internet access

COS Vision: Business context

4.2 Project priorities

Dimension	Driver	Constraint	Degree of Freedom
Schedule			Release 1 planned to be available by 3/1/03, release 2 by 5/1/03; overrun of up to 3 weeks acceptable without sponsor review

COS Vision: Business context

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Staff	Projected team size is half-time project manager, 2 developers, and half-time tester; additional half-time developer and half-time tester will be available if necessary		

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Staff	Projected team size is half-time project manager, 2 developers, and half-time tester; additional half-time developer and half-time tester will be available if necessary		
Cost		Independent of the scope of the project the maximum budget is limited to 100,000.00	Budget overrun up to 15% acceptable without sponsor review

Another template for the Vision document 1/7

* indicates uniqueness to this template

1 Introduction

1.1 Purpose of the vision document

1.2 Product overview

- The purpose of the application, its version, and the new features to deliver

1.3* References

Another template for the Vision document 2/7

2 User description

- Briefly describe the perspective of the users of your system

2.1 User/market demographics

2.2 User profiles

2.3 User environment

2.4 Key user needs

2.5* Alternatives and competition

Another template for the Vision document 3/7

3 Product overview

3.1 Product perspective

- Provide a block diagram of the product or system and its interfaces to the external environment

3.2 Product position statement

- Describe the unique position the product intends to fill in the marketplace

3.3 Summary of capabilities

3.4 Assumptions and dependencies

3.5* Cost and pricing

Another template for the Vision document 4/7

4* Feature attributes

- Describe feature attributes that will be used to evaluate, track, prioritize and manage the features:
 - Status - Proposed, approved, incorporated
 - Propriety - Critical, important, useful
 - Effort - Low, medium, high
 - Risk - Low, medium, high
 - Target ver. - Version number

Another template for the Vision document 5/7

5 Product features

6* Key use cases

- Describe a few use cases that will help the reader understand how the system is intended to be used

Another template for the Vision document 6/7

7 Other product requirements

7.1 Applicable standards

7.2 System requirements

7.3* Licensing and installation

- Describe any installation requirements that also affect coding

7.4* Performance requirements

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8* Documentation requirements

8.1 User manual

8.2 Online help

8.3 Installation guides, configuration and read me files

8.4 Labeling and packaging

9* Glossary

