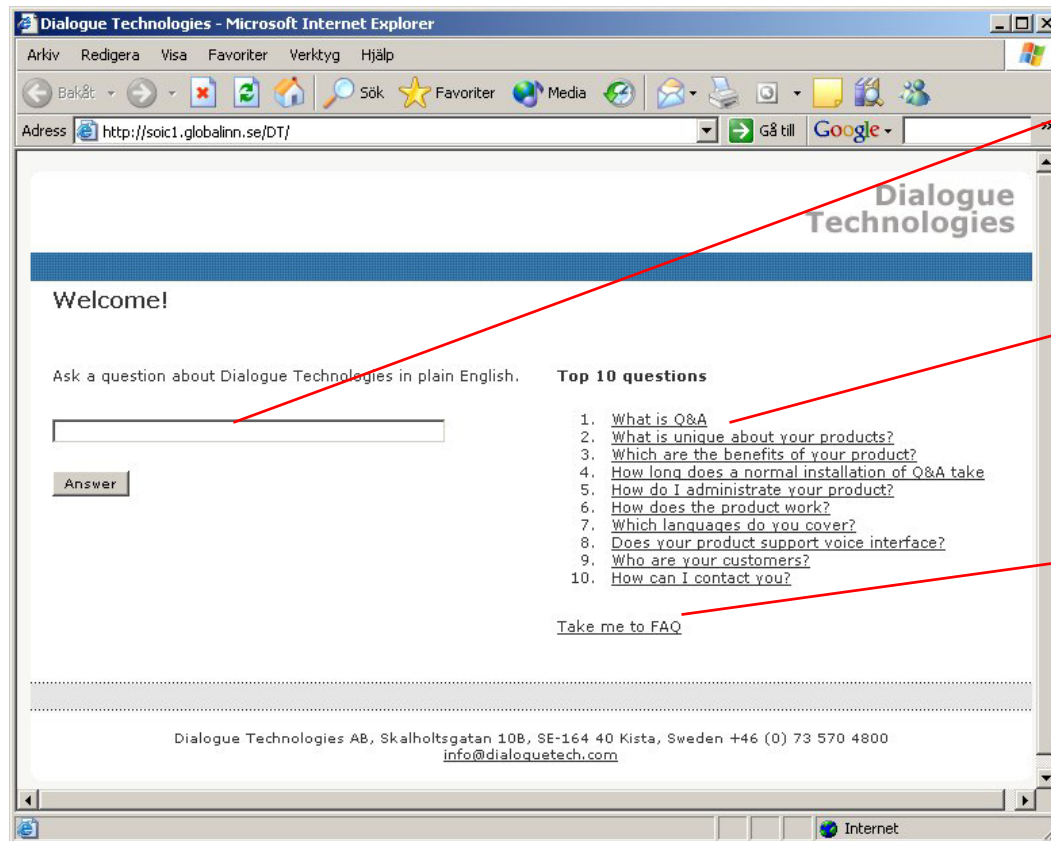


Maintaining an Application

A Typical Self-service Application for the Web Looks Like the Following:

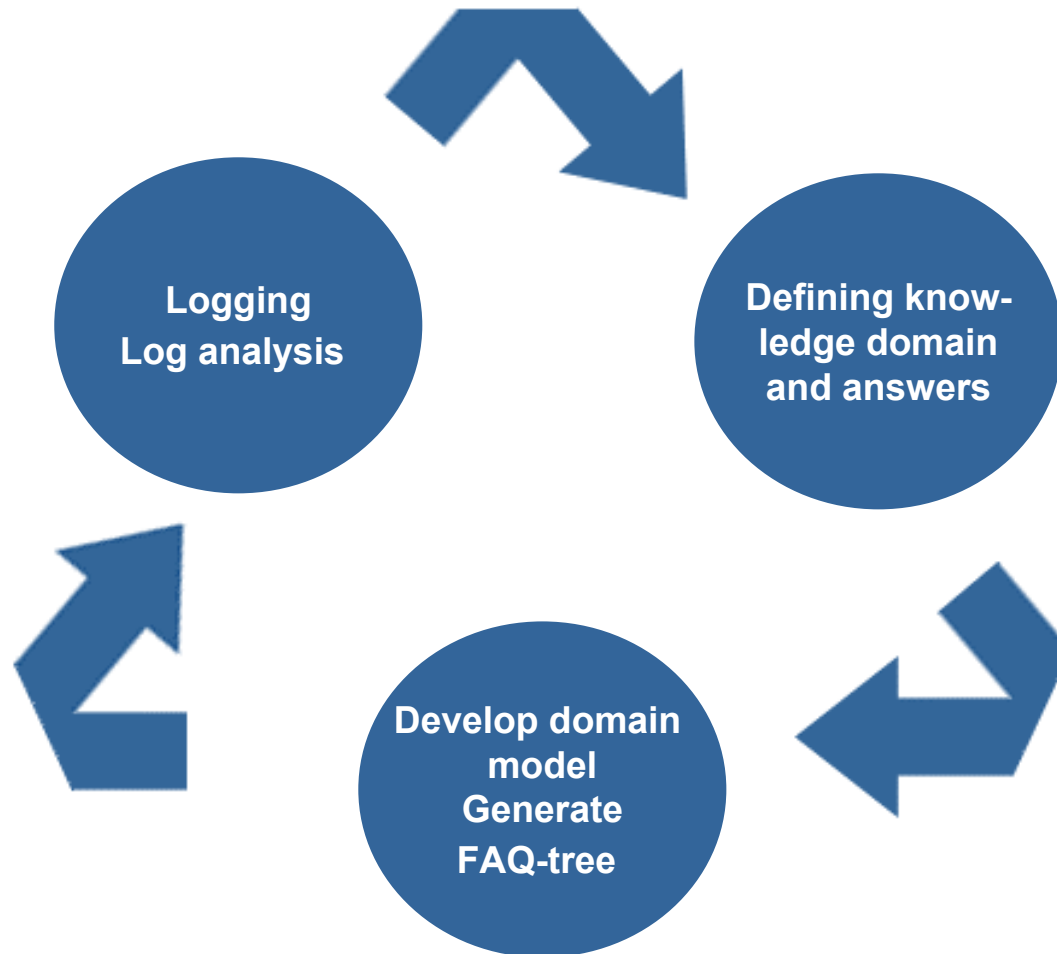


A field to type questions in free format

A current list with top ten most frequently asked questions. Answer to a question is retrieved by clicking on the link

Link to FAQ-tree with every base question that the system can manage

Development and Maintenance of Dialogue Technologies Q&A Services Goes Through a Cycle of 3 Steps:



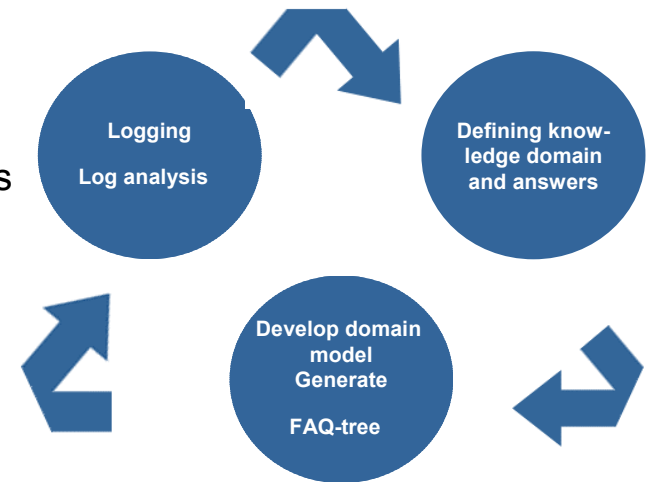
Defining Knowledge Domain and Where to Retrieve the Answers

Activity: Defining/updating questions that will be answered. These are documented as base questions with an address to the answer, in the form of SQL or a URL. The document with the base questions and links to answers is called a corpus. The corpus is based on the customer's business objectives, logs from earlier usage, old FAQ's, inquiries, interviews, polls, etc.

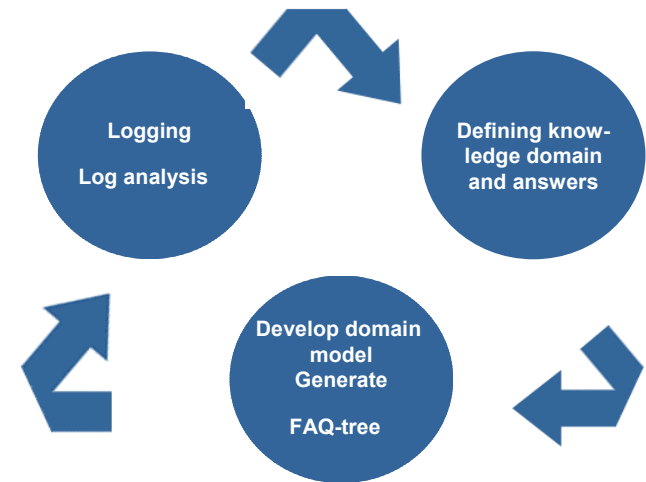
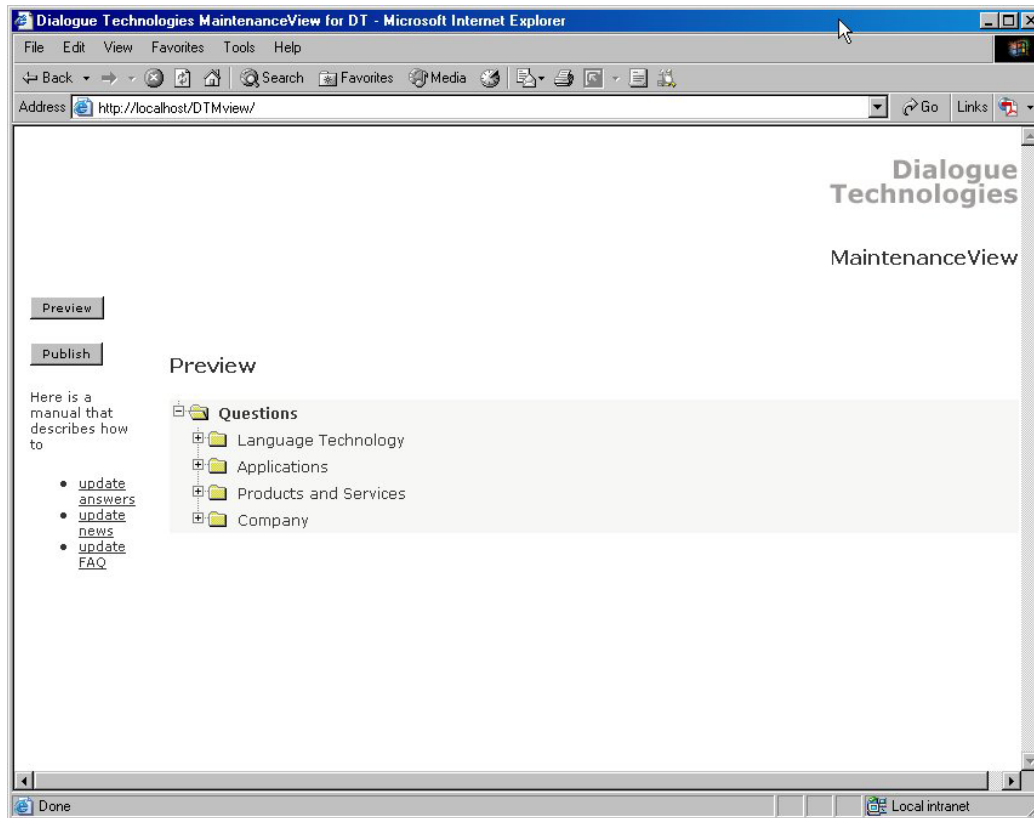
Output: HTML-type corpusfile with the name *[customer]Corpus.htm*

Development tool: *MaintenanceView* – web-based development tool and Microsoft Frontpage, or equivalent.

Documentation: *DoUMall for [customer]* – tutorial for maintaining web applications.



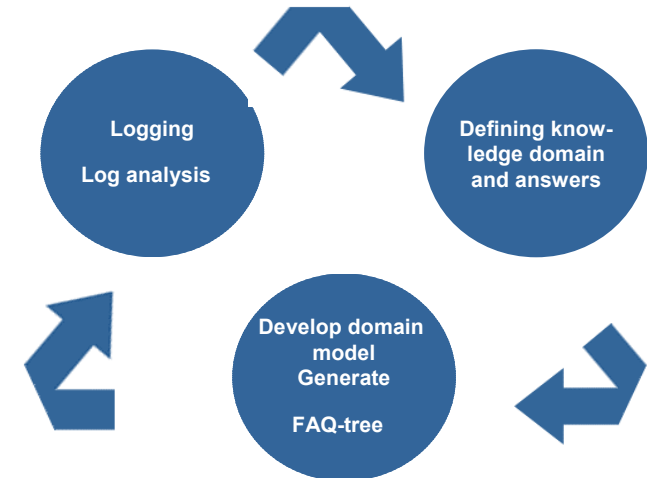
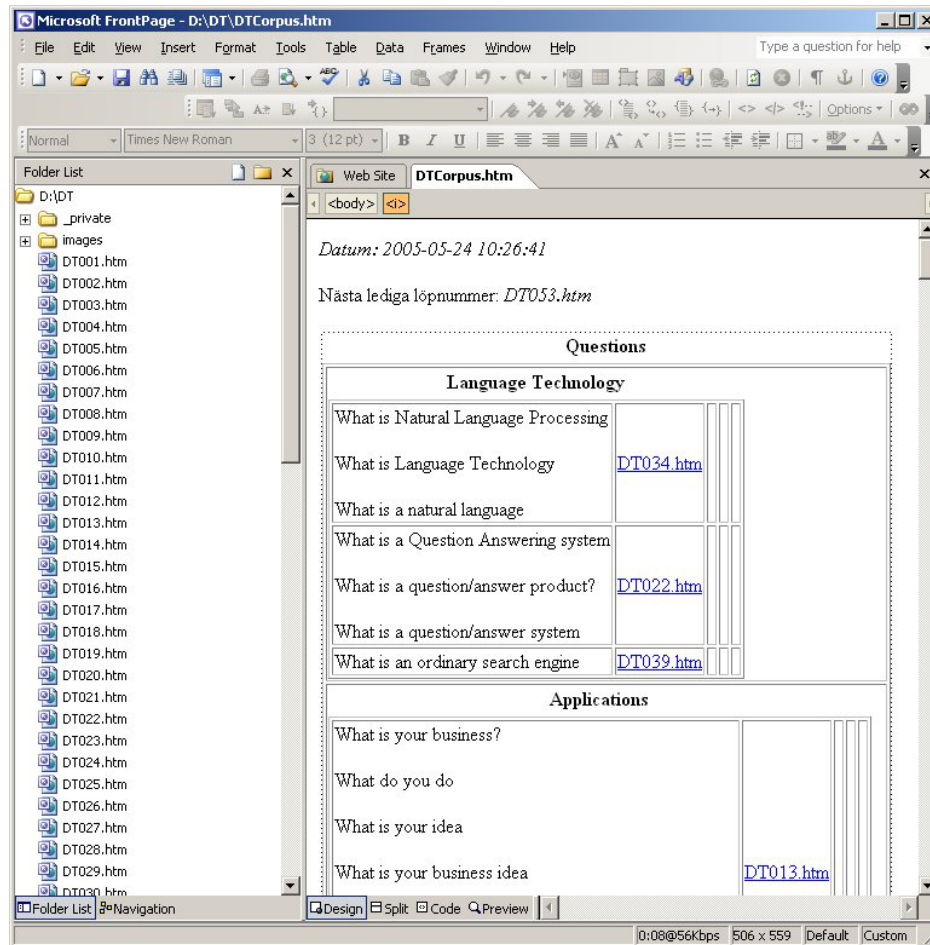
MaintenanceView Is a Web-Based Maintenance Tool



With MaintenanceView you can:

- update the newsfile
- update the FAQ-tree
- update the answers
- preview the results, and
- publish the updates

An Example of a Corpusfile



A corpusfile is used:

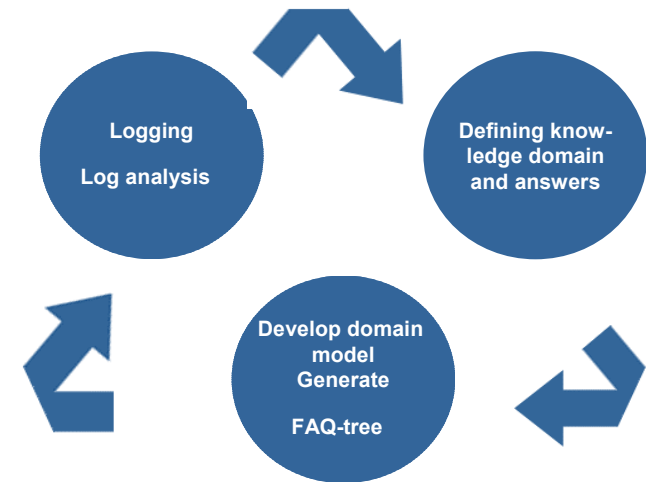
- as support for building domain models, and
- to generate FAQ-trees.

The corpus file contains:

- base questions and modelled variants with answers
- the FAQ-tree structure, and
- categorization of the questions (optional).

Base Questions and Variations

Type of question	Example
• Base question	1. Which harbours are going to be visited?
• Variants that are automatically covered	1. Which harbours are visited? 2. Show all the harbours that will be visited? 3. Will the ship visit any harbours?
• Variants that have to be modelled	1. What travel route is there? 2. Where does the ship go to?



Dialogue Technologies' grammars let a small amount of base questions correspond to thousands of different ways to ask the questions.

As an example, a customer voice application with 280 base questions handles 22 000 different variations.

Developing Domain Model and Generating FAQ-tree

Activity: Publish FAQ-tree and news. Develop or update, test, and launch a new version of Q&A for questions in free format.

Output: An updated web application.

Development tool: *MaintenanceView* – publish FAQ-tree and news.

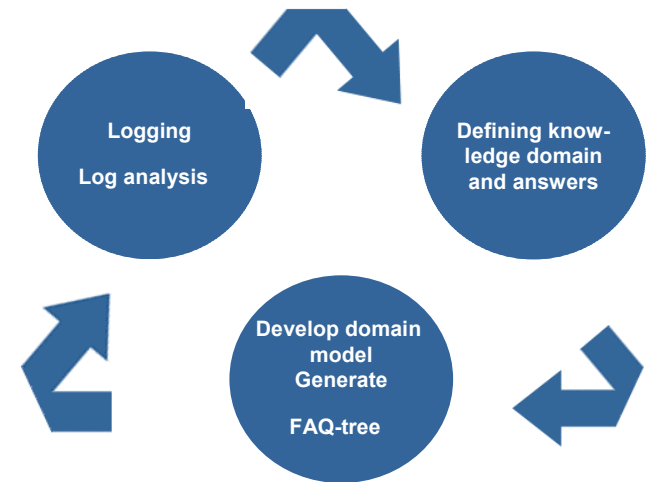
Customization Tool - development of Q&A applications.

Documentation: *DoUMall for [customer]* – tutorial for maintaining web applications.

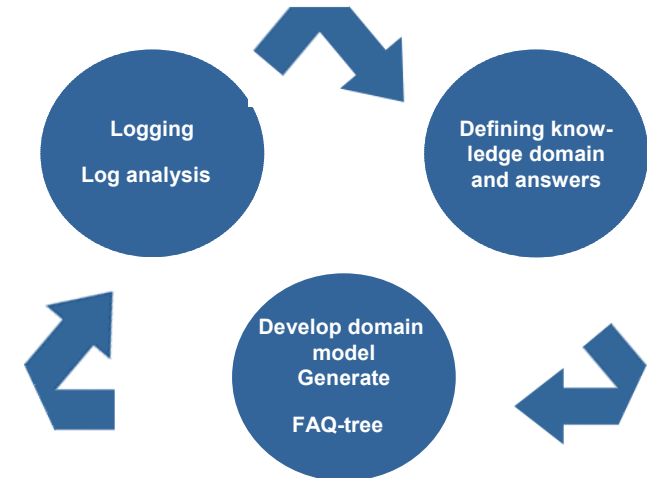
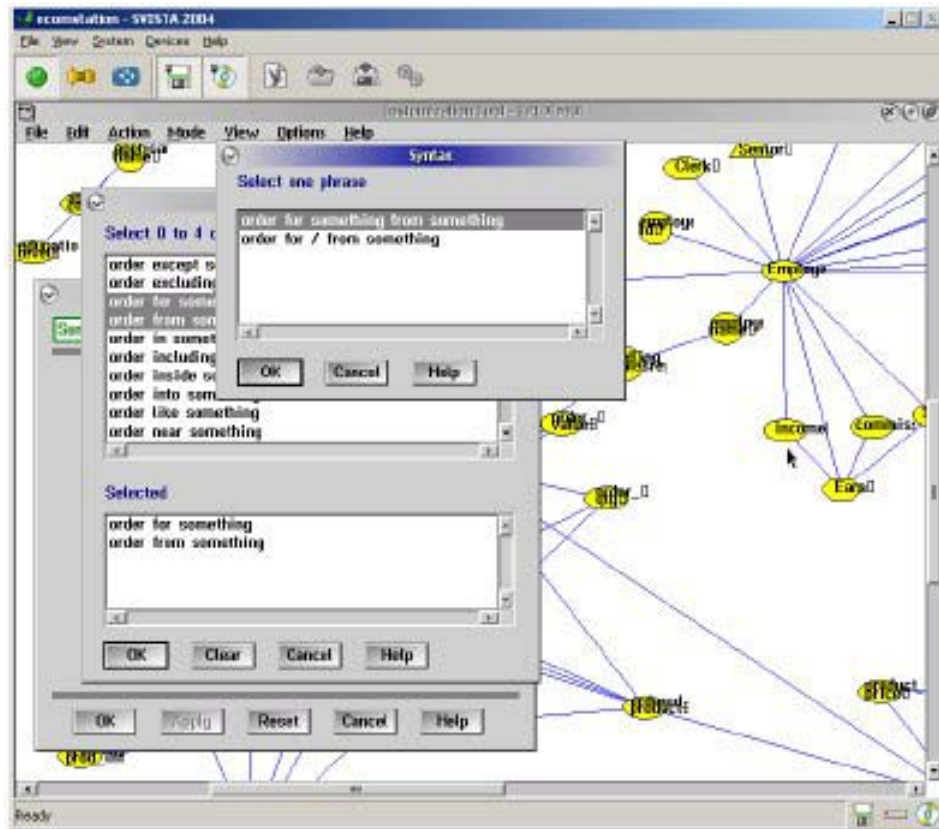
Advanced Customization Guide – a description of how to develop Q&A applications.

Customization Tool Users' Guide – manual for the development tool.

Modelling of knowledge domain – an introduction for how to build Q&A applications.



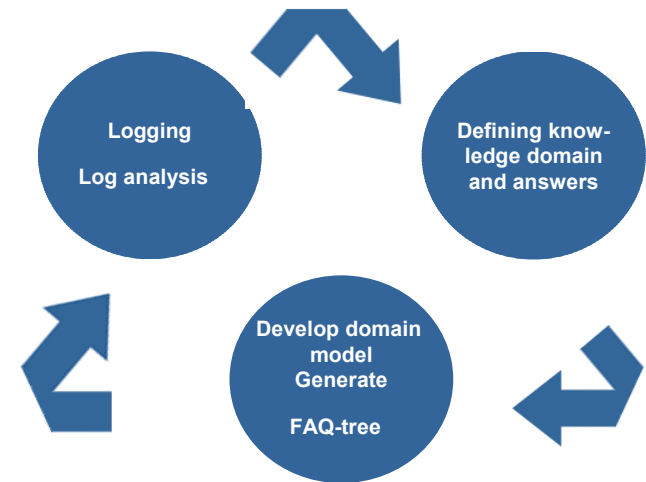
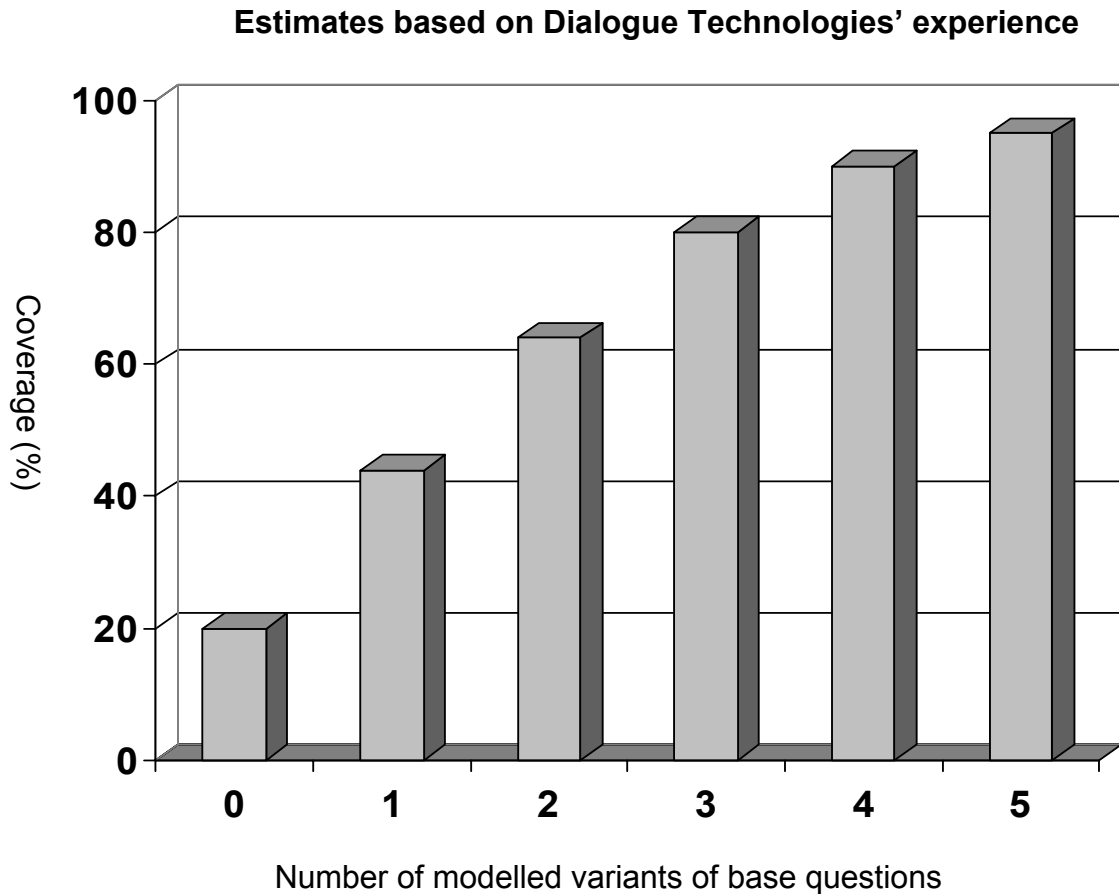
Screenshot From Customization Tool



Customization Tool is a graphical development tool that is used to build domain models. A complete Q&A application consists of:

- a domain model,
- a grammar for the language in question,
- a small database (option),
- pointers to answers, and
- a user interface (web, voice, sms, mail).

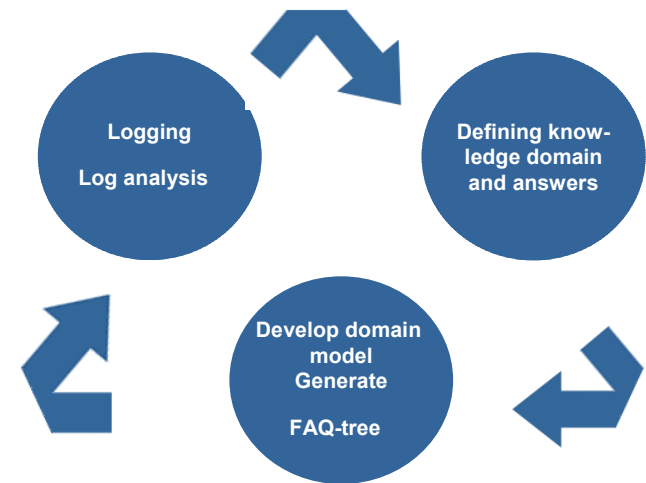
The Amount of Modelled Variations Control How High the Coverage Is



Dialogue Technologies Experience of Domain Modelling

Dialogue Technologies strives to automate and make the work with developing domain models more efficient. This includes among other things:

- Porting of development tools to a web environment. No special clients are needed.
- Improved documentation and educational material. Students at the Mitt University have built their own Q&A application with only a couple of days of education.
- Q&A products are built to reuse prior models easily and flexibly.
- Easy and flexible porting of applications between different languages.



Illustrations	Products Simplier systems	Smaller companies Medium sized systems	Larger organisations Advanced products/systems
Number of base questions	100	200	300
Coverage requirement	Modelled questions	Modelled questions	Modelled questions
20 % coverage	100	200	300
65 % coverage	200	400	600
95 % coverage	500	1000	1500

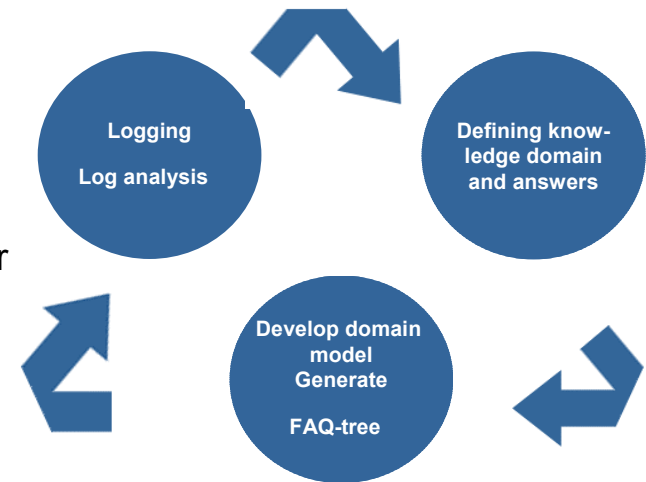
Logging of Asked Questions and Analysis of the Logs

Activity: Every question that is asked to a Q&A application is logged and stored in a designated file. The logs are analyzed with a software tool. One of the items that are logged are non-answered questions. These questions are sorted with linguistic methods and the sorted list constitute the foundation for an expansion of the service. The customer decides what will be included in an update of the service.

Output: Sorted list of non-answered questions and an updated HTML-type corpusfile with the name *[customer]Corpus.htm*

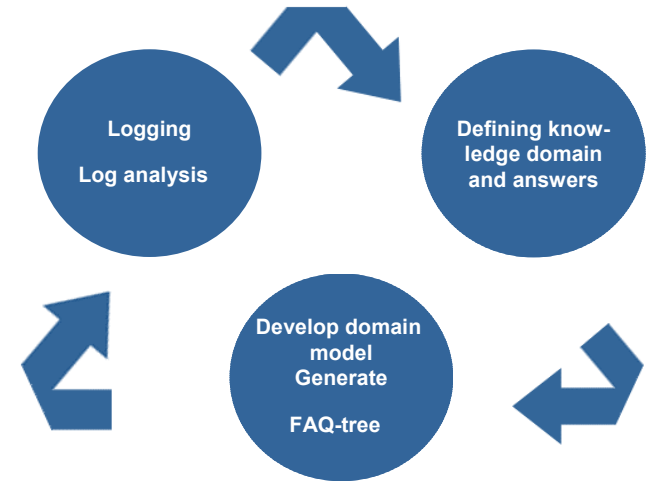
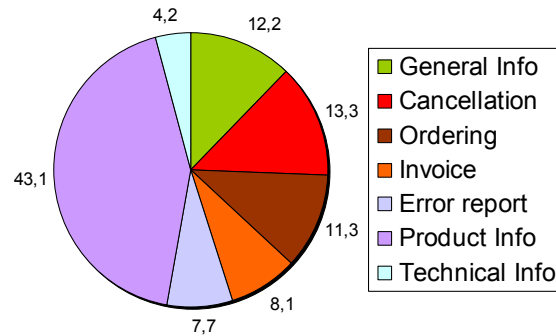
Development tool: *LogView* – a web-based tool for analysis of user logs.

Documentation: *DoUMall for [customer]* – tutorial for maintaining web applications.

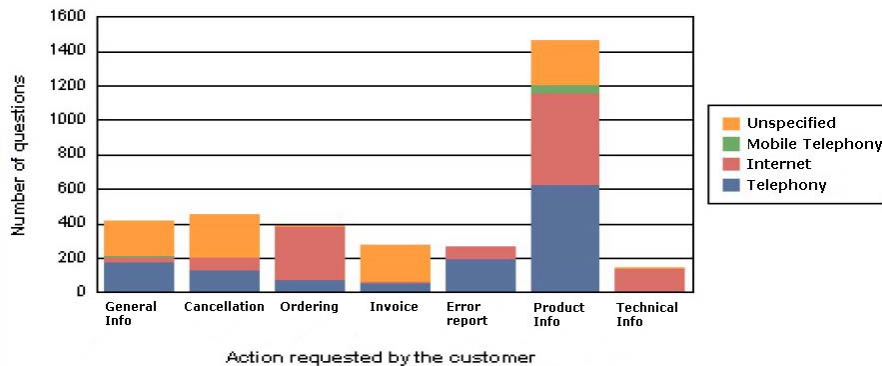


LogView – a Web-Based Tool That Gives Valuable Information of What Your Customers Ask About

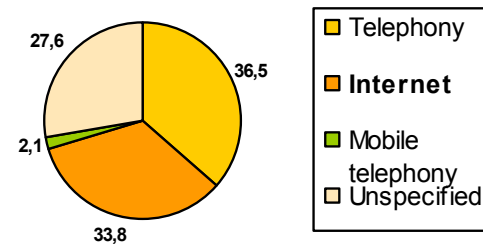
Distribution of questions per action (%)



Distribution of questions per activity and service

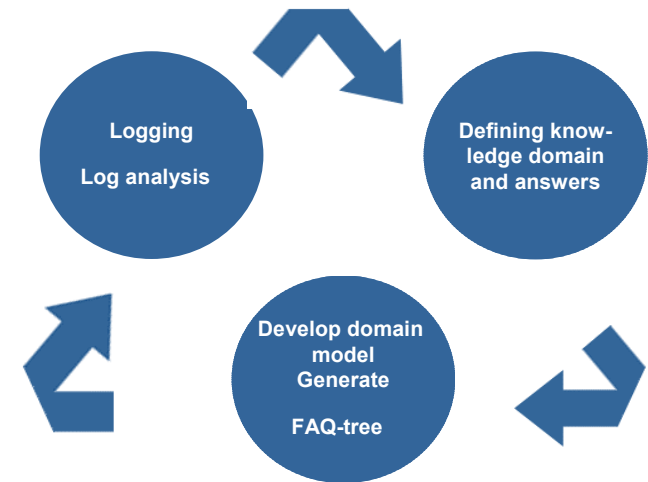


Distribution of questions per service (%)



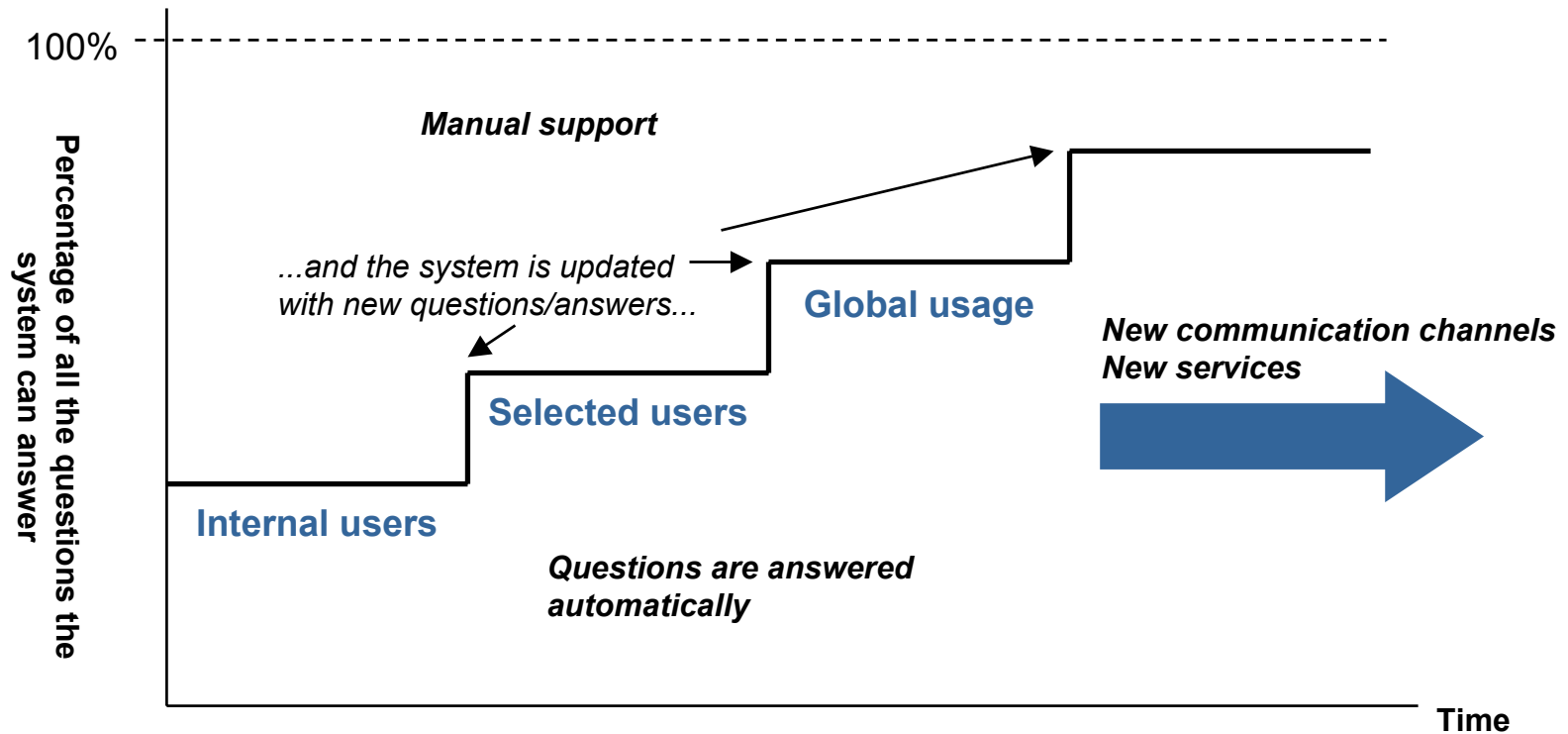
A Sorted List of Non-answered Questions Constitutes the Foundation for a Decision About Updating the Service

Question	Bigram	Cos	Keyword	Cos
611	0	0.00	0	0.00
how much does your internet cost	2	0.98	2	1.00
how do I log on to internet	46	0.64	2	0.94
cancel internet	47	0.67	2	0.94
how do I cancel the phone service	8	1.00	8	1.00
how do I cancel my contract	8	0.97	8	1.00
can you close my account	8	0.94	8	1.00
how do I change pre-selection	8	0.94	8	1.00
how do I cancel my contract	8	0.81	8	0.93
I want to cancel gn, how do I do that	8	0.70	8	1.00
can I cancel my pre-selection	8	0.67	8	1.00
I want to close my account	8	0.65	8	1.00
cancel pre-selection	8	0.50	8	1.00
I want to cancel my pre-selection	48	0.49	8	0.95
how do I close my phone	8	0.84	10	0.83
what is the duration of my contract	9	0.64	11	0.35
can I cancel my order	12	0.97	12	1.00
how long return time do I have	12	0.66	12	1.00



Non-answered questions are sorted in different ways. Sortings are classified in an intelligent manner and constitutes the basis for updating the service.

The Service Is Introduced Step by Step to Verify the Saving and Lowering the Risk.



Why Dialogue Technologies

Dialogue Technologies offer:

- solutions where the user asks questions in his/her own language with his/her own words – and gets a correct answer.
- analysis of what your customers really want to know about your products and/or services – perhaps the best market information you can get!
- servicing customers through the channel that fits them best: speech, SMS, or web.
- efficient information management by retrieving answers directly from a database or from an existing electronic document
- everything you need to get started and to administrate your Q&A system, with powerful development tools and extensive and excellent documentation.



With Dialogue Technologies you will have a Q&A system up and running in 4-6 weeks!

Does This Sound Interesting – Contact Us for More Information and a Discussion

Björn Alsén, VP Marketing & Sales

+46 709 588 183

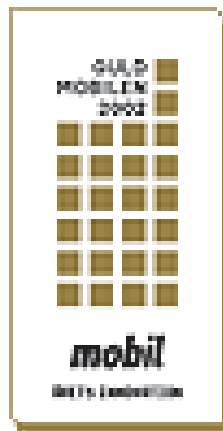
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You can also so take a look at www.dialoguetech.com



Dialogue Technologies is awarded “Guldmobilen” for the “Innovation of the year” 2002. A jury consisting of Östen Mäkitalo, Håkan Lantz, Hjalmar Winbladh, Weje Sandén, and Niclas Lidström awarded the prize to Dialogue technologies with the motivation;

”With this solution a great step is taken in the development of man-machine communication”.