

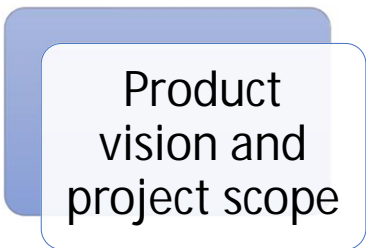
Software Product Value and Stakeholders

Zheyang Zhang


Day 2: Vision, Scope, and Stakeholders

1

Outline



Product
vision and
project scope



Stakeholder
analysis

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Vision and scope

Vision

- describes what the product is about and what it eventually could become
- Communicates the strategic intent for product development
 - Why are we building this product, system, or application?
 - What problems will it solve?
 - What feature and benefit will it provide?
 - For whom does it provide these features and benefits?
 - What performance, reliability and scalability must it deliver?
 - What platforms, standards, applications, etc. will it support?

Scope

- work content of a project
- activities

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Product vision_ "Cafeteria Ordering System" (COS)

- Captures the essence of the product - aligns all stakeholders in a common direction

1.5 Vision Statement

For employees who want to order meals from the company cafeteria or from local restaurants online, the Cafeteria Ordering System is an Internet-based and smartphone-enabled application that will accept individual or group meal orders, process payments, and trigger delivery of the prepared meals to a designated location on the Process Impact campus. 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.

(Wiegers and Beatty 2013, p.577)



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Elements in a vision statement template

For [target customer]	employees
Who [statement of the need or opportunity]	wish to order meals from the company cafeteria or from local restaurants on-line
The [product name]	Cafeteria Ordering System
Is [a product category]	an Internet-based and smartphone-enabled application
That [key benefit, compelling reason to buy or user]	accept individual or group meal orders, process payments, and trigger delivery of the prepared meals to a designated location on the Process Impact campus
Unlike [primary competitive alternative, current system, or current business process]	the current telephone and manual ordering processes
Our product [statement of primary differentiation and advantages of new product]	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

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Need

What are our client's needs?

A need should relate to an important and specific client or market opportunity, with market size and end customers clearly stated.

The market should be large enough to merit the necessary investment and development time.

Benefits

What are the client benefits of our approach?

Each approach to a client's need results in unique client benefits, such as low cost, high performance or quick response (better, faster, cheaper).

Success requires that the benefits be quantitative and substantially better - not just different. Why must we win?



Approach

What is our compelling solution and unique advantage to the specific client need?

As the approach develops through iterations, it becomes a full proposal or business plan, which can include market positioning, cost, staffing, partnering, deliverables, a timetable and intellectual property (IP) protection.



Competition

Why are our benefits significantly better than the competition?

Everyone has alternatives. We must be able to tell our client or partner why our solution represents the best value.

To do this, we must clearly understand our competition and our client's alternatives.

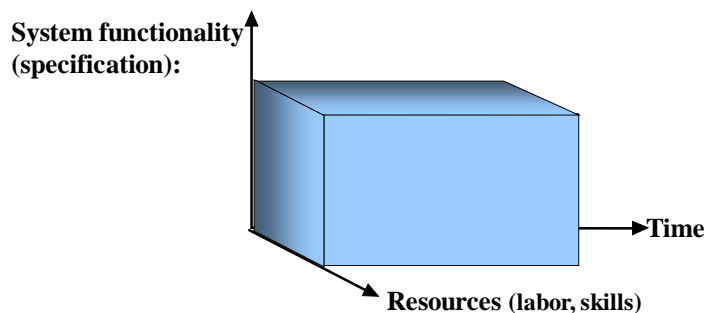
We must be able to clearly state why our approach is substantially better than that of the competition. Our answer should be short and memorable.



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Project scope

- Project scope includes
 - Functionality (Feature) of the product
 - Resources available to the project
 - Time to deliver the product (user stories, story points, velocity)



Brooks law: Adding labor to a *late* software project makes it even later. (1975)

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Features_COS

- Features are services provided by the system that fulfill one or more stakeholder needs.
 - It consists of one or more logically related system capabilities that provide value to users and are described by a set of requirements
- Features are program backlog items in an agile project



2.1 Major Features

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

FE-2: Order and pay for meals from local restaurants to be delivered.

FE-3: Create, view, modify, and cancel meal subscriptions for standing or recurring meal orders, or for daily special meals.

FE-4: Create, view, modify, delete, and archive cafeteria menus.

FE-5: View ingredient lists and nutritional information for cafeteria menu items.

FE-6: Provide system access through corporate intranet, smartphone, tablet, and outside Internet access by authorized employees.

(Wiegers and Beatty 2013, p.578-579)

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Feature tree_COS

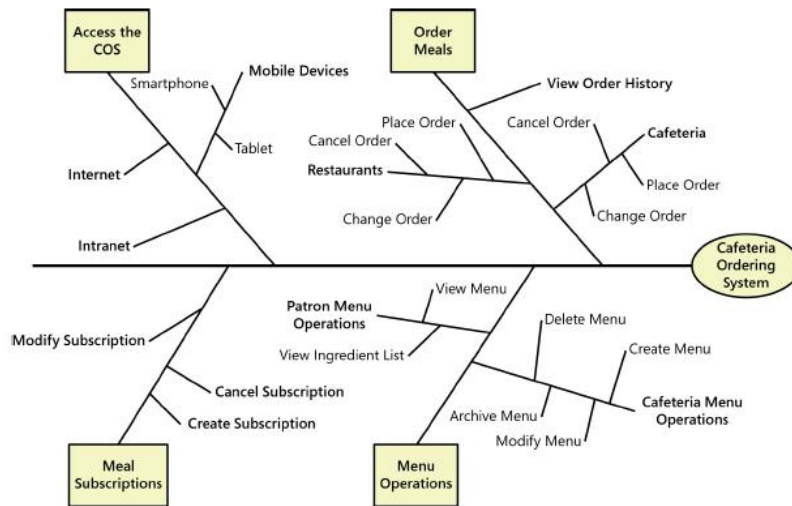
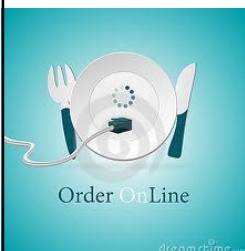


FIGURE C-1 Partial feature tree for the Cafeteria Ordering System.



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A swimlanes list for a COS



Patron	COS	Cafeteria console	Cook	Delivery	Checkout
Choose food	Displays menu				
Confirms and pays	Displays order				
	Sends order to the cafeteria and checkout	Displays order			Receives payments and prints receipt
			Cooks order and puts food on delivery cart		
				Delivers food and receipt to patron	
Receives food, eats food					

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Releases or a product roadmap



2.2 Scope of Initial and Subsequent Releases

Feature	Release 1	Release 2	Release 3
FE-1, Order from cafeteria	Standard meals from lunch menu only; meal orders for delivery can be paid for by payroll deduction only	Accept credit and debit card payments	Accept meal orders for breakfasts and suppers
FE-2, Order from restaurants	Not implemented	Delivery to campus locations only	Fully implemented
FE-3, Meal subscriptions	Not implemented	Implemented if time permits	Fully implemented
FE-4, Menus	Create and view menus	Modify, delete, and archive menus	
FE-5, Ingredient lists	Not implemented	Fully implemented	
FE-6, System access	Intranet and outside Internet access	iOS and Android phone and tablet apps	Windows Phone and tablet apps

(Wieggers and Beatty 2013, p.578-579)

Roadmap – a themed, prioritized “plan of intent” (Leffingwell 2010)



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Vision vs. scope

• Vision

- Applies to the whole product development program
- changes relatively slowly

• Scope

- Pertains to a specific project/iteration
- Be more dynamic than vision
- Project managers adjust the contents of each release

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Template for vision and scope document (Wiegers and Beatty 2013)

- Business requirements
 - Background
 - Business opportunity
 - Business objectives and success criteria
 - Vision statement
 - Business risks
 - Business assumptions and dependencies
- Scope and limitations
 - Major features
 - Scope of initial release
 - Scope of subsequent releases
 - Limitations and exclusions
- Business context
 - Stakeholder profiles
 - Project priorities
 - Operating environment

A sample vision and scope document is available at: (Wiegers and Beatty 2013, p.576-580) . Such a document can be also called a project charter or a business case document.

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Outline

Product vision
and project
scope

Stakeholder
analysis



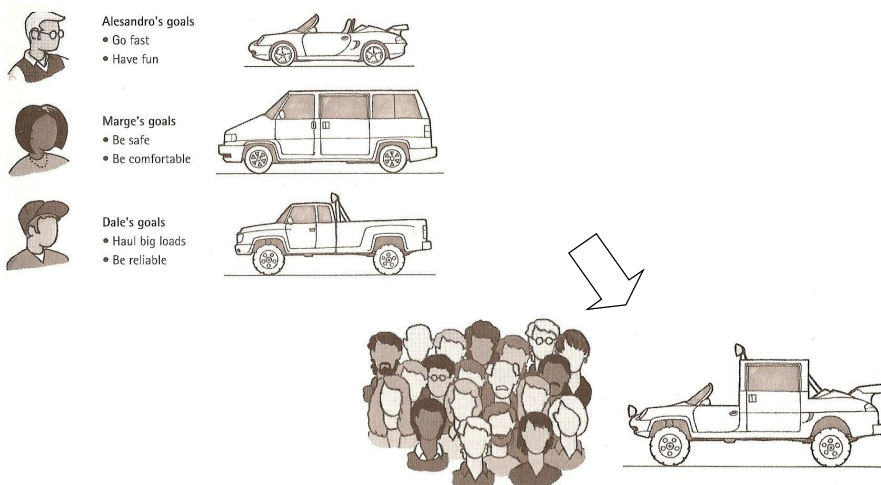
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Stakeholder participation

- Participation takes place when stakeholders are part of the decision-making process
- Participation requires that stakeholders at all levels of social structure have an opportunity to participate in the decision-making process
- Participation is the only means for achieving long-lasting consensus and common agreement
- It is about taking responsibility, engaging and informing

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Participants



- About Face 2.0, Alan Cooper and Robert Reimann, Page 56

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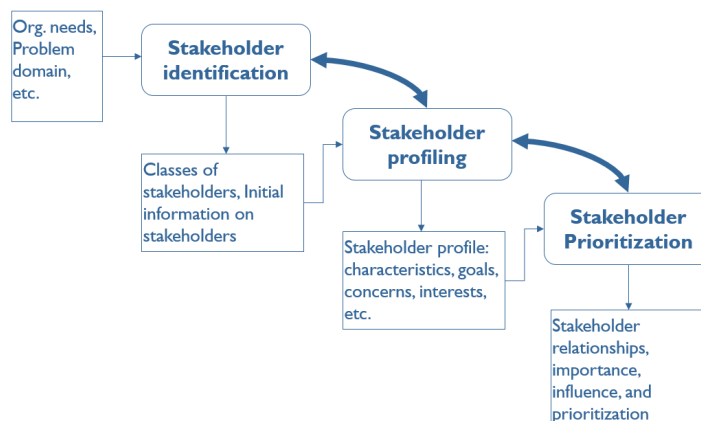
Why stakeholder analysis

- Improve the project's understanding of the needs
- Reduce, or (hopefully) remove, potential negative project impacts
- Identify who should be encouraged to take part in the project planning and implementation
- Identify possible conflicts of interest and expectation among stakeholders

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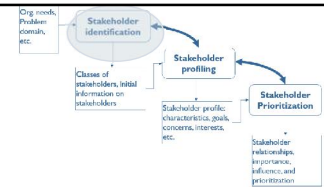
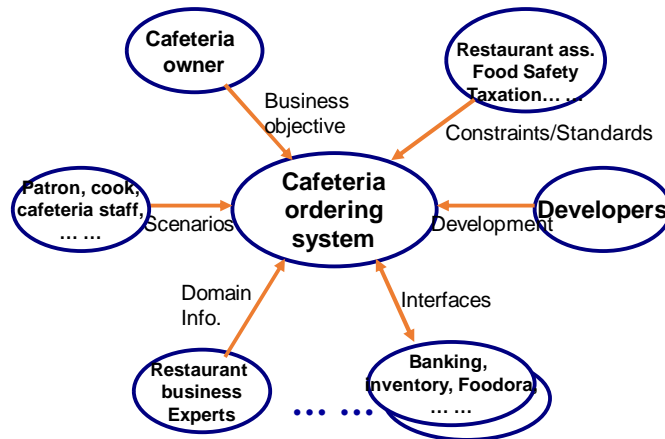
Stakeholder analysis

- Stakeholder analysis is an approach for understanding a system by identifying the stakeholders in the system, and assessing their respective interests in, or influence on the system



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Stakeholders in the COS



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Stakeholders, customers and users



Stakeholders

- Anyone who is affected by, or can influence the outcome of a project
- Includes customers, regulators, managers, analysts, developers, testers, doc writers, legal staff, sales, support, manufacturing, auditors

Customers/Clients

- An individual or organization who derives direct or indirect benefit from a product
- Could request, pay for, select, specify, or use the product

Users

- Someone who directly or indirectly interacts with the system, provides inputs to it, or receives output from it

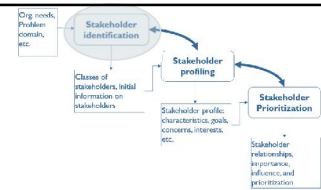
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Users



• Users of the system-as-is

- users of the system-as-is: indicate which functions to maintain or improve
 - Different groups of users according to tasks performing with the system
- users of competitors' products: suggestions on designing a superior product
- Do not neglect interest groups, may have special needs - Expert users, or with disabilities or handicaps
 - Usability, training, online help ...

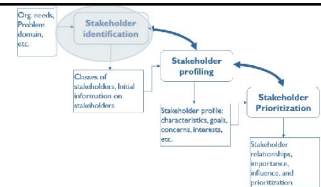


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A variety of experts

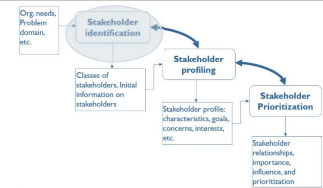


- Domain Expert
 - knows the work involved
 - familiar with the problem that the software must solve
 - also knows the environment in which the product will be used
- Inspector
 - An expert in governmental rules and safety relevant to the project
 - E.g. safety inspectors, auditors, technical inspectors
- Lawyer
 - Familiar with laws, legal aspects, and/or standards relevant to the project
- Expert of systems that interact with the system to be built
 - Knows the interfaces of the interacting systems
 - May be interested in product features



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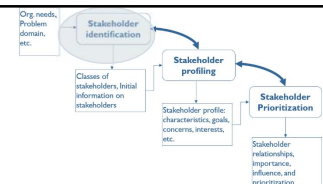
Stakeholder identification



- Baseline stakeholders → the network of stakeholders
- A combination of following techniques/sources is useful for exploring the network of stakeholders
 - By asking your sponsor or client
 - e.g. interview “who else should we talk to about that?”
 - With a template such as the checklist
 - By comparing with the similar projects
 - By analyzing the *context* of the project

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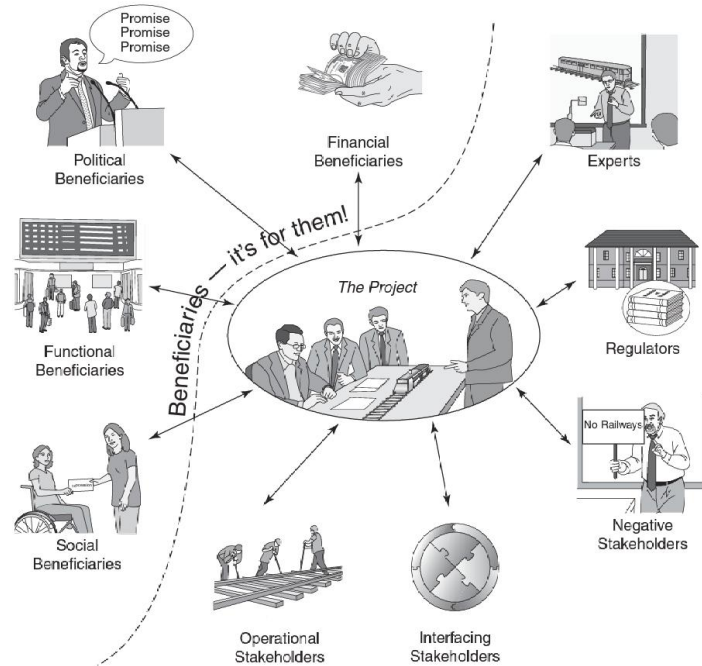
Example of checklist questions



- Who are the user groups of the system?
- Who is the customer (economic buyer) for the system?
- Who are involved in developing the system?
- Who will evaluate and approve the system when it is delivered and deployed (who constrain the system as regulators)?
- Who will maintain the system?
- Is there anyone else who cares or is negatively affected?
- What other systems interact with this system?

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Beneficiaries and other stakeholders in a project



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Context Diagram

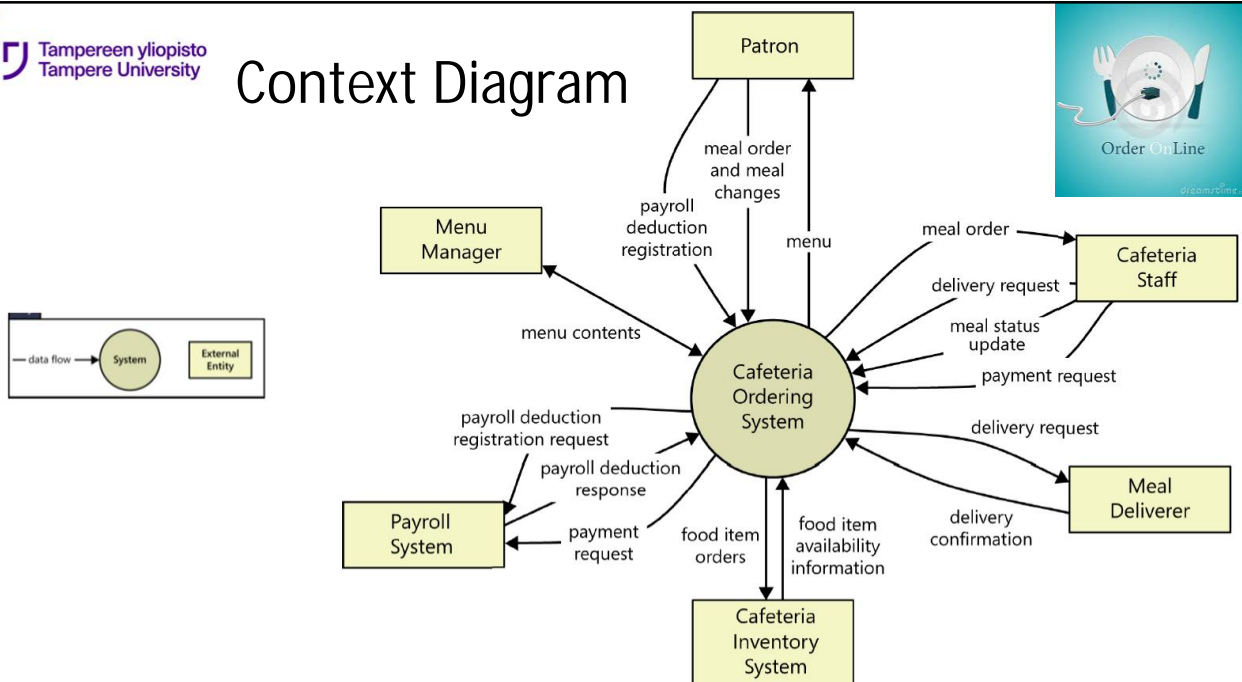
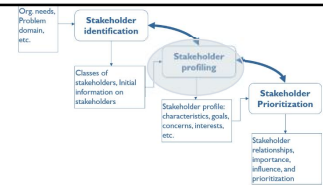


FIGURE C-2 Context diagram for release 1.0 of the Cafeteria Ordering System.

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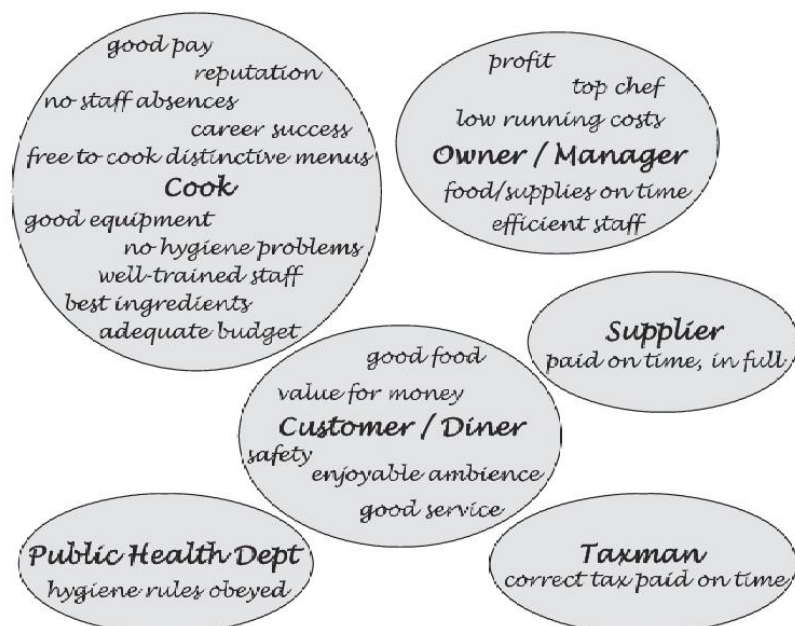
Stakeholder profiling



- The stakeholders profile records their own concerns of the system, including their interests, characteristics, etc.
 - Major value or benefit the stakeholder receives from the product
 - The likely attitudes towards the product
 - Major features and characteristics of interest
 - Know constraints that must be accommodated

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List of stakeholders goals



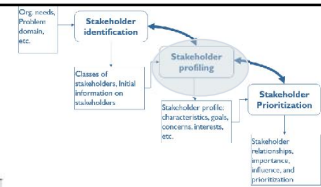
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Stakeholder profiles_COS

3.1 Stakeholder Profiles

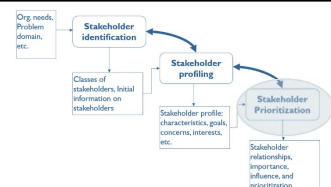
Stakeholder	Major value	Attitudes	Major interests	Constraints
Corporate Management	Improved employee productivity; cost savings for cafeteria	Strong commitment through release 2; support for release 3 contingent on earlier results	Cost and employee time savings must exceed development and usage costs	None identified
Cafeteria Staff	More efficient use of staff time throughout the day; higher customer satisfaction	Concern about union relationships and possible downsizing; otherwise receptive	Job preservation	Training for staff in Internet usage needed; delivery staff and vehicles needed
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	Corporate intranet access, Internet access, or a mobile device is needed
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

(Wiegers and Beatty 2013, p. 579)



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Stakeholder relationship identification and prioritization



Understand the relationships between stakeholders

Identify conflicts of interests between stakeholders

Identify relations between stakeholders that may enable "coalitions" of project sponsorship, ownership and cooperation

Assess the importance and influence of each stakeholder on the project

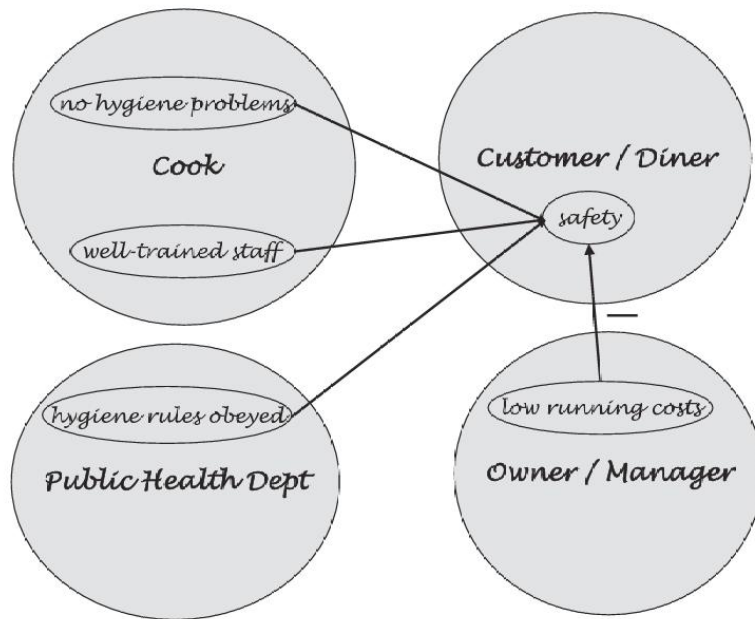
How stakeholders problems, needs, and interests coincide with the aims of the project

How powerful the stakeholder is

Stakeholder prioritization – Power/Interest grid

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Support and conflict among restaurant stakeholders' goals



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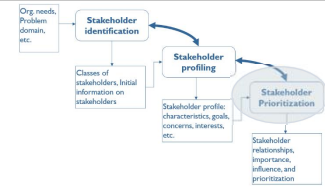
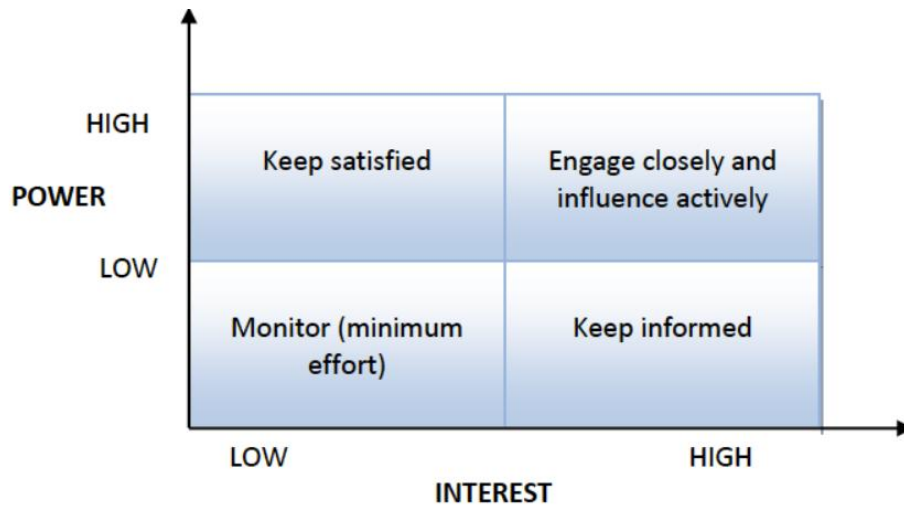
Power/Interest grid (1/2)



	Low interest	High interest
High power	Regulation makers: restaurant association, food hygiene rules maker	Owner/manager
Low power		End users – patron, cook, staff, delivery

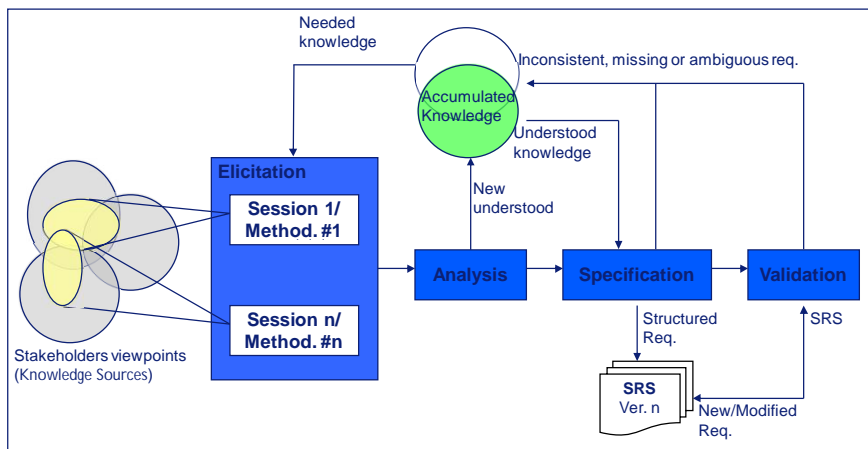
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Power/Interest grid (2/2)



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Why we analyze stakeholders (1/2)



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Why we analyze stakeholders (2/2)

	S1 (S1%)	S2 (S2%)	Sn (Sn%)	Sum
Feature 1	P (F1, S1)	P (F1, S2)		P (F1, Sn)	$\sum P(F1, Si) * Si\%$
... ..					
Feature m	P (Fm, S1)	P (Fm, S2)	P (Fm, Sn)	$\sum P(Fm, Si) * Si\%$

- Si: Stakeholder who has the weight value si%.
- P(Fi, Sj): Stakeholder Sj assign the priority value P to feature i.

Bolchini, D., *Crafting Salient Web Scenarios Using Priorities*, Proc. 6th Requirements Engineering Workshop (WER'03)

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Reading materials

- Alexander, I. (2005) A Taxonomy of Stakeholders: Human Roles in System Development, *International Journal of Technology and Human Interaction*, 1(1), 23–59.
- Daniela Damian (2007), Stakeholders in Global Requirements Engineering: Lessons Learned from Practice, *IEEE software* 24(2), March/April 2007

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Day2: Group assignments, due at 12pm, Aug. 7 2020

- With your group members, please propose a software development project, and prepare for a specification that covers the project's (20 points)
 - a) Vision statement or NABC – 10p
 - b) key stakeholders? – 2p
 - c) stakeholder profile – 2p
 - d) power/interest grid – 2p
 - e) And explain how you analyze and validate the project's stakeholders? – 4p
- In addition, Groups 2, 12, 3 and 10 prepare for a presentation (including 3 or 4 slides) of your project plan to cover the product vision and stakeholder analysis, and present it tomorrow (Aug. 7) in the course (影流之组, 就很牛皮, Cardigan, 阿勇废了, 下一组)

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An NABC Canvas

Need . What are our client's needs? A need should relate to an important and specific client or market opportunity, with market size and end customers clearly stated.	Approach . What is our compelling solution to the specific client need? Draw it, simulate it or make a mockup to help convey your vision.
Benefit . What are the client benefits of our approach? Each approach to a client's need results in unique client benefits, such as low cost, high performance or quick response.	Competition . Why are our benefits significantly better than the competition? Everyone has alternatives. We must be able to tell our client or partner why our solution represents the best value. To do this, we must clearly understand our competition and our client's alternatives.

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Groups and group work (55 points)

- Day 1: product value analysis, **due at 12pm, Aug. 6, 2020**
 - Read the article *E. Almquist, J. Senior, and N. Bloch (2016) The Elements of Value. Harvard Business Review. Sept. 2016* (see the attached pdf file)
 - Select a product or service, and use "the elements of value" model to (15 points)
 - a) Clarify the produce or service to be analysed; - 2p
 - b) identify and analyze the four categories of elements of value (from the functional level to the social impact level) the product/service delivers; - 8p
 - c) besides the elements of value elements delivered by the selected product, are there elements which are critical but missing or insufficiently delivered? If yes, discuss how to refine the software to strengthen or deliver these value elements. If no, discuss the new elements which could be added to the software. - 5p
 - Prepare for a document to answer the above questions.
 - In addition, Groups 1, 13, 4, 11 and 6 prepare for a presentation (including 3 or 4 slides) of the product value analysis tasks, and present it tomorrow (Aug. 6) in the course (有一说一确实组, 东拼西凑组, 下岗工人再就业队, 这个需求有难度, 没有名字组)

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Presentation of Day 1's group work

- Groups 1 -有一说一确实组
- Group 13 -东拼西凑组
- Group 4 -下岗工人再就业队
- Group 11 -这个需求有难度
- Group 6 -没有名字组

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