This handout summarizes some of the key findings from my master thesis entitled "Navigation as Rhetoric - Effective communication in governmental information spaces". The thesis is submitted for review by the Department of Media and Communication at the University of Oslo as of February 28th 2005.

Are Halland - are@halland.us

The Navigation Pyramid

Why a navigation pyramid?

Many observers have stated that navigation by and large is ignored, and that users look straight for the content - or hit the Back button [15, 12, 18].

This should however not lead us to conclude that navigation is pointless anyway and needs no focus in the design process. In stead we need to conceptualize navigation in different levels.

To this end I introduce the navigation pyramid. The pyramid serves several functions, but is primarily a synthesis of different theoretical perspectives on navigation and a roadmap for developing better navigation.

Suggested use of the navigation pyramid

Use it to get a grasp of the large and growing theoretical field

Use it as a tool to prioritize when designing navigation

Use it as a communication tool when talking to clients and co-workers

Use it to evaluate navigation design

Use it as a roadmap for building better navigation

Navigation defined

A simple definition is that "navigation is movement in information space (and ways to facilitate that movement".

More specifically, navigation is a metaphor used to describe the process of moving around in information space, given the inherent keyhole-effect in digital media (see illustration). Navigation - or navigation design - is also often commonly as a description of various devices and schemes used to facilitate navigation.

Navigation as rhetoric

Rhetoric was defined by Aristotle some 2.500 years ago as "(...) the faculty of discovering in any particular case all of the available means of persuasion" [1]. In other words, rhetoric is an open theoretical framework for discovering and prioritizing goals, navigation devices, and all other "means of persuasion" in a given context.

I define rhetorical navigation as "persuasion by discovering and prioritizing all of the available means of navigation in a given context".

An example of rhetorical navigation



All global, local and functional navigation have been deliberately removed, creating persuasive effects by means of the "tunneling technique" [8].

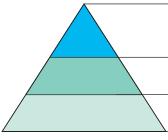
Exploiting the "kairos principle" (or "the seducible moment" in the words of Jared Spool [21]) to present gift options.

Exploiting the "information shape" [5,6] or genre of e-commerce checkout process.

Building credibility and trust by clearly identifying the brand (similar to "pathos" in rhetoric) and presenting relevant but discrete options for contact and help.



The Navigation Pyramid



3. Rhetorical navigation

2. Relevant navigation

1. Rudimentary navigation

The pyramid is inspired by Maslow's pyramid of needs, i.e. needs in lower levels must be fulfilled before moving up in the pyramid.

	Users need to	Available methods	Navigation devices
3. Rhetorical navigation (persuasion and understanding)	Avoid information overload Get explicit recommendations Be able to trust the information source Semantic understanding of the information space	Rhetorical process: find and prioritize among "all available means of persuasion" Business processes to align the organization with user goals	Any available mean - Information shape [5,6] - Best Bets - Locomotional design [13] - Design for credibility [9] - Design for persuasion [8] - Avoid navigation overload
2. Relevant navigation (facilitating task completion)	Get their work done Get relevant and prioritized links Get information scent and have clearly marked paths towards their information seeking goal	Goal-directed design [3] - personas - scenarios Advanced wayfinding [10]	Contextual navigation Information foraging and scent [19] Faceted classification Focus+context techniques [14] Effective View Navigation [11]
1. Rudimentary navigation (goes without saying)	Be able to navigate Get an intuitive overview of the info space Avoid disorientation and cognitive overhead [2] Have fallback mechanism if they get lost	"Classical" navigation design [7, 20] Wayfinding principles Usability guidelines Answering "three questions of navigation	Global and local navigation Functional navigation (sitemaps, indexes, search, etc) Give feedback and provide affordance [17] Avoid sender-centered orgchart navigation [16] Minimize transitional volatility [4]

- eferences

 Aristoteles, Rhetoric, in J. H. Freese, ed., The Perseus Digital Library, 2005. http://www.perseus.tufts.edu/cgi-bin/ptext?lookup=Aristot.+Rh.+toc

 J. Conklin, Hypertext: an introduction and survey, IEEE Computer Society Press (1987), pp. 17-41.

 A. Cooper, About Face 2.0: The Essentials of Interaction Design, Wiley, 2003.

 D. R. Danielson, Transitional Volalitiji in Web Navigation: Usability Metrics and User Behavior., Symbolic Systems Program, Stanford University, 2002. http://www.stanford.edu/~davidd/MastersThesis/

 A. Dillon, Spatial-Semantics: How Users Derive Shape from Information Space., JASIS, 51 (2000), pp. 521-528. http://www.ischool.utexas.edu/~adillon/pubs.html

 A. Dillon and M. Vaughan, "It's the journey and the destination": Shape and the emergent property of genre in evaluating digital documents, New Review of Multimedia and Hypermedia, 3 (1997), pp. 91-106. http://www.ischool.utexas.edu/~adillon/publications/journey.html

 J. Fleming, Web Navigation Designing the User Experience, 1998.

 B. J. Fogg, Persuasive technology: using computers to change what we think and do, Morgan Kaufmann, Amsterdam, 2003.

 B. J. Fogg, C. Soohoo, D. R. Danielson, L. Marable, J. Stanford and E. R. Tauber, How do users evaluate the credibility of web sites? A study with over 2,500 participants, DUX2003, Designing for User Experiences, 2003. http://www.aiga.org/resources/content/97/8/documents/fogg.pdf B. J. Fogg, C. Soohoo, D. R. Danielson, L. Marable, J. Stanford and E. R. Tauber, How do users evaluate the credibility of web sites? A study with over 2,500 participants, DUX2003, Designing for User Experiences, 2003. http://www.alga.org/resources/content/9/7/8/documents/fogg.pdf
 [10] M. A. Foltz, Designing Navigable Information Spaces, Massachusetts Institute of Technology, 1998. http://citeseer.ist.psu.edu/foltz98designing.html
 [11] G. W. Furnas, Effective View Navigation, CHI97, 1997.
 [12] M. Hurst, The Page Paradigm, Goodexperience.com (2004). http://www.goodexperience.com/blog/archives/000028.php
 [13] S. Jul, From Brains to Branch Points: Cognitive Constraints in Navigational Design, Computer Science and Engineering, University of Michigan, 2004. http://www-personal.umich.edu/~sjul/dissertation/design_principles.htm
 [14] J. Lamping, R. Rao and P. Pirolli, A Focus+Context Technique Based on Hyperbolic Geometry for Visualizing Large Hierarchies, CHI'95, 1995.
 [15] J. Nielsen, Is Navigation Useful? Alertbox, 2000. http://www.useft.com/alertbox/2000109.html
 [16] J. Nielsen, Top Ten Mistakes of Web Management, Alertbox, 1997. http://www.useft.com/alertbox/9706b.html
 [17] D. A. Norman, The psychology of everyday things, Basic Books, New York, 1988.
 [18] H. Olsen, Navigation Blindness, GUUUl.com, 2004. http://www.guuui.com/issues/01_05.php
 [19] P. Pirolli and S. K. Card, Information Foraging, Psychological Review, 106 (1999), pp. 643-675. http://www2.parc.com/istl/projects/uir/publications/all_pubs_abstracts.html
 [20] L. Rosenfeld and P. Morville, Information Architecture for the World Wide Web, 2003.
 [21] J. Spool, The Search for Seducible Moments, UlE.com (2002). http://www.uie.com/articles/seducible_moments/