The Relevance of Situational Factors in Software Product Management

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Introduction

The following report provides an overview of fourteen case studies performed at various divisions within Centric. Due to time constraints we chose to examine one product per department. For these case studies we interviewed the software product managers responsible for the product. The interview consists of the following steps:

- Firstly a small introduction took place and the purpose of the interview and research was explained to the product manager.
- Secondly each software product manager was asked to describe the processes they have in place for their software product management. After the product manager has finished describing his processes we walk through the reference framework for SPM to check whether the product manager did not forget to tell anything.
- Thirdly the product managers were asked what documentation is produced during their SPM, and which documentation is used as input for a subsequent step.
- The product managers are then asked to fill in a questionnaire, from the viewpoint of the product being examined. This questionnaire consists of the base list of situational factors (see Appendix A) for which the interviewee fills in the values as present for their product.
- To conclude the interview the respondents were asked to indicate the level of influence they believe the situational factors from the base list of situational factors have on the way they organize their SPM processes.

These steps are documented in the case study protocol (see Appendix B) which was used by the interviewer to structure the interviews in a consistent way.

Each case study presented here consists of six parts:

1. A short description of the products purpose.
2. The PDD showing the processes in place for the product is shown.
3. The activity table belonging to the PDD.
4. The table of concepts belonging to the PDD.
5. The values of the situational factors for the product.
6. The level of influence the product managers indicates for the situational factors.

Case Company Description

Centric is an IT company that manages the IT needs of numerous customers on a daily basis. They implement large-scale projects in a wide variety of markets including local government, financial services, housing associations and wholesale. Centric has offices in The Netherlands, Belgium, Germany and Norway. Centric also has various areas of expertise; consultancy, IT solutions, software engineering, e-business, systems integration, managed ICT services and training.

Centric has acquired many product software companies over the last few years, to become a very diverse company. The various divisions within Centric all operate in a different market offering different software products which are all made by Centric itself. Fifteen of these divisions, called business units by Centric, will be incorporated in the case study.

These individually operating business units make Centric ideal as a case company since this essentially makes this case study a study of not one but fifteen companies. The research will therefore study each of these divisions separately.

Case 1: StoreWorld

Description

StoreWorld is a modular solution for retailers, it handles everything from cash registers, advertising to resupplying. Here is an overview of the features offered by the applications:

Transaction:

- Point-of-Sale & Point-of-Service
- Payments
- Queue Busting
- Self Service Checkout
- Shopping Assistant

Communication:

- Electronic Shelf Labeling
- Consumer Kiosks
- Customer Counting Systems
- Security & Fraud Detection
- Loyalty & Customer Relationship
- Promotion
- Reporting & Data warehousing
- Computer Based Training/eLearning
- Digital Signage & Narrowcasting
- Product Locator

Interaction:

- Assisted Selling
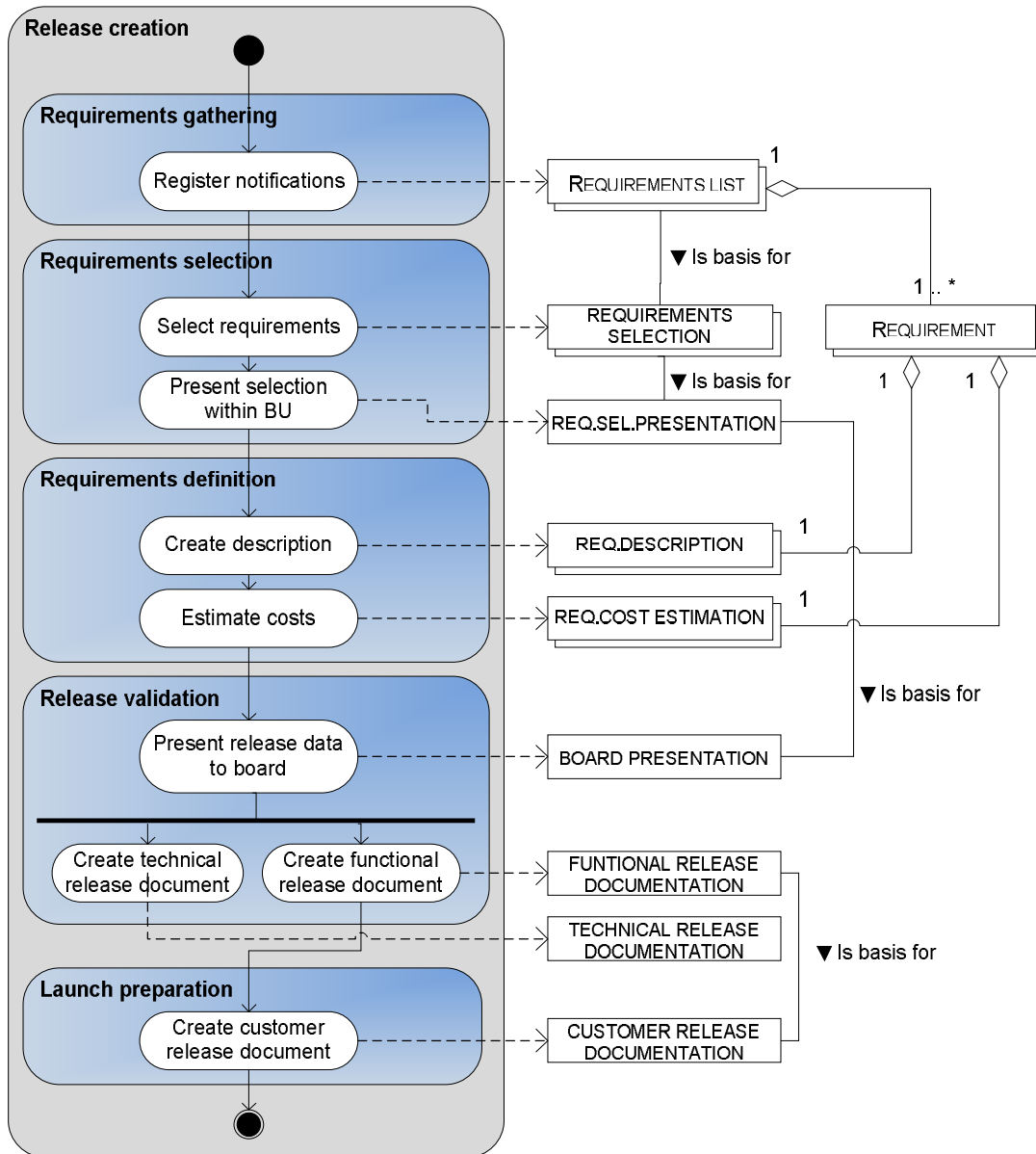- Mobile Terminals & Computers
- Advanced Ordering

Figure 1 The PDD for StoreWorld

Activity table

Activity	Sub-Activity	Explanation
Requirements gathering	*Register notification*	Requirements are registered into a document by consultants, these requirements can come from various sources: the helpdesk, visits with the customer.
Requirements selection	*Select requirements*	The list of all registered requests for new functionality is reviewed by the technical and general product manager together, this review results in the selection of new functionalities for the next release.
	Present selection within BU	The new functionalities which have selected for the next release are presented to stakeholders within the business unit (stakeholders are the consultants and software developers)
Requirements definition	*Create description*	The selected requirements are briefly worked out in a description and is added to the list of selected requirements.
	Estimate costs	A time and costs estimate is worked out for each requirement in the list of selected requirements, and is than added to the list.
Release validation	*Present release data to board*	The newly created released is presented to the board
	Create technical release document	A technical release document is created for the release
	Create functional release document	A purely technical release document is created for the new release, this document is only intended to be used within the business unit.
Launch preparation	*Create customer release document*	An adapted version of the functional release document suitable for the customers.

Table 1 The activity table for StoreWorld: Release creation

Table of concepts

Concept	Description
Requirements list	An excel containing the new functionalities requested and bugs reported by the customers
Requirement	A specific bug, adjust or new functionality.
Req.sel.presention	A presentation of the selected requirements.
Req.description	A description briefly describing a single requirement.
Req. cost estimate	A cost estimate indicating the cost for developing the requirement.
Board presentation	A presentation of the selected and worked out requirements.
Functional release documentation	A document describing the functionality changes and additions for the new release.
Technical release documentation	A word document describing the technical consequences for the new release.
Customer release documentation	A word document understandable for the customer receiving the new release.

Table 2 The table of concept for StoreWorld: Release creation

Base list of situational factors: values

Situational factor	Value
Development philosophy	Agile
Size of business unit team	550
Size of development team	100
Customer loyalty	High
Customer satisfaction	7
Customer variability	90
Number of customers	2
Number of end-users	20000
Type of customers	Large Companies
Hosting demands	Customer server
Localization demand	20
Market growth	Growing
Market size	3500+
Release frequency	180
Sector	Retail
Standard dominance	Medium
Variability of feature requests	Medium
Application age	250
Defects per year: total	10
Defects per year: serious	Fully developed
Development platform maturity	200
New requirements rate	2
Number of products	4
Product lifetime	10
Product size	?
Product tolerance	High
Software Platform	Java / Delphi / Progress SW / .net / ASP
Company policy	High
Customer involvement	High
Legislation	Strict
Partner involvement	Low

Table 3 Base list of situational factors: values for StoreWorld

Base list of situational factors: influence

Situational factor	Portfolio management	Product roadmapping	Requirements management	Release planning
Business unit characteristics				
Development philosophy	1	1	1	2
Size of business unit team	1	1	1	1
Size of development team	1	1	1	1
Customer Characteristics				
Customer loyalty	1	1	1	1
Customer satisfaction	1	1	1	1
Customer variability	1	1	1	1
Number of customers	4	4	6	1
Number of end-users	4	4	6	1
Type of customers	2	6	5	1
Market Characteristics				
Hosting demands	1	1	1	1
Localization demand	5	5	5	5
Market growth	6	6	6	6
Market size	6	6	6	6
Release frequency	1	1	1	1
Sector	7	7	7	7
Standard dominance	1	1	1	1
Variability of feature requests	1	1	1	1
Product Characteristics				
Application age	1	1	1	1
Defects per year: total	1	1	1	5
Defects per year: serious	1	1	1	5
Development platform maturity	1	1	1	1
New requirements rate	1	1	1	1
Number of products	1	1	1	1
Product lifetime	6	6	1	5
Product size	1	1	1	1
Product tolerance	1	1	1	1
Software Platform	3	3	1	4
Stakeholder involvement				
Company policy	4	4	4	4
Customer involvement	1	5	5	1
Legislation	1	1	1	1
Partner involvement	1	5	5	1

Table 4 Base list of situational factors: influence indicated by the StoreWorld product manager

Case 2: DDS4all

Description

DDS4all is an data distribution system which connects several applications together and make sure that all applications connected with it have up-to-date information. The application is aimed at distributing information within one municipality but can also be connected with another application (VOA4all) which allows for connections with applications of other municipalities.
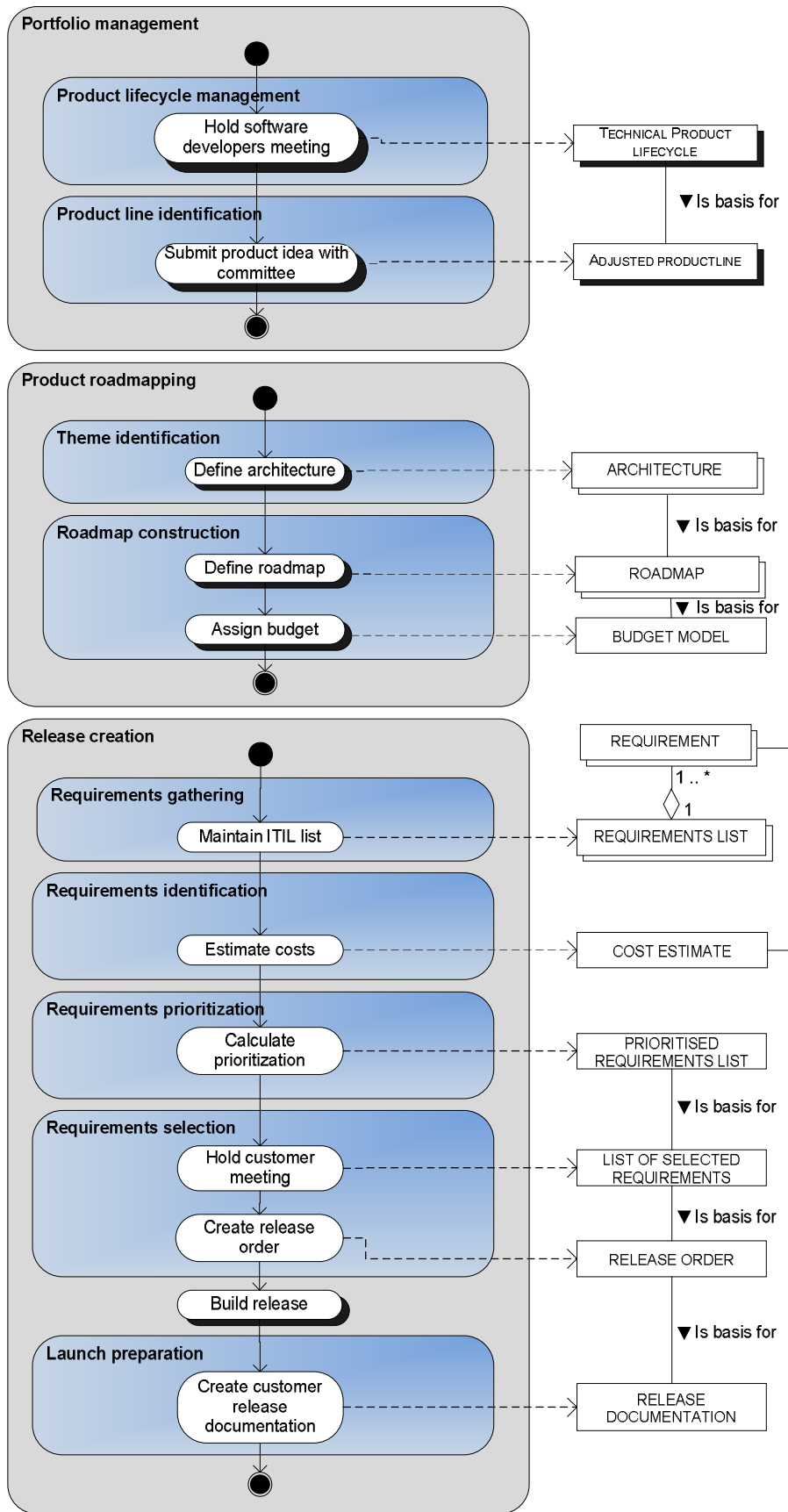
Figure 2 The PDD for DDS4all

Activity table

Activity	Sub-Activity	Explanation
Product lifecycle management	*Hold software developers meeting*	A meeting between the software developers is held six times per year. During this meeting the product is discussed on a technical level, this leads to a decision of the technical status of the products lifecycle.
Product line identification	*Submit product idea with committee*	When someone has an idea to change the product line (remove, add, modify some part), he submits that idea with the committee which decides whether the idea is adopted in the product line or not.

Table 5 The activity table for DDS4all: Portfolio management

Activity	Sub-Activity	Explanation
Theme identification	*Define architecture*	During a meeting a general idea (goal) is formed where to go with the product in the coming seven years.
Roadmap construction	*Define roadmap*	During this phase a roadmap is made how to achieve the goal set during the defining of the architecture.
	Assign budget	With the goal and road to that goal determined, the budget for the steps determined in the roadmap.

Table 6 The activity table for DDS4all: Product roadmapping

Activity	Sub-Activity	Explanation
Requirements gathering	*Maintain ITIL list*	Requirements are gathered using Centrics ITIL application.
Requirements identification	*Estimate costs*	A cost estimate is made for each requirement gathered.
Requirements prioritization	*Calculate prioritization*	A purely calculated prioritization is made to order the requirements.
Requirements selection	*Hold customer meeting*	A selection of requirements is made from the prioritized list in a meeting with a small group of customers representing all types of customers.
	Create release order	A release order is written for the selected requirements.

Build release			The release is build.
Launch preparation	*Create customer release documentation*		Documentation aimed at informing the customers is written

Table of concepts

Concept	Description
Technical product lifecycle	A (word) document assessing the technical status of the products.
Adjusted product line	A (word) document describing the new form of the product line.

Concept	Description
Architecture	A (word) document describing where to go with the product in the next seven years.
Roadmap	A (word) document describing how to reach the goal set for the product.
Budget model	A (word) document describing the budget for the roadmap.

Concept	Description
Requirement list	A list of requirements generated from ITIL.
Requirement	A single requirement containing a bug or new or adjusted functionality requested by a customer.
Cost estimate	A costs estimate for a specific requirement.
Prioritized requirements list	A prioritized overview of the requirements with their costs.
List of selected requirements	The final list of requirements that were selected by the customers representatives for the next release.
Release order	A detailed document detailing the release and all of its requirements.
Release documentation	A document describing the release to the customers.

Base list of situational factors: values

Situational factor	Value
Development philosophy	?
Size of business unit team	15
Size of development team	4
Customer loyalty	High
Customer satisfaction	7
Customer variability	2
Number of customers	180
Number of end-users	180
Type of customers	Small companies / Medium companies
Hosting demands	Not applicable
Localization demand	1
Market growth	Stable
Market size	0-500
Release frequency	180
Sector	Public
Standard dominance	High
Variability of feature requests	Low
Application age	50
Defects per year: total	0
Defects per year: serious	Ever changing
Development platform maturity	50
New requirements rate	3
Number of products	9
Product lifetime	12
Product size	?
Product tolerance	Low
Software Platform	Oracle / Oracle forms
Company policy	Medium
Customer involvement	Medium
Legislation	Loose
Partner involvement	High

Table 11 Base list of situational factors: values for DDS4all

Base list of situational factors: influence

Situational factor	Portfolio management	Product roadmapping	Requirements management	Release planning
Business unit characteristics				
Development philosophy	1	1	1	1
Size of business unit team	2	2	2	2
Size of development team	2	2	2	2
Customer Characteristics				
Customer loyalty	3	4	4	3
Customer satisfaction	2	2	2	2
Customer variability	3	3	5	5
Number of customers	2	2	2	2
Number of end-users	2	2	2	2
Type of customers	1	1	1	1
Market Characteristics				
Hosting demands	2	2	2	2
Localization demand	4	4	5	5
Market growth	5	4	2	2
Market size	5	3	1	1
Release frequency	2	2	5	5
Sector	2	2	2	2
Standard dominance	1	1	1	1
Variability of feature requests	4	4	4	4
Product Characteristics				
Application age	6	6	6	6
Defects per year: total	1	1	5	5
Defects per year: serious	2	2	5	5
Development platform maturity	1	1	1	1
New requirements rate	1	1	1	1
Number of products	4	1	1	1
Product lifetime	2	2	4	4
Product size	1	1	1	1
Product tolerance	1	1	1	1
Software Platform	1	1	1	1
Stakeholder involvement				
Company policy	1	1	1	1
Customer involvement	1	1	3	1
Legislation	1	1	5	6
Partner involvement	1	1	1	1

Table 12 Base list of situational factors: influence indicated by the DDS4all product manager

Case 3: ALERT

Description

ALERT is fully integrated standard software for the real-estate sector. It is aimed at medium and small sized real-estate companies, painters and real-estate maintenance companies.

The following modules are available:

- ALERT (basis): Calculations, project governance et cetera.
- ALERT CRM: Customer relationship management
- ALERT Documentbeheer: Extensive document management
- ALERT WERKBON*@all*: Planning and processing of projects
- ALERT Managementinformatie: Predefined models with management information
- ALERT.net: Accessible via intra- and internet
- ALERT Financieel: Financial management

Characteristics:

- Modular buildup
- Information easily accessible at every level
- Cost calculation
- Integration with MS Office
- Flexible management information
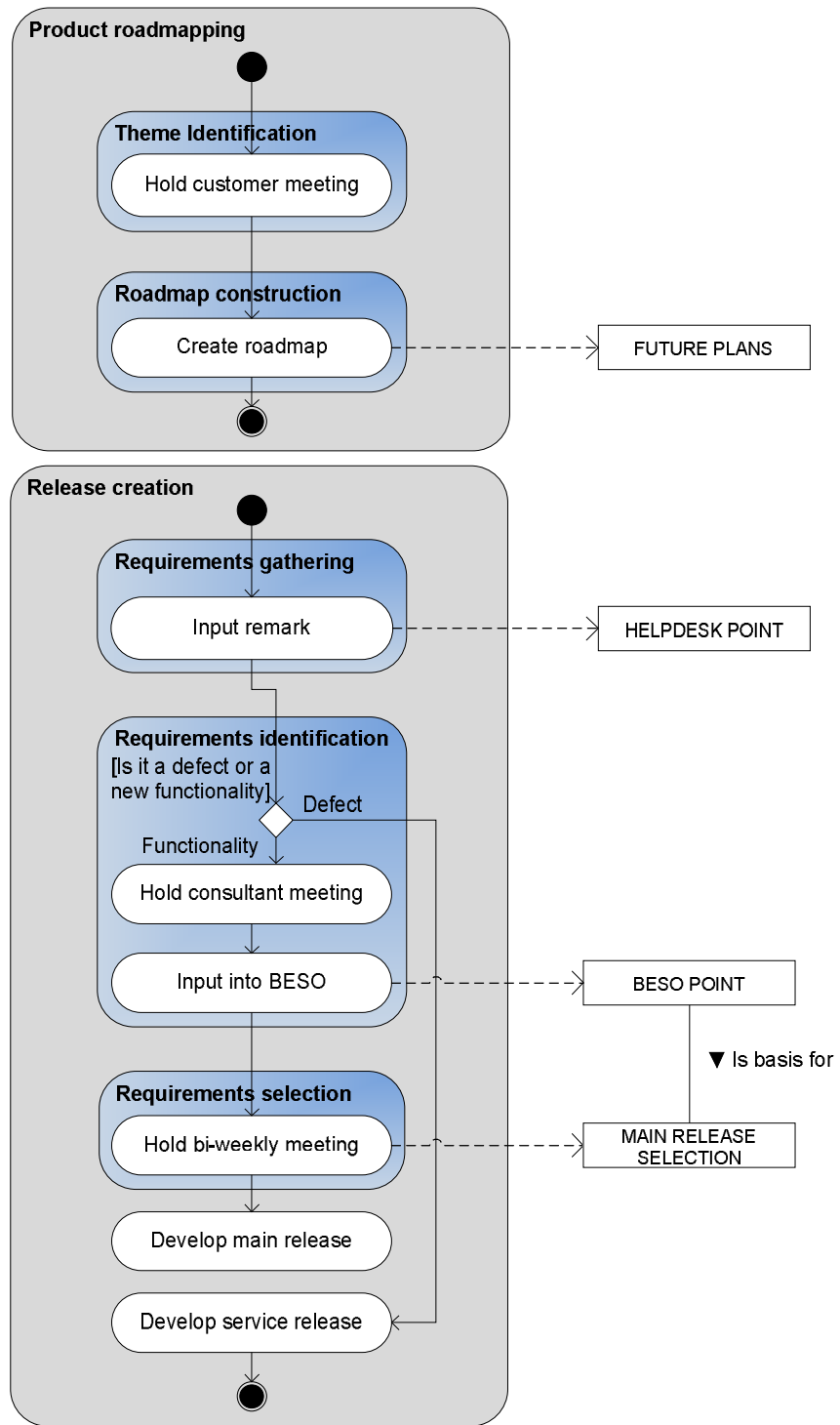- Accessible via internet, PDA or laptop

PDD

Figure 3 The PDDs for ALERT

Activity table

Activity	Sub-Activity	Explanation
Theme identification	*Hold customer meeting*	Customer meetings are held to determine the direction in which the product is going to be developed.
Roadmap construction	*Create roadmap*	A roadmap is made based on the customer meeting.

Table 13 The activity table for ALERT: Product roadmapping

Activity	Sub-Activity	Explanation
Requirements gathering	*Input remark*	Requirements are gathered by the helpdesk.
Requirements identification	*Hold consultant meeting*	Bugs are directly send to development and a meeting between the customer and a consultant are set up in case of a new or changed requirement request.
	Input into BESO	A new requirement is put into BESO (the system for recording the new feature requests) by the consultant after the consultant meeting.
Requirements selection	*Hold bi-weekly meeting*	A meeting with consultants and software developers is held every two weeks to discuss with requirements should be selected for the release.
Develop service release		A release with bug fixes is build
Develop main release		A release with functional changes and bug fixes is build.

Table 14 The activity table for ALERT: Release creation

Table of concepts

Concept	Description
Future plans	A (word) document describing the general direction the product is heading for.

Table 15 The table of concept for ALERT: Product roadmapping

Concept	Description
Helpdesk point	A registered customer requirement
BESO point	A description of the content and status of a functionality change or addition.
Main release selection	A list of the selected requirements for the next release.

Table 16 The table of concept for ALERT: Release creation

Base list of situational factors: values

Situational factor	Value
Development philosophy	Agile (for bugs) / Waterfall (for requirements)
Size of business unit team	25
Size of development team	4
Customer loyalty	High
Customer satisfaction	7
Customer variability	5
Number of customers	260
Number of end-users	?
Type of customers	Small / Medium
Hosting demands	Customer server
Localization demand	1
Market growth	Stable
Market size	1500-3500
Release frequency	120
Sector	Real-estate & construction maintenance
Standard dominance	Low
Variability of feature requests	Medium
Application age	120
Defects per year: total	30
Defects per year: serious	2
Development platform maturity	Ever changing
New requirements rate	300
Number of products	1
Product lifetime	5 to 10 years
Product size	?
Product tolerance	Medium
Software Platform	Magic + pervasive
Company policy	Low
Customer involvement	Medium
Legislation	Low
Partner involvement	Low

Table 17 Base list of situational factors: values for ALERT

Base list of situational factors: influence

The product manager for ALERT only indicated whether he thinks the situational factor has an influence (value 1) on the software product management processes, or not (value 0).

Situational factor	Has influence?
Development philosophy	0
Size of business unit team	1
Size of development team	1
Customer loyalty	0
Customer satisfaction	1
Customer variability	1
Number of customers	0
Number of end-users	0
Type of customers	0
Hosting demands	1
Localization demand	0
Market growth	1
Market size	1
Release frequency	0
Sector	0
Standard dominance	0
Variability of feature requests	0
Application age	1
Defects per year: total	0
Defects per year: serious	0
Development platform maturity	0
New requirements rate	1
Number of products	1
Product lifetime	0
Product size	0
Product tolerance	0
Software Platform	1
Company policy	1
Customer involvement	1
Legislation	1
Partner involvement	1

Table 18 Base list of situational factors: influence indicated by the ALERT product manager

Case 4: Vision

Description

Vision is an international, multilingual point-of-Sale software package supplying both cash register applications. It also provides interoperability with a large number of logistical systems. It has already been applied in warehouses, hardware stores, bookshops, and more.

The cash register module is successful at more than 7500 shops in. amongst others, the Netherlands, Belgium, Luxemburg, France, Germany, the United States, and Australia.

The Vision Suite exists of the following modules:
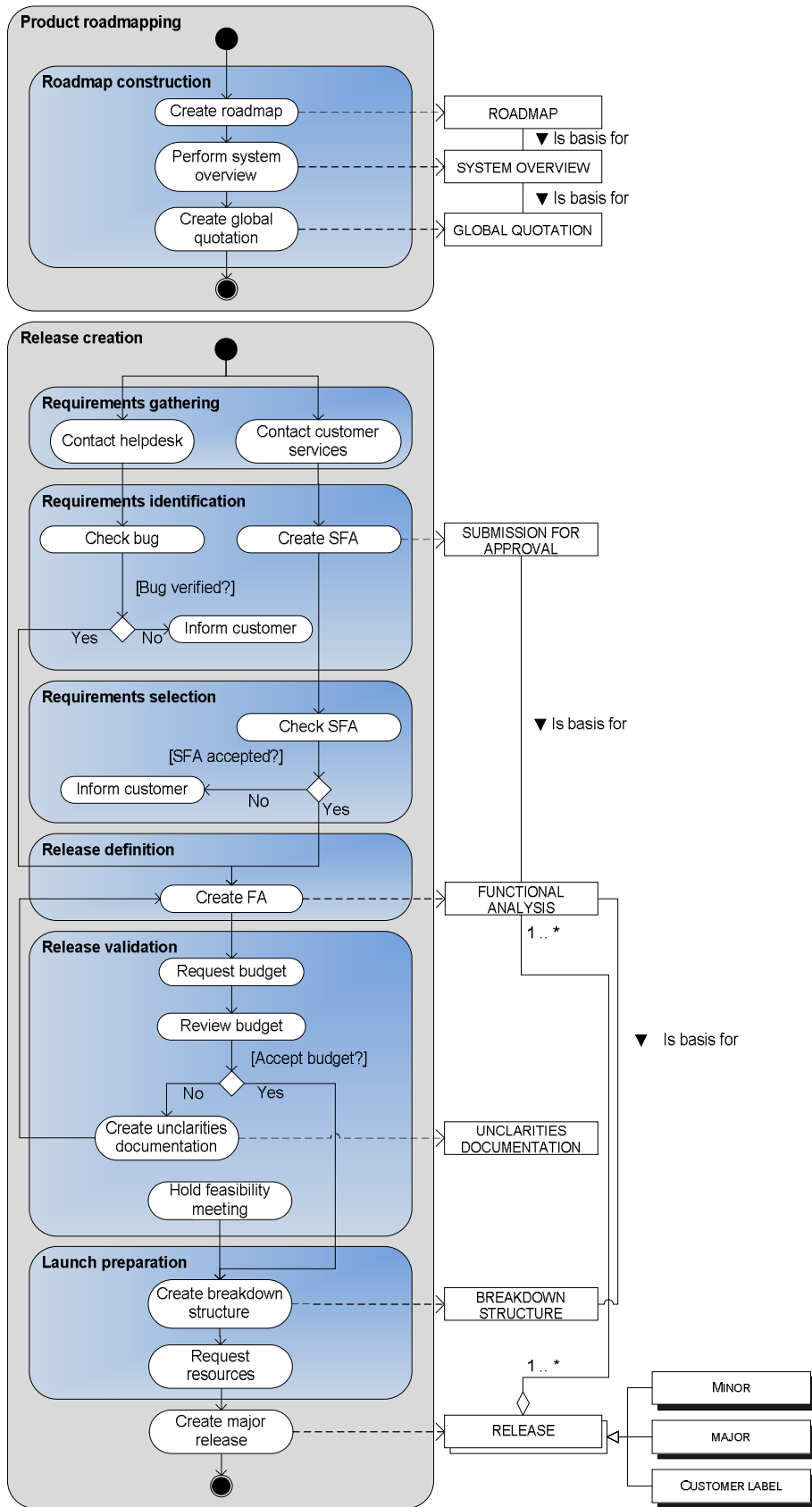
- Front Office
- Back Office
- Central Office

PDD

Figure 4 PDD for Vision

Activity table

Activity	Sub-Activity	Explanation
Roadmap construction	*Create roadmap*	The roadmap with global plans for the coming year is created.
	Perform systems overview	An architect looks what must be done in order to achieve the roadmap and judges whether it is feasible or causes too technical problems.
	Create global quotation	A global technical analysis is made and a time estimate is given for the global plans.

Table 19 The activity table for Vision: Product roadmapping

Activity	Sub-Activity	Explanation
Requirements gathering	*Contact helpdesk*	Defects are indicate by customers calling the helpdesk.
	Contact customer services	Customer services is contacted by customers with a request for new or changed functionalities.
Requirements identification	*Check bug*	The bug is checked for validity and reproducibility.
	Create SFA	A submission for approval (SFA) is created to register each request for new or changed functionality.
	Inform customer	If the bug was not verified, than the customer is informed of this.
Requirements selection	*Check SFA*	It is checked whether the SFA fits within the concept of the total application, and whether there is enough demand for it.
	Inform customer	The customer is informed if the SFA isn't accepted.
Release definition	*Create FA*	A function analysis (FA) is created for the SFA.
Release validation	*Request budget*	A budget is requested for the FA.
	Review budget	The FA is reviewed for details that are still unclear.
	Create unclarities document	If the FA is rejected, than an unclarities document is created specifying which parts of the FA need to be improved, or further explained.
	Hold feasibility meeting	A meeting is organized to judge whether the right and enough resources have been requested.
Launch preparation	*Create breakdown structure*	The breakdown structure is created, and the customer is registered.
	Request resources	The resources to start building are

	requested.
Create major release	The release is build.

Table of concepts

Concept	Description
Roadmap	A document containing the global direction the product is heading in.
System overview	The technical analysis of the roadmap, containing the consequences of the roadmap and, possibly, the technical problems.
Global quotation	A global estimate of the resources required for implementing the roadmap is made.

Concept	Description
Submission for approval	A request to approve the new or changed functionality, which is briefly described in this document.
Functional analysis	A document containing a purely functional description of what the requested feature is supposed to do.
Unclarities documentation	A document describing what should be improved in the FA.
Breakdown structure	The production time estimate, and, if needed, a technical analysis is included for the requirement.
Release	A release is a group of FA's.
Minor	A small release containing bug fixes.
Major	A major release containing bug fixes and functional changes.
Customer label	A release specifically for one customer, pre-releasing functional changes.

Base list of situational factors: values

Situational factor	Value
Development philosophy	Waterfall
Size of business unit team	8
Size of development team	3
Customer loyalty	Low
Customer satisfaction	7
Customer variability	100
Number of customers	37
Number of end-users	18000
Type of customers	Medium companies / Large companies
Hosting demands	Customer server
Localization demand	8
Market growth	Growing
Market size	0-500
Release frequency	90
Sector	Retail
Standard dominance	Low
Variability of feature requests	Low
Application age	96
Defects per year: total	10000
Defects per year: serious	1000
Development platform maturity	Fully developed
New requirements rate	350
Number of products	2
Product lifetime	4
Product size	300
Product tolerance	high
Software Platform	.net / Foxpro / visual basic
Company policy	Low
Customer involvement	High
Legislation	Loose
Partner involvement	Low

Table 23 Base list of situational factors: values for Vision

Base list of situational factors: influence

Situational factor	Portfolio management	Product roadmapping	Requirements management	Release planning
Business unit characteristics				
Development philosophy	1	5	2	5
Size of business unit team	5	5	7	7
Size of development team	6	5	7	7
Customer Characteristics				
Customer loyalty	6	4	1	1
Customer satisfaction	6	6	6	4
Customer variability	3	6	7	7
Number of customers	6	4	7	7
Number of end-users	6	4	6	6
Type of customers	4	4	7	4
Market Characteristics				
Hosting demands	1	1	1	1
Localization demand	1	7	4	7
Market growth	3	1	1	3
Market size	6	1	1	1
Release frequency	1	7	7	7
Sector	4	7	7	7
Standard dominance	1	4	6	6
Variability of feature requests	1	7	7	7
Product Characteristics				
Application age	4	2	2	2
Defects per year: total	1	1	7	7
Defects per year: serious	1	1	7	7
Development platform maturity	1	4	4	4
New requirements rate	7	7	7	7
Number of products	1	5	1	5
Product lifetime	4	4	1	1
Product size	4	4	4	4
Product tolerance	1	7	7	7
Software Platform	6	3	3	3
Stakeholder involvement				
Company policy	2	2	2	2
Customer involvement	7	7	7	7
Legislation	4	4	4	4
Partner involvement	4	4	4	4

Table 24 Base list of situational factors: influence indicated by the Vision product manager

Case 5: EDI

Description

Centrics EDI-software is standard software for electronic data exchange. This software supports almost all messaging services, point-to-point connections, and message standards. Custom development can be done to integrate EDI with back office applications or specific security or archiving applications.
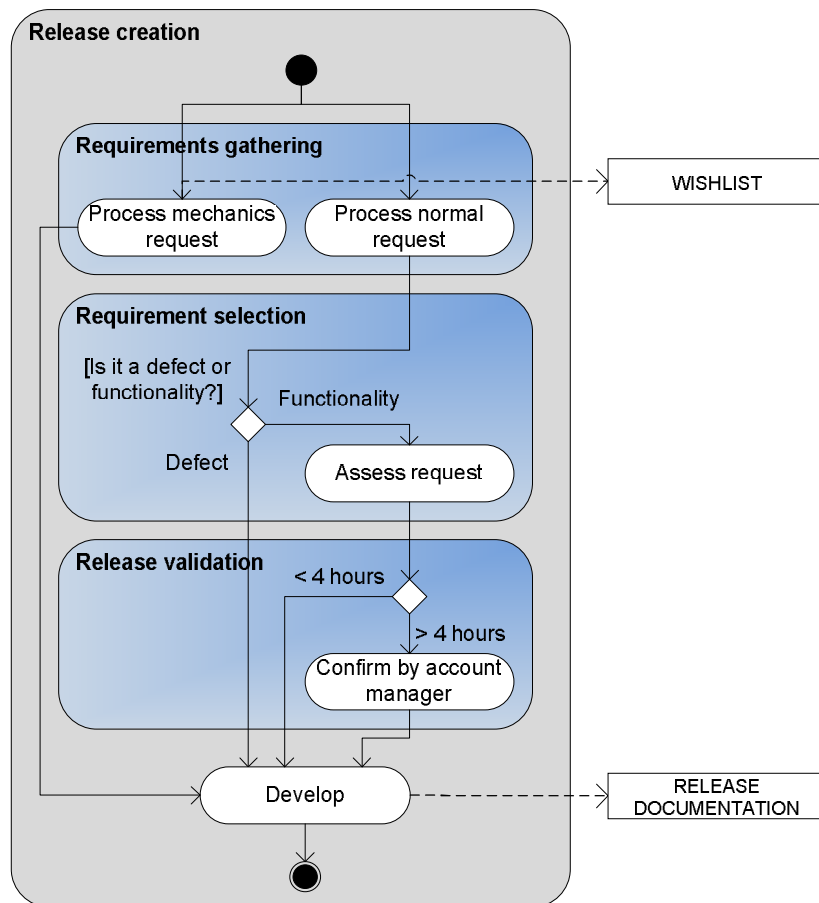
PDD

Figure 5 The PDD for EDI

Activity table

Activity	Sub-Activity	Explanation
Requirements gathering	*Process mechanics request*	The mechanic who installs the hard and software at the customers maintains a wish list of functionalities he would like to have added.
	Process normal request	Helpdesk employees and account managers gather defects and functionality changes and additions from customers who contact them.
Requirements selection	*Assess request*	The product manager checks the request and makes a cost estimate for the development time.
Release validation	*Confirm by account manager*	If the development takes more than four hours than the account manager checks the request again.
Develop		Develop the release.

Table 25 The activity table for EDI: Release creation

Table of concepts

Concept	Description
Wish list	The list of functionality changes and additions of the mechanic.
Release documentation	The documentation describing the release's changes.

Table 26 The table of concept for EDI: Release creation

Base list of situational factors: values

Situational factor	Value
Development philosophy	Agile
Size of business unit team	10
Size of development team	1
Customer loyalty	Low
Customer satisfaction	?
Customer variability	More than 50%
Number of customers	540
Number of end-users	?
Type of customers	All
Hosting demands	Customer server
Localization demand	40
Market growth	Stable
Market size	3500+
Release frequency	There is no release frequency
Sector	Sector independent
Standard dominance	Low
Variability of feature requests	Low
Defects per year: total	?
Defects per year: serious	?
Development platform maturity	Fully developed
New requirements rate	?
Number of products	2
Product age	252
Product lifetime	?
Product size	?
Product tolerance	Medium
Software Platform	C
Company policy	Low
Customer involvement	Medium
Legislation	Loose
Partner involvement	Low

Table 27 Base list of situational factors: values for EDI

Base list of situational factors: influence

The product manager for EDI did not indicate the influence of the situational factors because his experience in product management is not extensive enough to provide a solid estimate about the base list of situational factors.

Case 6: Wocas4all

Description

Wocas4all is both an information system and a development environment. It is primarily aimed at the a service provider for the social housing sector. The development environment allows for extensions on this basic service by supplying basic building blocks to create your own system. Wocas4all also features a variable functionality which is regulated based on 'business rules'. These business rules are a translation of the company model of the corporation, and can be edited with the special business rules editor (BRE4all).

The WOCAS4all solution has been integrated with a document information system (DIS), a geographical information system (GIS), and a technical information system (TIS).
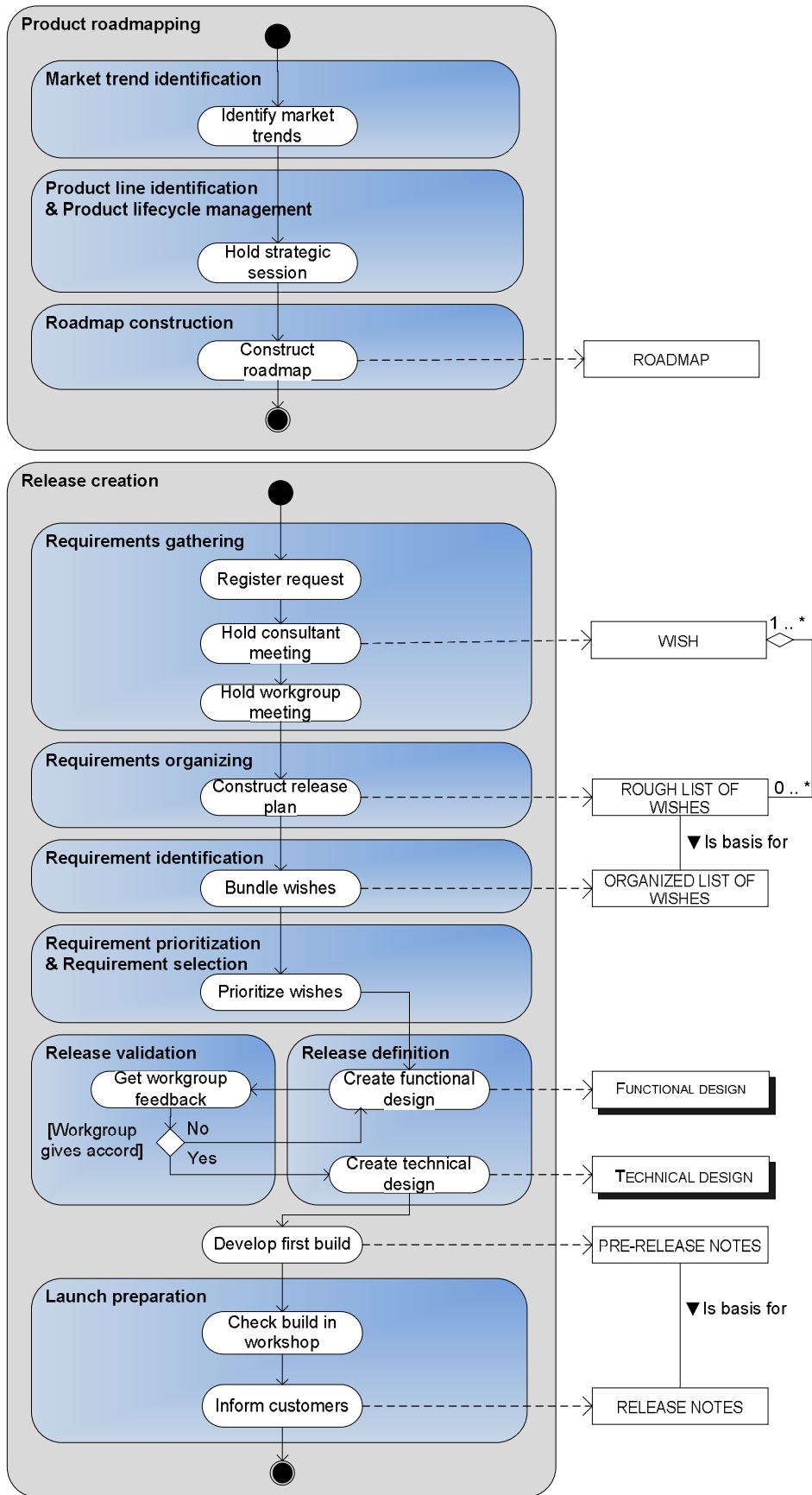
PDD

Product roadmapping

Market trend identification

Identify market trends

Product line identification & Product lifecycle management

Hold strategic session

Roadmap construction

Construct roadmap - - - - - → ROADMAP

Release creation

Requirements gathering

Register request

Hold consultant meeting - - - - - → WISH   1 .. *

Hold workgroup meeting

Requirements organizing

Construct release plan - - - - - → ROUGH LIST OF WISHES   0 .. *

▼ Is basis for

Requirement identification

Bundle wishes - - - - - → ORGANIZED LIST OF WISHES

Requirement prioritization & Requirement selection

Prioritize wishes

Release validation

Get workgroup feedback

[Workgroup gives accord] ◇ No / Yes

Release definition

Create functional design - - - - - → FUNCTIONAL DESIGN

Create technical design - - - - - → TECHNICAL DESIGN

Develop first build - - - - - → PRE-RELEASE NOTES

▼ Is basis for

Launch preparation

Check build in workshop

Inform customers - - - - - → RELEASE NOTES

Figure 6 The PDD for Wocas4all

Activity table

Activity	Sub-Activity	Explanation
Market trend identification	*Identify market trends*	A market analysis is performed to identify the wishes of the market.
Product line identification & Product lifecycle management	*Hold strategic session*	The products are discussed and their future is determined (whether they should be merged, split up into multiple products, or ended).
Roadmap construction	*Construct roadmap*	Develop the future plans for the product (for the next two to three years).

Table 28 The activity table for Wocas4all: Product roadmapping

Activity	Sub-Activity	Explanation
Requirements gathering	*Register request*	Register the requests of the customers.
	Hold consultant meeting	A meeting between the customer and the consultant is organized to better determine the wishes of the customer, and look if there are more wishes.
	Hold workgroup meeting	A meeting with the customers is held regularly where the wishes are discussed. Here they determine whether this is a wish from multiple customers.
Requirements organizing	*Construct release plan*	A rough plan for the next release is created (this release spans one year), this plan also divides the wishes over the different products within the product line.
Requirements identification	*Bundle wishes*	The wishes are grouped, and the doubles are removed.
Requirements prioritization & Requirements selection	*Prioritize wishes*	The list of wishes is prioritized and the top of this list is selected for the next release.
Release definition	*Create functional design*	A functional design is created per wish.
Release validation	*Get workgroup feedback*	The release, and functional designs, are discussed with the customers
Develop build		A first build, with early release notes, of the release is created, and the pre-release notes are send to the customers.
Launch preparation	*Check build in workshop*	A first build of the release is tested in practice with a group of customers.
	Inform customers	The release notes are send to the

	customers.

Table of concepts

Concept	Description
Roadmap	A document generally describing the future plans for the product for the next two to three years. These plans are expressed as large wishes.

Table of concepts

Concept	Description
Wish	A wish is a request for a new or adjusted functionality.
Rough list of wishes	A document containing a rough division of the wishes over the different products.
Organized list of wishes	A document containing the wishes, of which the doubles and realistic wishes have been removed.
Functional design	A document describing the functionalities the wish should have.
Technical design	A technical design describing the wish.
Pre-release notes	A early version of the release notes for the total release.
Release notes	The final release notes for the total release

Base list of situational factors: values

Situational factor	Value
Development philosophy	Waterfall
Size of business unit team	90
Size of development team	40
Customer loyalty	Medium
Customer satisfaction	7
Customer variability	100
Number of customers	15
Number of end-users	2000
Type of customers	Medium / Large
Hosting demands	Both
Localization demand	2
Market growth	Stable
Market size	0-500
Release frequency	365
Sector	Non-profit
Standard dominance	Medium
Variability of feature requests	Low
Defects per year: total	1500
Defects per year: serious	50
Development platform maturity	Fully developed
New requirements rate	1500
Number of products	0
Product age	5
Product lifetime	10-15
Product size	1400
Product tolerance	High
Software Platform	C++
Company policy	Low-medium
Customer involvement	High
Legislation	Strict
Partner involvement	Low

Table 32 Base list of situational factors: values for Wocas4all

Base list of situational factors: influence

Situational factor	Portfolio management	Product roadmapping	Requirements management	Release planning
Business unit characteristics				
Development philosophy	1	1	4	1
Size of business unit team	3	5	5	5
Size of development team	5	7	7	7
Customer Characteristics				
Customer loyalty	5	5	7	5
Customer satisfaction	5	5	5	5
Customer variability	5	5	5	5
Number of customers	3	3	3	3
Number of end-users	1	1	1	1
Type of customers	5	5	3	3
Market Characteristics				
Hosting demands	1	4	1	1
Localization demand	1	4	2	1
Market growth	1	1	1	1
Market size	3	3	3	3
Release frequency	1	1	1	1
Sector	1	1	7	3
Standard dominance	5	7	1	1
Variability of feature requests	1	4	4	1
Product Characteristics				
Application age	7	7	3	1
Defects per year: total	4	4	1	1
Defects per year: serious	4	4	1	1
Development platform maturity	1	3	5	3
New requirements rate	1	1	5	1
Number of products	1	1	1	1
Product lifetime	7	7	3	1
Product size	1	5	5	1
Product tolerance	1	1	1	1
Software Platform	1	1	1	1
Stakeholder involvement				
Company policy	7	5	1	1
Customer involvement	5	5	7	1
Legislation	7	7	1	1
Partner involvement	4	4	4	1

Table 33 Base list of situational factors: influence indicated by the Wocas4all product manager

Case 7: GWS4all

Description

GWS4all (Geïntegreerd Welzijn Systeem) is a standard solution for the social services of the municipalities and organizations providing these services for the municipalities and supports all of the business processes. GWS4all is platform independent.
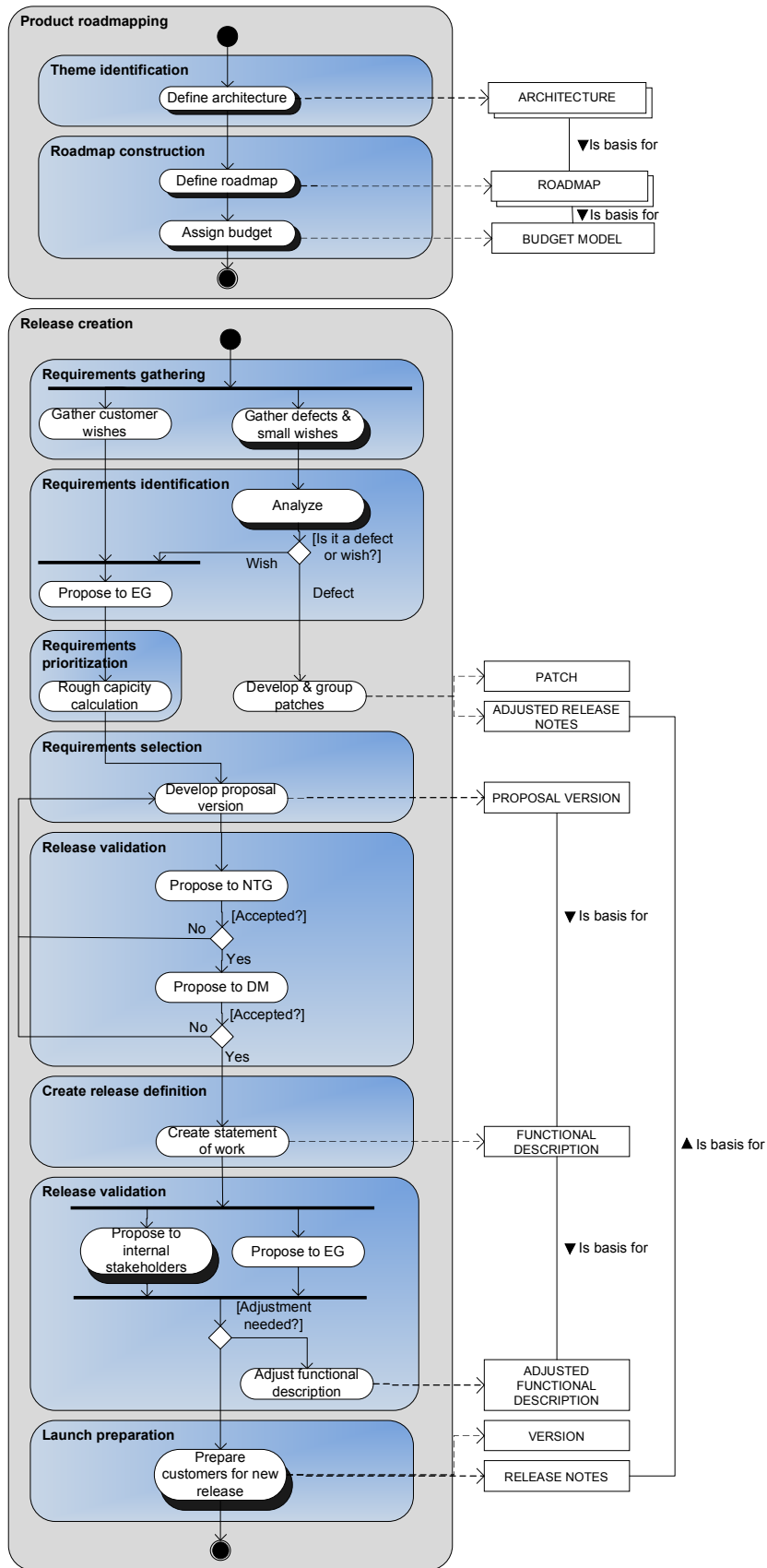
Figure 7 The PDD for GWS4all

Activity table

Activity	Sub-Activity	Explanation
Theme identification	*Define architecture*	During a meeting a general idea (goal) is formed where to go with the product in the coming seven years.
Roadmap construction	*Define roadmap*	During this phase a roadmap is made how to achieve the goal set during the defining of the architecture.
	Assign budget	With the goal and road to that goal determined, the budget for the steps determined in the roadmap.

Table 34 The activity table for GWS4all: Product roadmapping

Activity	Sub-Activity	Explanation
Requirement gathering	*Gather customer wishes*	The customer wishes are gathered periodically at the customer.
	Gather defects and small wishes	Defects are reported to the customers service, where they are registered.
Requirements identification	*Analyze*	When a defect is analyzed it can turn out to be a small wish, if this is the case then it is send to be proposed in front of the expert group (EG).
	Propose to EG	The gathered customer wishes are proposed to an expert group representing all of the customers.
Develop & group patches		Defects are solved in patches, these patches are group together and distributed every six weeks.
Requirements prioritization	*Rough capacity calculation*	A rough estimate is made of the amount of work needed to develop the wish.
Requirements selection	*Develop proposal version*	A proposal for a release is made and presented to the customers. The roadmap is taken into account when creating the proposal.
Release validation	*Propose to NTG*	The proposal for release is presented in a meeting to the national test group, who can accept or reject the proposal (causing it to be send back to the 'Develop proposal version' phase).
	Propose to DM	The proposal for release is presented in a meeting to the directors of the customers, who can accept or reject the proposal (causing it to be send back to the

		'Develop proposal version' phase).
Create release definition	*Create statement of work*	The statement of work for the release is created.
Release validation	*Propose to internal stakeholders*	The statement of work is proposed to representatives of the product management, functional analyzers, technical analyzers, software developers, who can accept or reject the proposal (causing it to be send back to the 'Adjust functional description' phase).
	Propose to EG	The statement of work is proposed to expert group (customers), who can accept or reject the proposal (causing it to be send back to the 'Adjust functional description' phase).
	Adjust functional description	Adjust the functional description based on the comment from the internal stakeholders and internal stakeholders.
Launch preparation	*Prepare customers for new release*	Supply the customers with information about the new version, and with the new version itself.

Table 35 The activity table for GWS4all: Release creation

Table of concepts

Concept	*Description*
Architecture	A (word) document describing where to go with the product in the next seven years.
Roadmap	A (word) document describing how to reach the goal set for the product.
Budget model	A (word) document describing the budget for the roadmap.

Table 36 The table of concept for GWS4all: Product roadmapping

Concept	*Description*
Patch	A technical solution for a defect.
Adjusted release notes	A revised version of the release notes incorporating a new patch.
Proposal version	A document describing the set of wishes suggested by the product manager for the next release.
Functional description	A document detailing per wish in a release: a functional description, an impact description, a detailed work estimate, the functional impact of that wish, the technical impact of the wish, and the training that will have to be provide to the users of the software.
Adjusted functional description	A slightly revised version of the functional

	description.
Version	The version to be supplied to the customer.
Release notes	Documentation describing the release's functionality and impact.

Table 37 The table of concept for GWS4all: Release creation

Base list of situational factors: values

Situational factor	Value
Development philosophy	Waterfall
Size of business unit team	90
Size of development team	25
Customer loyalty	High
Customer satisfaction	6
Customer variability	3%
Number of customers	330
Number of end-users	8250
Type of customers	Small / medium / large companies
Hosting demands	Customer server
Localization demand	1
Market growth	Stable
Market size	0-500
Release frequency	180
Sector	Government / non-profit
Standard dominance	High
Variability of feature requests	Medium
Defects per year: total	3000
Defects per year: serious	125
Development platform maturity	Ever changing
New requirements rate	500
Number of products	4
Product age	8
Product lifetime	4
Product size	4350
Product tolerance	High
Software Platform	UF, C++, .NET
Company policy	Low / Medium
Customer involvement	Medium
Legislation	Strict
Partner involvement	Low

Table 38 Base list of situational factors: values for GWSWS4all

Base list of situational factors: influence

Situational factor	Portfolio management	Product roadmapping	Requirements management	Release planning
Business unit characteristics				
Development philosophy	1	1	4	4
Size of business unit team	1	3	1	3
Size of development team	1	3	1	3
Customer Characteristics				
Customer loyalty	5	5	1	1
Customer satisfaction	5	5	1	1
Customer variability	5	5	1	1
Number of customers	5	5	1	1
Number of end-users	5	5	1	1
Type of customers	5	5	4	1
Market Characteristics				
Hosting demands	2	2	4	4
Localization demand	1	4	1	7
Market growth	5	5	1	1
Market size	5	5	1	1
Release frequency	7	7	3	3
Sector	1	1	1	1
Standard dominance	1	1	1	1
Variability of feature requests	4	4	5	7
Product Characteristics				
Application age	3	3	1	1
Defects per year: total	1	1	1	1
Defects per year: serious	1	1	1	1
Development platform maturity	4	4	4	4
New requirements rate	5	5	5	5
Number of products	5	5	5	5
Product lifetime	4	4	1	1
Product size	3	3	1	1
Product tolerance	1	1	1	1
Software Platform	1	1	1	1
Stakeholder involvement				
Company policy	4	4	4	4
Customer involvement	4	4	4	4
Legislation	4	4	4	4
Partner involvement	4	4	4	4

Table 39 Base list of situational factors: influence indicated by the GWS4all product manager

Case 8: PIV4all

Description

PIV**4all** is a standard application which handles the core processes of municipalities, such as referenda, elections, marriage registration, automatic registration of drivers licenses, naturalization research, and more.
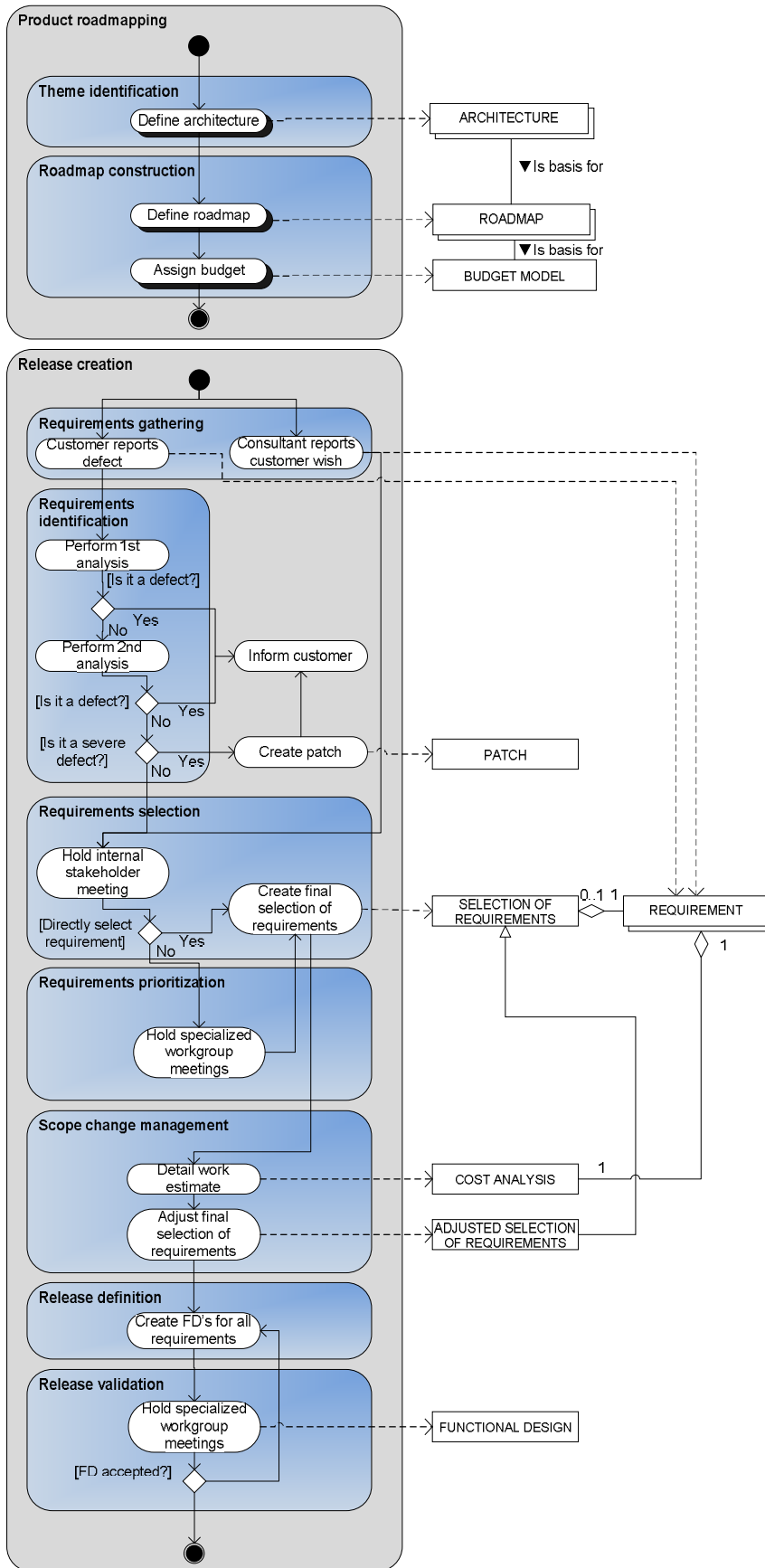
Figure 8 The PDDs for PIV4all

Activity table

Activity	Sub-Activity	Explanation
Theme identification	*Define architecture*	During a meeting a general idea (goal) is formed where to go with the product in the coming seven years.
Roadmap construction	*Define roadmap*	During this phase a roadmap is made how to achieve the goal set during the defining of the architecture.
	Assign budget	With the goal and road to that goal determined, the budget for the steps determined in the roadmap.

Table 40 The activity table for PIV4all: Product roadmapping

Activity	Sub-Activity	Explanation
Requirements gathering	*Customer reports defect*	A customer reports a defect at customer support.
	Consultant reports customer wish	The consultant registers a wish directly from a client.
Requirements identification	*Perform 1ste analysis*	An analysis is performed by a 1st line customer support employee, to determine whether the report concerns a real defect or a question.
	Perform 2nd analysis	When the 1st line customer support cannot determine what the problem is, the 2nd line tries to find out with a more technical and in-depth investigation. If they determine that it is a defect than it submitted to be fixed with a release, if it is a serious defect than it is fixed immediately. If it is determined that it isn't a defect but in fact a customer wish, than it is submitted for review.
Requirements selection	*Hold internal stakeholder meeting*	The newly submitted wishes are reviewed in the monthly meeting between product management and software development. If the wish is clear and accepted than it is send directly to the final selection stage. If it is unclear it is send to the specialized workgroup.
	Create final selection	A final selection of requirements is made for the next release, these requirements can come from customers, consultants, but also directly from new legislation which

		has to be implemented. The product roadmap is used as guide in selecting requirements.
Requirements prioritization	*Hold specialized workgroup meetings*	Unclear wishes are worked out in further detail in specialized meetings between customers and internal stakeholders who assign a priority to them.
Scope change management	*Detail work estimate*	A detailed estimate of the amount of time required is made.
	Adjust final selection of requirements	The final selection of requirements is adjusted (if needed) based on the detailed work estimate.
Release definition	*Create FD's for all requirements*	A functional design is made for every requirement.
Release validation	*Hold specialized workgroup meetings*	Specialized workgroups (aimed at a specific area of attention within the product) assess the FD's, and can send them back to be redefined.

Table 41 The activity table for PIV4all: Release creation

Table of concepts

Concept	Description
Architecture	A (word) document describing where to go with the product in the next seven years.
Roadmap	A (word) document describing how to reach the goal set for the product.
Budget model	A (word) document describing the budget for the roadmap.

Table 42 The table of concept for PIV4all: Product roadmapping

Concept	Description
Patch	A quick technical fix for a serious defect.
Selection of requirements	The list of requirements selected for the next release.
Requirement	A customer wish for new or modified functionalities.
Cost analysis	A detailed analysis of the development cost and impact of a requirement.
Adjusted selection of requirements	The final list of requirements selected for the next release.

Table 43 The table of concept for PIV4all: Release creation

Base list of situational factors: values

Situational factor	Value
Development philosophy	Iterative
Size of business unit team	70
Size of development team	30
Customer loyalty	High
Customer satisfaction	7.8
Customer variability	1
Number of customers	204
Number of end-users	60000
Type of customers	Small / Medium
Hosting demands	Central
Localization demand	2
Market growth	Stable
Market size	0-500
Release frequency	182.25
Sector	Public sector
Standard dominance	High demand
Variability of feature requests	Medium
Defects per year: total	?
Defects per year: serious	0
Development platform maturity	Fully developed
New requirements rate	?
Number of products	0
Product age	7
Product lifetime	5
Product size	3000
Product tolerance	Low
Software Platform	Oracle / OracleForms / .NET
Company policy	High
Customer involvement	High
Legislation	Strict
Partner involvement	Low

Table 44 Base list of situational factors: values for PIV4all

Base list of situational factors: influence

Situational factor	Portfolio management	Product roadmapping	Requirements management	Release planning
Business unit characteristics				
Development philosophy	1	1	3	3
Size of business unit team	1	1	1	5
Size of development team	1	1	1	5
Customer Characteristics				
Customer loyalty	5	5	3	1
Customer satisfaction	4	4	4	3
Customer variability	1	1	3	3
Number of customers	3	3	1	1
Number of end-users	1	1	1	1
Type of customers	3	3	1	1
Market Characteristics				
Hosting demands	1	1	1	1
Localization demand	1	1	1	1
Market growth	1	1	1	1
Market size	1	1	1	1
Release frequency	1	1	1	1
Sector	4	4	1	1
Standard dominance	1	3	3	1
Variability of feature requests	1	1	1	1
Product Characteristics				
Application age	2	2	2	4
Defects per year: total	1	1	1	1
Defects per year: serious	1	1	1	1
Development platform maturity	1	5	5	5
New requirements rate	1	1	1	1
Number of products	1	1	1	1
Product lifetime	2	2	2	4
Product size	2	2	4	4
Product tolerance	1	1	1	1
Software Platform	1	1	3	3
Stakeholder involvement				
Company policy	1	1	1	1
Customer involvement	2	2	5	5
Legislation	1	1	1	6
Partner involvement	1	1	1	1

Table 45 Base list of situational factors: influence indicated by the PIV4all product manager

Case 9: Key2financiën

Description

Key2Financiën (which translates to key2finance in English) is an information system for financial management and projects and is developed to be a core application for decentralized government bodies (municipalities, states, water governance agencies, police, cooperation alliances, and shared service centers).

The product can easily be set up and structured for input, process, and output steering. It is also guaranteed to be compatible with your current applications. Key2Financiën has the following spear points:

- It complies with specific legislations;
- It gives the customer extensive freedom to align it with diverse organizational models;
- And offers simple rapports for controlling bodies.

Key2Financiën is modular and has a short implementation time, and offers a user-friendly interface.
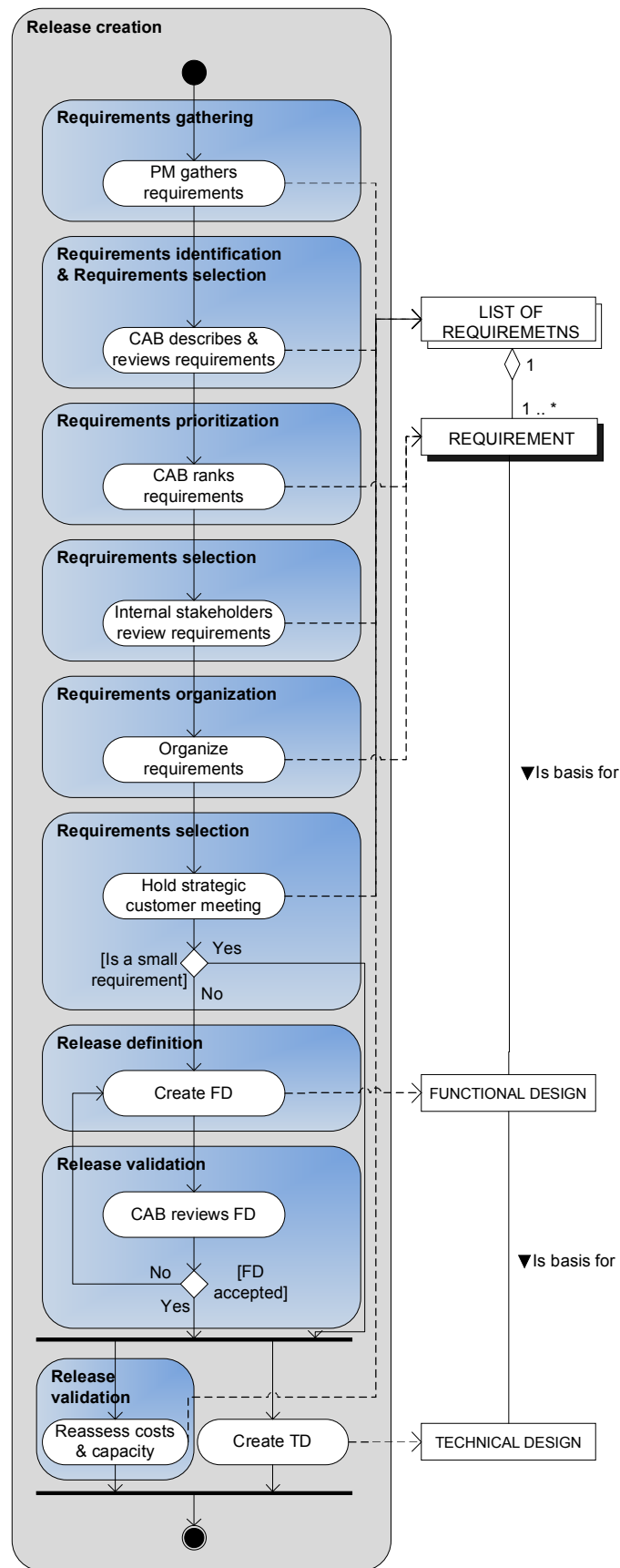
Figure 9 The PDD for Key2financiën

Activity table

Activity	Sub-Activity	Explanation
Requirements gathering	*PM gathers requirements*	The product manager gathers all the requerements from various sources (new/changed legislation, prospects, customer requests, consultants).
Requirements identification & Requirements selection	*CAB describes & reviews requirements*	The CAB (Change Advisory Board) works out a description of the intention of the requirement and then looks whether this requirement fits within the product or should be rejected.
Requirements prioritization	*CAB ranks requirements*	The CAB assigns a MOSCOW rating to the requirements after having made a rough estimate of the impact / costs of the requirement.
Requirements selection	*Internal stakeholders review requirements*	Representatives of all internal parties involved in the development of the product judge the requirements. Requirements can be rejected by the stakeholders.
Requirements organization	*Organize requirements*	The requirements are divided based on where they will be implemented. So they will be divided into new options and other parts of the product.
Requirements selection	*Hold strategic customer session*	The plans are presented to the customers who can also make a final selection of the list of requirements. Small requirements will directly be send to development, others follow the normal process.
Release definition	*Create FD*	Create functional design for the requirements.
Release validation	*CAB reviews FD*	The CAB reviews the functional design, and can send it back to be refined / changed.
	Reassesses costs & capacity	An estimate is made of what fits within the next release now that the final list of ranked and described requirements is available.
Create TD		A technical design is made for the requirement.

Table 46 The activity table for Key2financiën

Table of concepts

Concept	Description
List of requirements	The list of requirements selected for the next release.
Requirement	A requirement describing a wish for new or changed functionality.
Functional design	A document describing the functionalities a requirement involves.
Technical design	A document describing the technical changes which are required to implement the requirement.

Table 47 The table of concept for Key2financiën

Base list of situational factors: values

Situational factor	Value
Development philosophy	Mixed
Size of business unit team	39
Size of development team	15
Customer loyalty	High
Customer satisfaction	7
Customer variability	5%
Number of customers	203
Number of end-users	?
Type of customers	All companies
Hosting demands	All
Localization demand	1
Market growth	Stable
Market size	0-500
Release frequency	160
Sector	Public
Standard dominance	High
Variability of feature requests	Low
Defects per year: total	1040
Defects per year: serious	270
Development platform maturity	Fully developed
New requirements rate	30
Number of products	7
Product age	11
Product lifetime	4
Product size	Large
Product tolerance	Medium
Software Platform	Oracle forms / .net
Company policy	Medium
Customer involvement	High
Legislation	Strict
Partner involvement	Medium

Table 48 Base list of situational factors: values for Key2financiën

Base list of situational factors: influence

Situational factor	Portfolio management	Product roadmapping	Requirements management	Release planning
Business unit characteristics				
Development philosophy	1	1	1	1
Size of business unit team	1	1	1	1
Size of development team	1	1	1	1
Customer Characteristics				
Customer loyalty	2	2	4	4
Customer satisfaction	1	1	3	3
Customer variability	1	1	1	1
Number of customers	1	1	1	1
Number of end-users	1	1	1	1
Type of customers	2	2	3	3
Market Characteristics				
Hosting demands	2	2	2	5
Localization demand	1	1	1	1
Market growth	1	1	1	1
Market size	1	1	1	1
Release frequency	1	1	3	5
Sector	7	7	7	7
Standard dominance	1	1	1	1
Variability of feature requests	1	1	1	1
Product Characteristics				
Application age	2	5	1	1
Defects per year: total	1	1	4	4
Defects per year: serious	1	1	4	4
Development platform maturity	1	1	1	1
New requirements rate	1	1	1	1
Number of products	1	1	1	1
Product lifetime	3	3	7	7
Product size	1	1	1	3
Product tolerance	1	1	1	3
Software Platform	1	1	1	1
Stakeholder involvement				
Company policy	2	2	3	3
Customer involvement	2	2	2	2
Legislation	2	2	4	4
Partner involvement	5	5	1	3

Table 49 Base list of situational factors: influence indicated by the Key2financiën product manager

Case 10: Bestmate

Description

Bestmate is an application which manages all commercial, logistical, and financial processes within a company. Many types of customers are already using Bestmate, among which: trade organizations, production companies with complex logistics, publishers, fundraisers, and sports bonds.

The following functionalities are offered:

- Financial: Supporting your complete financial department.
- Customer relationship management
- Procurement: supporting your complete procurement processes.
- Storage: Managing your storage facilities, including interactive functionalities with external distributors
- Sales: supporting your complete sales processes.
- Project management: project registration including costs calculations
- Marketing: exporting of statistics to various formats
- Management: reporting on various levels, data mining, warehousing.

Bestmate is no longer actively seeking new customers, they are supporting the current product and still produce new customer specific software but new customers are suggested to use another Centric product which is newer.
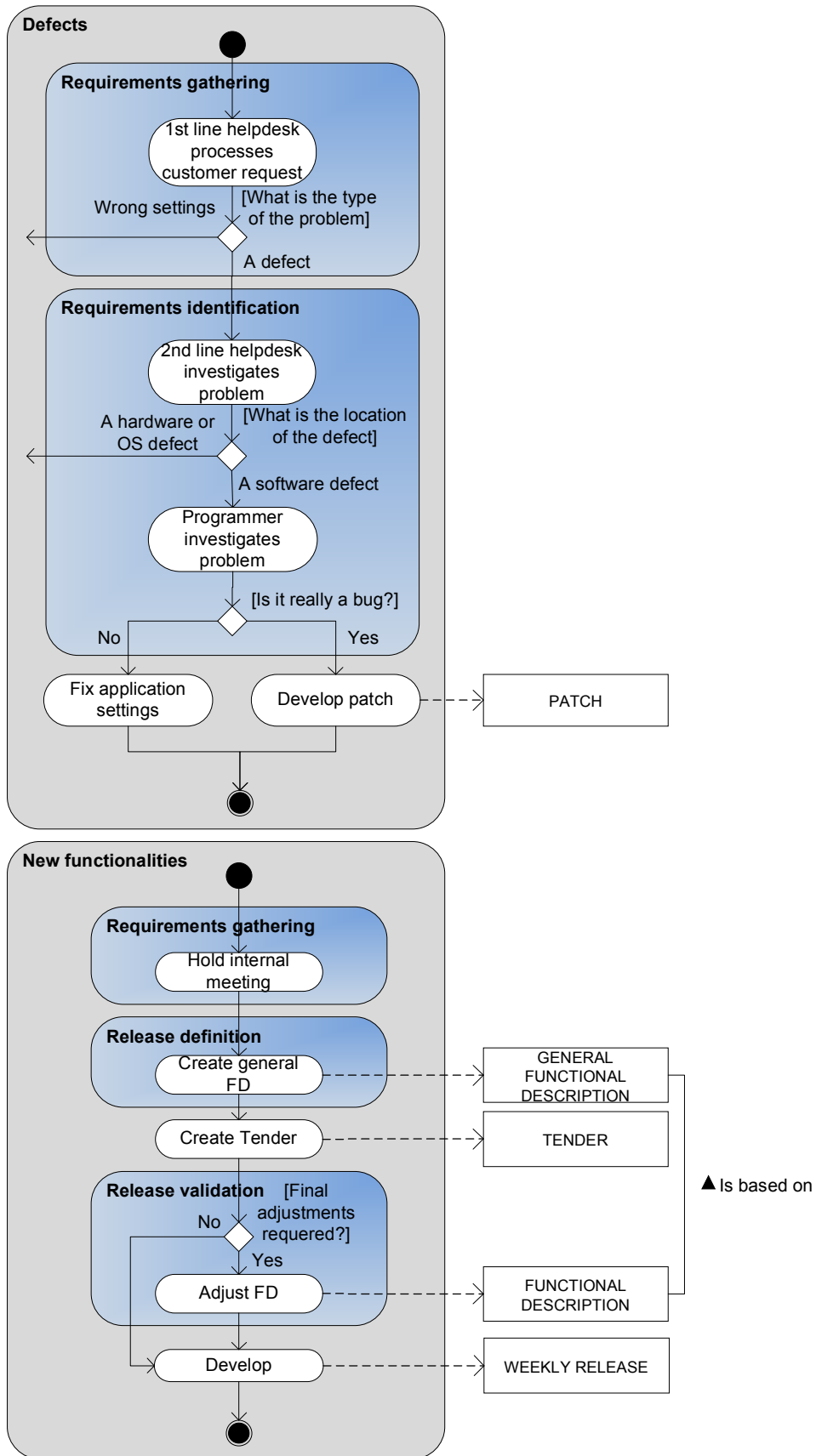
Figure 10 The PDDs for Bestmate

Activity table

Activity	Sub-Activity	Explanation
Requirements gathering	*1st line helpdesk processes customer request*	The first line helpdesk determines whether the customer has found a real defect or simply has the wrong settings. A real defect is send to the next phase, with wrong settings the customer is instructed how to fix it.
Requirement identification	*2nd line helpdesk investigates problem*	The second line helpdesk determines whether the defect lies in the application software, hardware, or operating system (OS). Application software defects are send to the next phase, the other problems are send to a support division who fixes them.
	Programmer investigates problem	A programmer investigates the defect and can determine that is was a settings problem after all, or that is a real problem.
Fix application settings		If it turned out to be a complex settings problem than a consultant will visit the customer to fix it.
Develop patch		A patch is developed for the application defect.

<div align="center">Table 50 The activity table for Bestmate: Defects</div>

Activity	Sub-Activity	Explanation
Requirements gathering	*Hold internal meeting*	An internal meeting is held with consultants, account managers, and the product manger to discuss what requirements will be selected for the product. These requirements come from within internal sources, legislation, and customer specific requests.
Release definition	*Create general FD*	Create a global functional description of the requirement.
Create tender		Create a tender, describing the costs involved in creating the functionality.
Release validation	*Adjust FD*	Adjust the functional description based on customer remarks.
Develop		Develop the next release.

<div align="center">Table 51 The activity table for Bestmate: New functionalities</div>

Table of concepts

Concept	Description
PATCH	A software fix for a defect in the application

<div align="center">

Table 52 The table of concept for Bestmate: Defects

</div>

Concept	Description
GENERAL FUNCTIONAL DESCRIPTION	A global functional description of a requirement.
TENDER	The tender describes the costs involved in creating the functionality to a customer.
FUNCTIONAL DESCRIPTION	A detailed functional description of a requirement.
WEEKLY RELEASE	A release that is presented to customers on a weekly basis.

<div align="center">

Table 53 The table of concept for Bestmate: New functionalities

</div>

Base list of situational factors: values

Situational factor	Value
Development philosophy	Waterfall
Size of business unit team	17
Size of development team	8
Customer loyalty	High
Customer satisfaction	7.5
Customer variability	90
Number of customers	120
Number of end-users	1800
Type of customers	Small companies / Medium companies
Hosting demands	Both
Localization demand	3
Market growth	Stable
Market size	3500+
Release frequency	7
Sector	Wholesales / Publishers / Non-profit
Standard dominance	Low
Variability of feature requests	Low
Defects per year: total	Stable
Defects per year: serious	1
Development platform maturity	Fully developed
New requirements rate	300
Number of products	1
Product age	15
Product lifetime	10
Product size	3000
Product tolerance	Low
Software Platform	AS400, OS1
Company policy	Low
Customer involvement	Low
Legislation	Loose
Partner involvement	Low

Table 54 Base list of situational factors: values for Bestmate

Base list of situational factors: influence

Situational factor	Portfolio management	Product roadmapping	Requirements management	Release planning
Business unit characteristics				
Development philosophy	1	1	1	1
Size of business unit team	1	1	1	1
Size of development team	1	1	1	1
Customer Characteristics				
Customer loyalty	1	1	1	1
Customer satisfaction	3	3	3	3
Customer variability	1	1	1	1
Number of customers	3	3	4	4
Number of end-users	1	1	1	1
Type of customers	4	4	4	4
Market Characteristics				
Hosting demands	1	1	1	1
Localization demand	1	1	1	1
Market growth	4	4	3	3
Market size	1	1	1	1
Release frequency	1	1	1	1
Sector	4	4	4	4
Standard dominance	1	1	1	1
Variability of feature requests	3	3	6	6
Product Characteristics				
Application age	7	7	7	7
Defects per year: total	1	1	1	1
Defects per year: serious	1	1	1	1
Development platform maturity	3	3	3	3
New requirements rate	3	3	6	6
Number of products	1	1	1	1
Product lifetime	7	7	7	7
Product size	1	1	1	1
Product tolerance	1	1	1	1
Software Platform	1	1	1	1
Stakeholder involvement				
Company policy	1	1	1	1
Customer involvement	3	3	3	3
Legislation	1	1	4	4
Partner involvement	1	1	1	1

Table 55 Base list of situational factors: influence indicated by the Bestmate product manager

Case 11: PIMS@all

Description

PIMS@all is an employee information management system which handles everything from basic employee address information, track record, function history, to salary and budgeting. The system is coupled with salary service systems.
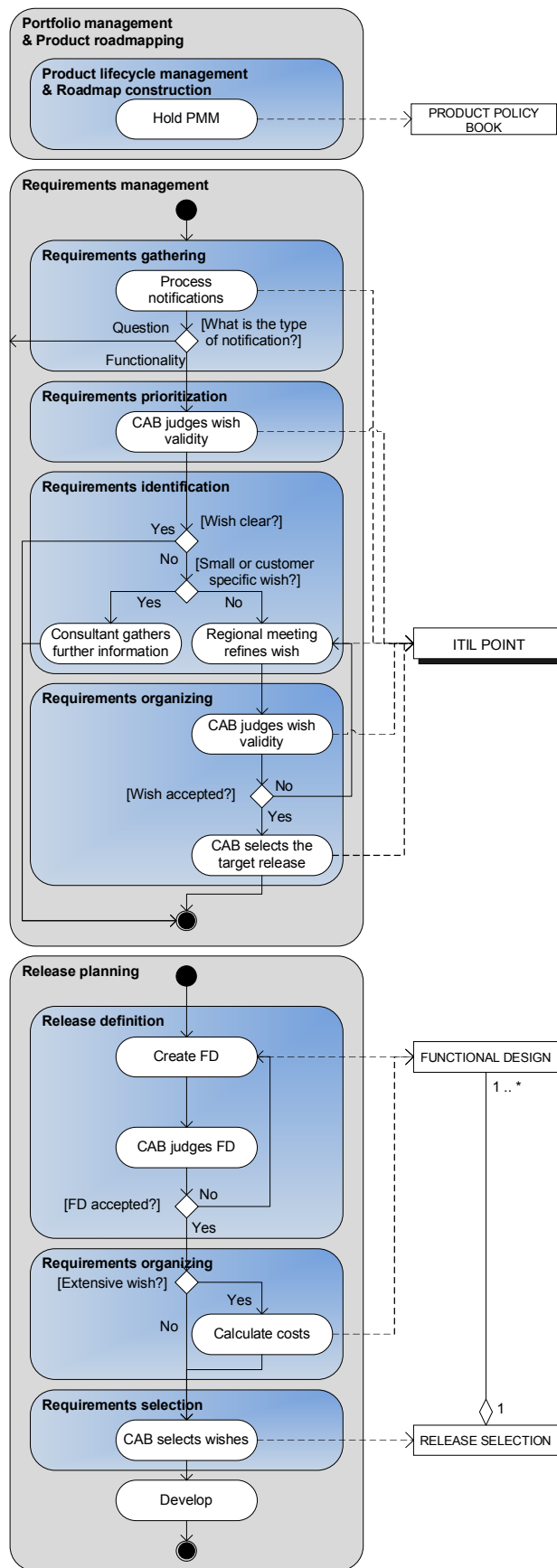
Figure 11 The PDDs for PIMS@all

Activity table

Activity	Sub-Activity	Explanation
Product lifecycle management & Roadmap construction	*Hold PMM*	A product management meeting is held eight times per year. In these meetings the product lifecycle is determined once a year, and the general direction in which the product is heading is determined.

Table 56 The activity table for PIMS@all: Portfolio management & Product roadmapping

Activity	Sub-Activity	Explanation
Requirements gathering	*Process notifications*	Customer notifications are processed. The questions are answered and wishes are send to be evaluated.
Requirements prioritization	*CAB judges wish validity*	The CAB (Change Advisory Board) judges whether a wish fits within the application and well reject or accept the wish. Accepted wishes get assigned a MOSCOW rating.
Requirements identification	*Consultant gathers further information*	If a small wish or customer specific wish requires further information the consultant visits the specific customer.
	Regional meeting refines wish	A regional meeting with representatives of customers is held to check whether they want the wish and how it should be defined exactly. The customers also assign a MOSCOW rating to the wish.
Requirement organizing	*CAB judges wish validity*	The CAB (Change Advisory Board) judges whether a wish fits within the application and well reject or accept the wish.
	CAB selects the target release	The CAB selects the release in which the wish fits best based on the theme of the release.

Table 57 The activity table for PIMS@all: Requirements management

Activity	Sub-Activity	Explanation
Release definition	*Create FD*	Create a functional description for a wish.
	CAB judges FD	The CAB reviews the FD for correctness and completeness. If it is not in order the FD has to be refined.
	Calculate costs	The costs for creating the wish are calculated if it is a large wish.

Requirements selection	*CAB selects wishes*	The CAB selects the wishes to be implemented in releases.
Develop		The release is build.

Table of concepts

Concept	Description
PRODUCT POLICY BOOK	A book containing a description of the ideas where the product will go in the following year.

Concept	Description
ITIL POINT	A registered wish in the ITIL system, which records the wishes description, status, and all other attributes.

Concept	Description
FUNCTIONAL DESIGN	A document describing the functionalities a requirement involves.
RELEASE DEFINITION	A bundled group of functional designs.

Base list of situational factors: values

Situational factor	Value
Development philosophy	Iterative
Size of business unit team	8
Size of development team	4
Customer loyalty	Medium - high
Customer satisfaction	7
Customer variability	20
Number of customers	?
Number of end-users	?
Type of customers	Medium – Large companies
Hosting demands	Customer server
Localization demand	1
Market growth	Stable
Market size	0-500
Release frequency	120
Sector	Non-profit
Standard dominance	Medium
Variability of feature requests	Low
Defects per year: total	?
Defects per year: serious	?
Development platform maturity	New
New requirements rate	?
Number of products	4
Product age	5
Product lifetime	1
Product size	?
Product tolerance	Low
Software Platform	Delphi / .net
Company policy	Medium – High
Customer involvement	High
Legislation	Strict
Partner involvement	Medium

Table 62 Base list of situational factors: values for PIMS@all

Base list of situational factors: influence

Situational factor	Portfolio management	Product roadmapping	Requirements management	Release planning
Business unit characteristics				
Development philosophy	4	4	4	4
Size of business unit team	3	3	4	6
Size of development team	3	3	3	3
Customer Characteristics				
Customer loyalty	6	6	4	4
Customer satisfaction	6	6	4	4
Customer variability	6	4	4	5
Number of customers	1	1	1	1
Number of end-users	1	1	1	1
Type of customers	6	3	3	3
Market Characteristics				
Hosting demands	4	4	2	2
Localization demand	1	1	1	1
Market growth	5	5	2	2
Market size	5	5	2	2
Release frequency	1	1	1	1
Sector	5	5	5	5
Standard dominance	1	1	1	1
Variability of feature requests	1	1	1	1
Product Characteristics				
Application age	?	?	?	?
Defects per year: total	2	2	2	2
Defects per year: serious	4	4	4	4
Development platform maturity	7	7	7	7
New requirements rate	3	3	3	3
Number of products	4	4	3	3
Product lifetime	5	5	5	5
Product size	4	4	2	2
Product tolerance	3	3	2	2
Software Platform	5	5	2	2
Stakeholder involvement				
Company policy	6	6	2	2
Customer involvement	5	5	2	2
Legislation	2	2	4	4
Partner involvement	3	3	1	1

Table 63 Base list of situational factors: influence indicated by the PIMS@all product manager

Case 12: Plan&Go

Description

Plan&Go! is a TMS (Transport Management System) with which administrative and logistical processes can be automated for logistical service providers. Plan&Go! strong points are:

- It is fully integrated standard software
- Information can be viewed at a very detailed level
- Very extensive functionalities
- Coupling with market standards
- Open import and export structure
- Extensive management information
- Tightly managed release procedures
- An active customers association
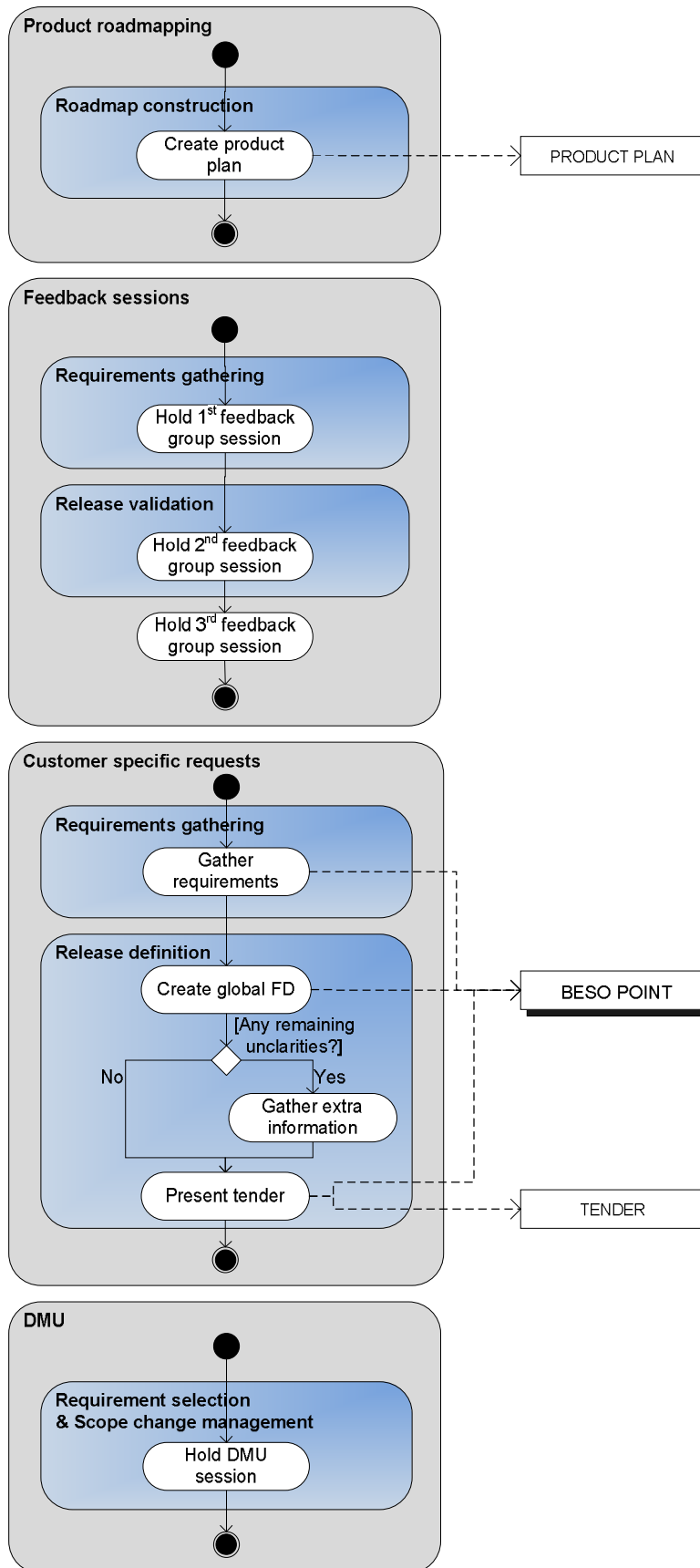- Proven track record with over 200 satisfied customers

Figure 12 The PDDs for Plan&Go

Activity table

Activity	Sub-Activity	Explanation
Roadmap construction	*Create product plan*	A document is created describing the general direction the product will be going in in the coming years.

Activity	Sub-Activity	Explanation
Requirements gathering	*Hold 1st feedback group session*	A group of 10 customers representing all customers provides new requirements they would like to see in the next release.
Release validation	*Hold 2nd feedback group session*	An idea of how to implement the suggested requirements is presented to the customer representatives.
	Hold 3rd feedback group session	The suggested requirements are evaluated after they have been released.

Activity	Sub-Activity	Explanation
Requirements gathering	*Gather requirements*	Requirements are gathered by consultants, the helpdesk, and by sales who receive request for information of possible new customers.
Release definition	*Create global FD*	A global functional description is made for each requirement.
	Gather extra information	Extra information is gathered about the requirement if the information that was gathered in the first phase was insufficient.
	Present tender	A tender is created containing the costs and a planning for the requirement.

Activity	Sub-Activity	Explanation
Requirements selection & Scope change management	*Hold DMU session*	A monthly meeting of the DMU (Decision Making Unit) consisting of the product manager, business unit manager, and consultants. The progress is monitored and discussed during this meeting, and if needed the planning is adjusted. This meeting is also used to plan what will be build in the next release, this can be both bug fixes and general development.

Table of concepts

Concept	Description
PRODUCT PLAN	A document describing the general direction the product is heading in the coming years.

BESO POINT	BESO is an administrative system which registers all requests for new or changed functionalities and bugs. The system manages the entire lifetime of the request and keeps a detailed record of its status, costs, planning, etc..
TENDER	A description of the costs involved in creating customer specific functionality, the tender also has a delivery date.

Base list of situational factors: values

Situational factor	Value
Development philosophy	?
Size of business unit team	20
Size of development team	4
Customer loyalty	High
Customer satisfaction	6.5
Customer variability	0
Number of customers	150
Number of end-users	1250
Type of customers	Medium
Hosting demands	Customer server
Localization demand	2
Market growth	Stable
Market size	500-1500
Release frequency	120
Sector	Logistics
Standard dominance	Low
Variability of feature requests	Medium
Defects per year: total	150
Defects per year: serious	5
Development platform maturity	Ever changing
New requirements rate	500
Number of products	3
Product age	12
Product lifetime	10
Product size	7100
Product tolerance	Low
Software Platform	Magic eDeveloper v10
Company policy	Low
Customer involvement	Medium
Legislation	Loose
Partner involvement	Low

Table 70 Base list of situational factors: values for Plan&Go

Base list of situational factors: influence

Situational factor	Portfolio management	Product roadmapping	Requirements management	Release planning
Business unit characteristics				
Development philosophy	1	1	2	4
Size of business unit team	4	2	5	2
Size of development team	3	3	5	5
Customer Characteristics				
Customer loyalty	7	6	2	5
Customer satisfaction	6	6	5	3
Customer variability	6	6	6	6
Number of customers	6	6	3	2
Number of end-users	6	6	3	2
Type of customers	4	6	5	5
Market Characteristics				
Hosting demands	1	1	1	1
Localization demand	6	3	4	5
Market growth	7	7	2	4
Market size	6	6	1	1
Release frequency	1	1	2	6
Sector	1	1	1	1
Standard dominance	5	4	3	5
Variability of feature requests	6	5	2	7
Product Characteristics				
Application age	6	2	1	2
Defects per year: total	4	1	1	5
Defects per year: serious	4	1	1	6
Development platform maturity	6	5	5	6
New requirements rate	6	6	5	5
Number of products	7	4	1	2
Product lifetime	5	3	1	2
Product size	6	4	5	4
Product tolerance	2	4	6	6
Software Platform	1	1	2	2
Stakeholder involvement				
Company policy	7	5	7	7
Customer involvement	3	6	5	5
Legislation	2	3	2	4
Partner involvement	5	4	1	3

Table 71 Base list of situational factors: influence indicated by the Plan&Go product manager

Case 13: Locus WMS

Locus WMS is a warehouse management system that manages all your warehouse operations real-time. It is used in many sectors such as production companies, logistical service provides, retail, whole sales, and post order / internet shopping.

Locus manages the following aspects:

- Warehousing: managing warehouse processes;
- Resources: managing the resources available to implement warehousing;
- Storage management: optimally use the space in warehouses;
- Supply management: manage the supplies in warehouses;
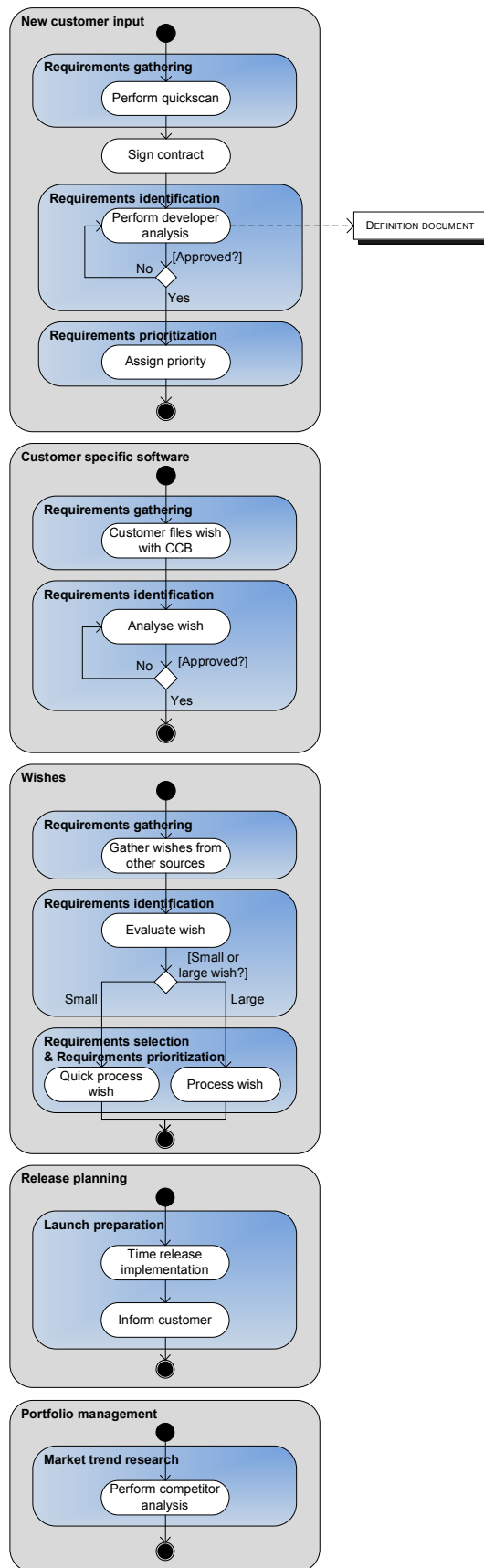- Management information: get detailed information on your operations.

Figure 13 The PDDs for Locus WMS

Activity table

Activity	Sub-Activity	Explanation
Requirements gathering	*Perform quick scan*	A quick scan is performed at potential new customers to see what new functionalities are required for them to be able to work with the application.
Sign contract		The customer signs a contract if it feasible to implement the changes.
Requirements identification	*Perform developer analysis*	A developer creates a definition document for the requirement, and calculates the costs involved in the development of the requirement. The customer has to accept the definition, else the developer has to recreate the definition.
Requirements prioritization	*Assign priority*	Each requirement gets assigned a priority indicating whether it is crucial for the new customer to be able to work or not.

<div align="center">**Table 72 The activity table for Locus WMS: New customers**</div>

Activity	Sub-Activity	Explanation
Requirements gathering	*Customers files wish with CCB*	When an existing customer wants new functionality he submits the wish with the CCB (Change Control Board).
Requirements identification	*Analyze wish*	An analysis is made of the wish describing its functionalities and costs. This analysis has to be approved by the customer.

<div align="center">**Table 73 The activity table for Locus WMS: Customer specific software**</div>

Activity	Sub-Activity	Explanation
Requirements gathering	*Gather wishes from other sources*	Wishes are gathered from internal sources, a yearly competitor product research, and information days for customers.
Requirements identification	*Evaluate wish*	Check whether the wish is a general wish or customer specific functionality, and determine the costs of creating the functionality.
Requirements selection & Requirements prioritization	*Quick process wish*	If the functionality is small than the product manager (together with a product architect) judges whether to implement the wish and with what priority.
	Process wish	If the functionality is large than the wish is to submitted with the development board who decide

		whether to implement the functionality and assign a priority to it.

Table 74 The activity table for Locus WMS: Wishes

Activity	Sub-Activity	Explanation
Launch preparation	*Time release implementation*	Each the implementation of each release is timed to best fit within the customers planning.
	Inform customers	A consultant visits each customer personally to explain what the release adds to the application.

Table 75 The activity table for Locus WMS: Release planning

Activity	Sub-Activity	Explanation
Market trend research	*Perform competitor analysis*	The products of competitors are analyzed to look if what they offer is useful within Locus WMS.

Table 76 The activity table for Locus WMS: Portfolio management

Table of concepts

Concept	Description
DEFINITION DOCUMENT	A document describing a requirements, including its costs.

Table 77 The table of concept for Locus WMS: New customers

Base list of situational factors: values

Situational factor	Value
Development philosophy	Waterfall
Size of business unit team	40
Size of development team	11
Customer loyalty	High
Customer satisfaction	8
Customer variability	100
Number of customers	40
Number of end-users	2000
Type of customers	Medium – Large companies
Hosting demands	90
Localization demand	4
Market growth	Stable
Market size	360
Release frequency	Warehousing
Sector	High
Standard dominance	Medium
Variability of feature requests	12
Defects per year: total	?
Defects per year: serious	?
Development platform maturity	Fully developed
New requirements rate	3
Number of products	5-10
Product age	?
Product lifetime	High
Product size	?
Product tolerance	High
Software Platform	?
Company policy	Low
Customer involvement	Medium
Legislation	Loose
Partner involvement	Low

Table 78 Base list of situational factors: values for Locus WMS

Base list of situational factors: influence

Situational factor	Portfolio management	Product roadmapping	Requirements management	Release planning
Business unit characteristics				
Development philosophy	3	1	1	1
Size of business unit team	1	1	3	3
Size of development team	1	1	1	1
Customer Characteristics				
Customer loyalty	3	3	1	1
Customer satisfaction	1	1	3	3
Customer variability	1	1	4	4
Number of customers	4	4	1	1
Number of end-users	1	1	1	1
Type of customers	1	1	1	1
Market Characteristics				
Hosting demands	1	1	1	1
Localization demand	1	1	1	1
Market growth	1	1	1	1
Market size	1	1	1	1
Release frequency	1	1	1	1
Sector	1	1	1	1
Standard dominance	1	1	1	1
Variability of feature requests	1	3	1	1
Product Characteristics				
Application age	1	1	5	5
Defects per year: total	1	1	5	5
Defects per year: serious	1	1	5	5
Development platform maturity	1	1	1	1
New requirements rate	1	1	1	1
Number of products	1	1	2	2
Product lifetime	6	6	1	1
Product size	6	6	1	1
Product tolerance	1	1	4	4
Software Platform	1	1	1	1
Stakeholder involvement				
Company policy	4	4	4	4
Customer involvement	3	3	3	3
Legislation	1	1	1	1
Partner involvement	1	1	1	1

Table 79 Base list of situational factors: influence indicated by the Locus WMS product manager

Case 14: GHS4all

GHS4all is a system which handles all tasks concerning taxes. It offers an environment suited for municipalities, water governance agencies, and shared service centers.

Additional functionality is offered to fully integrate the system with workflowmanagement systems, and with other municipal systems.
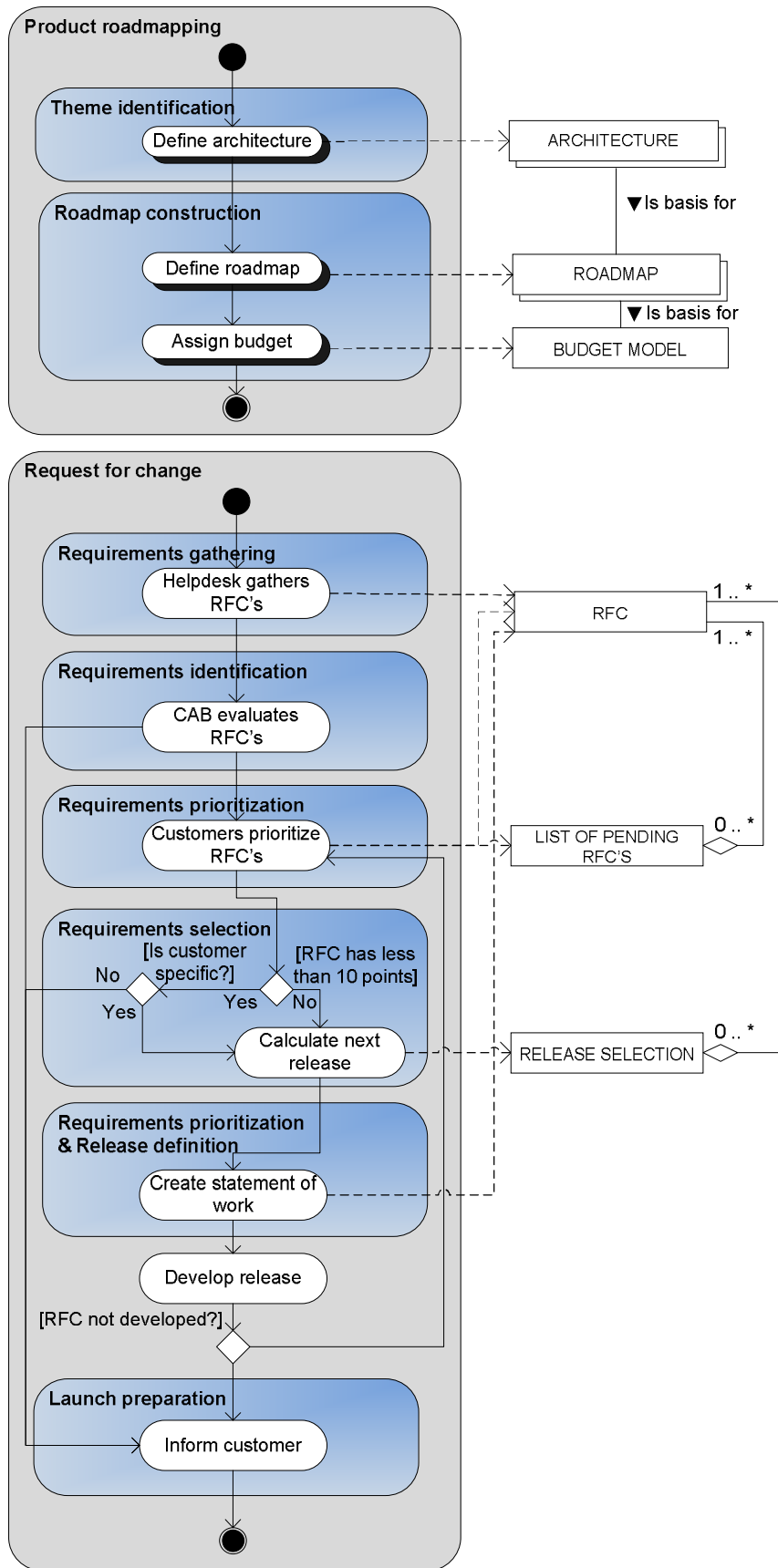
Figure 14 The PDDs for GHS4all

Activity table

Activity	Sub-Activity	Explanation
Theme identification	*Define architecture*	During a meeting a general idea (goal) is formed where to go with the product in the coming seven years.
Roadmap construction	*Define roadmap*	During this phase a roadmap is made how to achieve the goal set during the defining of the architecture.
	Assign budget	With the goal and road to that goal determined, the budget for the steps determined in the roadmap.

Table 80 The activity table for GHS4all: Product roadmapping

Activity	Sub-Activity	Explanation
Requirements gathering	*Helpdesk gathers RFCs*	The helpdesk gathers all RFCs (Request for Change), answers questions, and reports bugs.
Requirements identification	*CAB evaluates RFCs*	The CAB (Change Advisory Board) evaluates all new RFCs during this weekly meeting. The product manager leads this meeting between the product manager, a consultant, and a software developer. A global impact of (costs of) the change is determined. RFCs are not rejected or accepted in this phase.
Requirements prioritization	*Customers prioritize RFCs*	All customers are asked (via a e-mail) to rate all gathered RFCs on a biyearly basis. They can a assign a fixed number of points to a limited number of RFCs.
Requirements selection	*Calculate next release*	All RFCs which have been assigned less than 10 points when all ratings have been accumulated will be rejected permanently. A customer can indicate that they want this developed as customer specific software for which they will pay. The best possible selection of requirements will then be calculated for the next release.
Requirements prioritization & Release definition	*Create statement of work*	A statement of work is created which is an order to start building the selected features. Every selected RFC is assigned an additional MOSCOW rating, indicating which RFC should be

		developed first. This makes sure the important RFC are always developed when not all RFCs could be developed within the time and budget of the release.
Develop release		The release is build.
Launch preparation	*Inform customer*	The customers are informed of the RFC which are included in the next release, and which of the RFCs which they have submitted are rejected.

<div align="center">

Table 81 The activity table for GHS4all: Release creation

</div>

Table of concepts

Concept	*Description*
Architecture	A (word) document describing where to go with the product in the next seven years.
Roadmap	A (word) document describing how to reach the goal set for the product.
Budget model	A (word) document describing the budget for the roadmap.

Table 82 The table of concept for PIV4all: Product roadmapping

Concept	*Description*
RFC	A request for change, a formal request to change or add a functionality to the application.
LIST OF PENDING RFCs	A sorted list of all RFCs as prioritize by the customers.
RELEASE SELECTION	A list with all RFCs selected to be build for a specific release.

<div align="center">

Table 83 The table of concept for GHS4all: Release creation

</div>

Base list of situational factors: values

Situational factor	Value
Development philosophy	Iterative
Size of business unit team	41.8
Size of development team	26.1
Customer loyalty	High
Customer satisfaction	6.7
Customer variability	25
Number of customers	41
Number of end-users	1000
Type of customers	Medium
Hosting demands	Customer server
Localization demand	2
Market growth	Growing
Market size	0-500
Release frequency	180
Sector	Government
Standard dominance	Medium / high
Variability of feature requests	High
Defects per year: total	275
Defects per year: serious	18
Development platform maturity	Ever changing
New requirements rate	150
Number of products	7
Product age	11
Product lifetime	10
Product size	2500
Product tolerance	High
Software Platform	Oracle, SQL
Company policy	Medium
Customer involvement	Medium / High
Legislation	Strict
Partner involvement	Low / Medium

Table 84 Base list of situational factors: values for GHS4all

Base list of situational factors: influence

Situational factor	Portfolio management	Product roadmapping	Requirements management	Release planning
Business unit characteristics				
Development philosophy	1	1	2	3
Size of business unit team	2	4	6	6
Size of development team	2	4	6	6
Customer Characteristics				
Customer loyalty	2	2	3	3
Customer satisfaction	4	5	5	5
Customer variability	3	5	5	1
Number of customers	2	2	3	1
Number of end-users	1	1	1	1
Type of customers	1	5	6	1
Market Characteristics				
Hosting demands	1	1	2	1
Localization demand	4	5	4	2
Market growth	4	4	1	1
Market size	1	1	1	1
Release frequency	1	2	6	6
Sector	4	4	4	4
Standard dominance	1	1	4	4
Variability of feature requests	1	1	1	1
Product Characteristics				
Application age	4	4	6	6
Defects per year: total	2	1	2	1
Defects per year: serious	2	1	2	1
Development platform maturity	3	3	3	3
New requirements rate	3	4	4	4
Number of products	4	4	2	3
Product lifetime	5	5	5	5
Product size	1	1	6	6
Product tolerance	3	3	5	5
Software Platform	3	3	1	1
Stakeholder involvement				
Company policy	3	4	2	2
Customer involvement	2	2	2	2
Legislation	1	1	1	1
Partner involvement	6	6	5	5

Table 85 Base list of situational factors: influence indicated by the GHS4all product manager

Situational factor	Description	Unit
Business unit characteristics		
Development philosophy	An indicator showing what category of development philosophy the business unit follows. E.g. SCRUM, which is agile.	Agile / Iterative / Waterfall
Size of business unit team	An indicator of the total number of employees working at the business unit, expressed in FTE's (full-time equivalent). An FTE of 1.0 means that the person is equivalent to a full-time worker, while an FTE of 0.5 signals that the worker is only half-time.	Accumulated FTE of all business unit employees
Size of development team	An indicator of the total number of developers, expressed in an accumulation of all the developers FTE's.	Accumulated FTE of all developers
Customer characteristics		
Customer loyalty	Indicates the loyalty of the customer by judging the likelihood that the customer will switch to another software supplier.	Low / Medium / High
Customer satisfaction	Indicates the level of customer satisfaction, measured on a scale of 1 to 10, where 1 is the lowest and 10 is the highest level of satisfaction.	Scale of 1 to 10
Customer variability	An indicator showing how many percent of the customers have customer specific features or adaptations of features implemented.	Percentage of customers that have customized features
Number of customers	An indicator of the number of customers that use the product.	Number of customers
Number of end-users	An indicator showing the number of end-users the product has.	Number of end-users
Type of customers	This indicator show the type of customers the product is mainly intended for, they can be individuals, small companies, medium companies, or large companies.	Individuals / Small companies / Medium companies / Large companies / All
Market characteristics		
Hosting demands	Indicates what type of demands there are upon the type of hosting service the market demands. You can have central hosting or hosting at the customer side.	Central hosting services / Customer server
Localization demand	This indicator shows the amount of localizations are present in the product.	Number of localizations
Market growth	This indicator shows the direction in which the market (number of potential customers for the product(s)) is growing, it can be growing, stable, or decreasing.	Growing / Stable / Decreasing
Market size	This indicator show how large the market (potential number of customers) is.	0-500 customers / 500-1500 customers / 1500–3500 customers / 3500+ customers
Release frequency	The release frequency (in days), this can sometimes	Number of days

	be imposed upon the company. Where a release is an update containing functional changes, and not only bug fixes.	
Sector	In which sector does the business unit operate, e.g. public, non-profit, government, etc..	Free to fill out the sector
Standard dominance	The market sometimes shows a strong demand for certain standards, this situational factor indicates the level of that demand.	Low / Medium / High
Variability of feature requests	This indicator shows the stability of the demands made on the product by the market, by looking at the level of variability in the feature requests.	Low / Medium / High
Product characteristics		
Defects per year: total	The total number of defects per year reported by external parties.	Defects per year
Defects per year: serious	The total number of serious defects per year, so called 'show stoppers', reported by external parties.	Serious defects per year
Development platform maturity	An indicator showing how mature the technology is that is being used in the product, is can be new, ever changing, or fully developed.	New / Ever changing / Fully developed
New requirements rate	Number of new feature requests per year from customers and sales	Feature requests per year
Number of products	This indicators tells how many other products there are in the product line for this product (this can thus be zero to many).	Number of products
Product age	Indicates the age of the product by looking at number of years passed since the first release of the product until the current point in time.	Number of years
Product lifetime	An indicator showing how long the product will remain in production starting from the current point in time. This indicator thus shows the products remaining lifetime, how long the product already exists must not be included in the calculation.	Number of years
Product size	An indicator of the number of lines of code (excluding comments) of which the product exists (measured in KLOC (thousand lines of code)).	KLOC
Product tolerance	Some products are more sensitive to bugs than others. If we take for example an application which handles bank transactions than it cannot allow for any defects at all since it could cause grave economical and reputational damage to a business, where a back office application which is run only once per week and is non-essential can be non-functioning for a short while without serious consequences.	Low / Medium / High
Software Platform	The software framework the business unit uses, e.g. .NET.	Free to fill out software framework
Stakeholder involvement		
Company policy	The level of influence the company policy has on the business unit SPM processes. This indicator	Low / Medium

88	shows to what extend the business unit imposes rules upon the business unit, such as technology, and functional demands.	/ High
Customer involvement	The level of customer involvement in the decision which standard features will be implemented, and how these will be implemented	Low / Medium / High
Legislation	This indicator shows the level of influence of legislation imposed upon the software product by government bodies, which can be strict or loose to non existing.	Strict / Loose / Non-existing
Partner involvement	The level of influence partner enterprises have with regard to the business unit decisions such as development, and implementation decisions.	Low / Medium / High

Table 86: The base list of situational factors

Case study protocol

Semi-structured interviews

6-3-2008

Willem Bekkers

Introduction

- ❖ [Introduce self, the interviewer]
- ❖ [Explain goal of research] With this research we want to determine whether there is a correlation between situational factors (environmental factors outside of your companies control) and the maturity level of the software product management.
- ❖ [Explain goal of interview] We want to model the software product management processes in place in your business unit. We will compare these models with the values given in the base list of situational factors, and to the models we have created for the other business units. From this comparison we wish to create a model linking situational factors to the level of process maturity.
- ❖ [Recording permission] Is it alright if I record this interview? No one outside the University of Utrecht will have access, or get to hear these recordings.

General

[To be filled in prior to the interview]

- ❖ The interviewee's name:

___

- ❖ The interviewee's business unit:

___

- ❖ The product being discussed:

___

[Questions to ask the interviewee as a warm-up]

- ❖ How long have you been employed within Centric?

___

- ❖ [If the interviewee is not solely a product manager] What is your job title?

___

- ❖ What is your function within Centric?

___

___

- ❖ [If not yet filled in] What are the values of the factors given in the base list of situational factors?

PDD modeling

Interview structure: to be followed from left to right, and top to bottom. First let the product manager tell his story, than check it with the reference framework.

	Process	What steps do you undertake during this process?	What document(s) are input for this process	What document(s) are created during this process?	Per factor in the base list of situational factors: How much influence does this factor have on the way your processes are structured?
Portfolio management	Partnering & contracting				
	Market trend identification				
	Product lifecycle management				
	Product line identification				
Product roadmapping	Theme identification				
	Core asset identification				
	Roadmap construction				
Requirements management	Requirements gathering				
	Requirements identification				
	Requirements organization				
Release planning	Requirements prioritization				
	Requirements selection				
	Release definitions				
	Scope change management				
	Release validation				
	Launch preparation				

❖ *Mark the parts which have been discussed as followed: "M" if it was modeled, with "NA" if it was not applicable for the business unit, and with a "T" if there wasn't enough time to discuss it.*

Base list of situational factors: Level of influence

Indicate the level of influence the situational factors on a scale of 1 (low) to 7 (high).

Portfolio management				Product roadmapping			Requirements management			Release planning					
Partnering & contracting	Market trend identification	Product lifecycle management	Product line identification	Theme identification	Core asset identification	Roadmap construction	Requirements gathering	Requirements identification	Requirements organization	Requirements prioritization	Requirements selection	Release definitions	Scope change management	Release validation	Launch preparation	Situational factor
Business unit characteristics																
																Development philosophy
																Size of business unit team
																Size of development team
Customer characteristics																
																Customer loyalty
																Customer satisfaction
																Customer variability
																Number of customers
																Number of end-users
																Type of customers
Market characteristics																
																Hosting demands

		Localization demand
		Market growth
		Market size
		Release frequency
		Sector
		Standard dominance
		Variability of feature requests
Product characteristics		
		Application age
		Defects per year: total
		Defects per year: serious
		Development platform maturity
		New requirements rate
		Number of products
		Product lifetime
		Product size
		Product tolerance
		Software Platform
Stakeholder involvement		
		Company policy
		Customer involvement
		Legislation
		Partner involvement

❖ *Indicate the level of influence the situational factors on a scale of 1 (low) to 7 (high), leaving a field blank means no influence.*

Closing

- Is there anything else you would like to add to this interview?
- [Thank interviewee]