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Bachelor's Thesis Seminar Spring 2019 (57C99902)

https://mycourses.aalto.fi/course/view.php?id=20077

Johanna Bragge, Olga Gorskikh & Markku Tinnilä

Introductory lecture 1

January 15, 2019

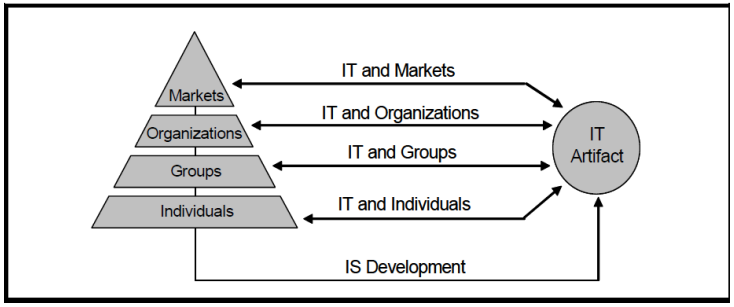
Contents of today's lecture

- Introduction of the 3 research fields and supervisors in ISM - Information and Service Management
- Objectives for a Bachelor's Thesis and Seminar
- Requirements for the Bachelor's Thesis seminar
- Research as a process
  - Identifying your topic
  - Formulating your research question/problem
  - Theories and theoretical frameworks
  - Searching for source material
- How to build a Research Plan

3 Research Fields / Disciplines in ISM

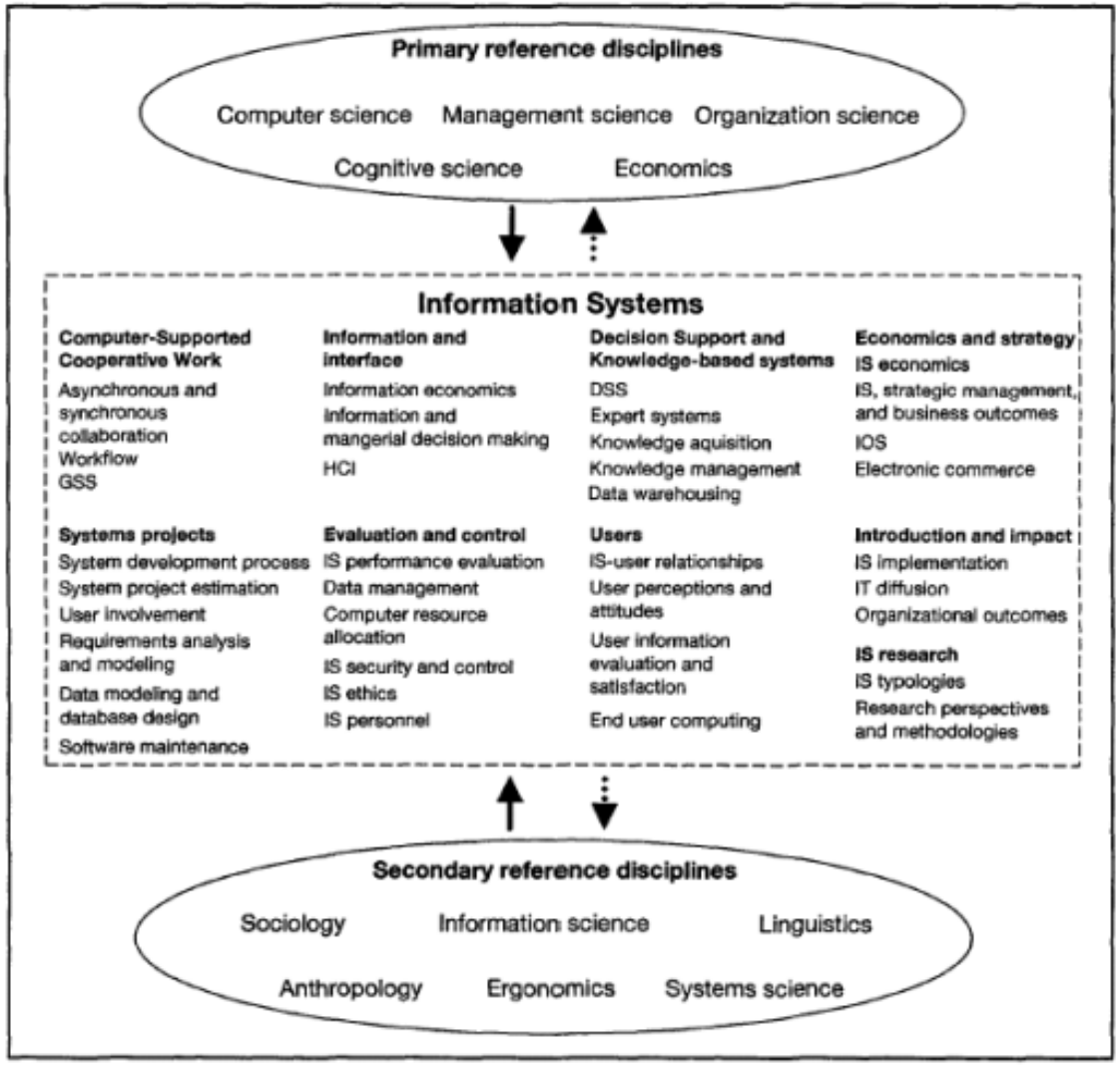
- Management Science (MS)
  - Including Quantitative Methods of Economics and Management Science
  - Responsible for the **Business Analytics** specialization in ISM
- Logistics
  - Including Operations Management (OM), Supply Chain Management (SCM), Technology Management, Services
- Information Systems Science (ISS), see next slide

Main research fields in ISS and its reference disciplines



(Sidorova et al., 2008)

Alternative / Aggregated view of the topics researched in Information Systems Science (ISS)



(Khazanchi and Munkvold, 2000)

Supervisors

- **Johanna Bragge**
- Ph.D. in Management Science 1997
- Docent and Senior University Lecturer of Information Systems Science
  - http://people.aalto.fi/johanna_bragge/
  - Fields of interest: topics in information systems science, e-collaboration, collaboration engineering, text mining, research profiling, service co-creation, crowdsourcing, social software, gamification, big data analytics (managerial view), binge watching
- Chydenia G5.10, office hours on agreement, also in Otaniemi
- tel: 040 - 5301 032
- e-mail: johanna.bragge@aalto.fi

Supervisors (2)

- **Olga Gorskikh**
- Ph.D. in Quantitative Methods 2018
- Postdoctoral Researcher
  - http://people.aalto.fi/olga.gorskikh
  - Fields of interest: topics in management science and business analytics, such as machine learning, artificial intelligence, evolutionary computation, semantic information retrieval, statistical natural language processing, multiobjective optimization, sentiment analysis
- Chydenia 4th floor, H4.31, office hours on appointment, also in Otaniemi
- Tel: 046 625 64 33
- E-mail: olga.gorskikh@aalto.fi

Supervisors (3)

- **Markku Tinnilä**
- Ph.D. in Logistics 1997
  - Docent and Senior university lecturer of Logistics
  - Fields of specialization: Topics in logistics, e-business, service processes, service modularization, business models
- Chydenia G5.29, office hours on agreement, also in Otaniemi
- Tel: 040 - 7736 220
- E-mail: markku.tinnila@aalto.fi

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Objectives for a Bachelor's Thesis and Seminar

Objectives of a Bachelor's Thesis

- To familiarize yourself with the main concepts, theories, research traditions, and research findings in a research discipline
- To practice independent scientific thinking by setting up research questions and studying a specific topic
- To get to know literature databases, to find relevant literature, and to apply it for resolving a research question
- To write a structured, scientific report
- To learn to review scientific writings
- To practice scientific discussion and argumentation.

(Kemppainen and Latomaa, 1999, 30)

What a Bachelor's Thesis is and what is it not?

- Bachelor's thesis is a structured, written report which
  - Focuses on a specific research question
  - Builds on relevant sources
  - Follows scientific practices
  - Represents personal reasoning and thinking of the writer.

- Bachelor's thesis is **not** a collection of summaries, quotations, plagiary, or opinions.
  - You should not copy-paste any parts from scientific articles!
  - *TurnitIn* plagiarism detection software is **always used** in BIZ when submitting Bachelor's theses to school's thesis submission boxes.

(Kemppainen and Latomaa, 1999, 30, 4)

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Requirements for the Bachelor's Thesis Seminar

Requirements – summary

- A Research Plan
- A Research Profiling assignment using library's databases
- Presenting your research plan in the seminar
- A Bachelor's Thesis
  - about 20-25 pages
- Presenting your research in the seminar (once)
- Acting as an opponent in the seminar (twice), AND delivering the comments in writing (A4) in advance
  - By 11.00 on the day of the presentation to MyCourses
- Active participation in the seminar sessions - ***the seminar will also be graded with 0-5, separately from the thesis!***
- After the thesis is written: write the Maturity test (57C99903)

Phases of the Bachelor's Thesis Seminar (2 + 10 + 0 ECTS = Seminar + Thesis + Maturity test)

- **Introductory lectures** on **15.1., 22.1.** and **29.1.2019**
- Discussing possible research topics with supervisors and other professors

GOAL:
Final version of Bachelor's Thesis submitted by 23.5.2019

- Creating a **research plan** (1-2 pages) by **31.1.2019**
- Conducting a **research profiling assignment** (5 pg.) by **31.1.2019**
- Division to groups based on plans
- Discussing the plans in 3 groups on **5.2.2019 (JB, OG or MT)**

- Independent working
- Reporting on progress (via e-mail or meetings)

- Presenting own **thesis draft** in a seminar session
- Working **twice as opponent** for other seminar papers
- **Sessions ca 16.4. - 21.5.2019**
- **Write the Maturity test after the thesis is done!**

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Research as a Process

Research as a process

- Identifying your **topic** area
- Formulating a research problem, **question** or a task
- Selecting a research **approach** or framework
- **Building on the previous phases**,
  - Search for source material
  - Study and work on your source material
  - Use the sources thoughtfully to answer your research problem/ question
  - Write up your findings into a structured report

(Kemppainen and Latomaa, 1999, 34)

NOTE: THE PROCESS IS NOT ALWAYS LINEAR!

Some hints for your research process

- One factor for successful research is that **you are interested in your topic**
- It helps if you are already somewhat familiar with it
- It is all right if your topic changes or becomes more focused during your research process as you get more familiar with it

Create a realistic schedule for your research project!

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Identifying your topic

How to choose a topic? 1(2)

- Where to find topics? E.g.
  - Courses and scientific literature
  - Place of work, other organizations
  - Media (news, blogs, magazines etc.)
- Does the topic interest you?
- Do you have experience on the topic?
- Why is the topic worth studying?
  - Does the topic have theoretical relevance?
  - Does the topic have practical relevance?

How to choose a topic? 2(2)

- Is it possible to study the topic?
  - Focused enough (to avoid a too shallow or narrow-minded approach)
  - Availability of source material?
- Is the topic current or new?
- (Is it possible to continue with your topic in Master's Thesis research?)
- Is there a potential conflict e.g. with confidentiality issues? Can you resolve it?

Defining and focusing your topic

- A reasoned, specified area that you are able to manage in the scope of the Bachelor's Thesis
  - You should be able to complete the thesis in the given time frame and effort (2+10 credit points)
  - Be realistic in setting the timetable!
    - Get started right away and do it in small portions – instead of working full days in the last 2-3 weeks.

The ”funnel” approach

- Interested in e.g. outsourcing?
  - What are the main questions that have been investigated in the field?
  - What are the main theories about the topic?
  - What are the key sources?
  - What evidence is lacking, contradictory, inconclusive or limited?
  - Do you know of particular issues companies are having in relation to the topic?
  - Why is it still important to investigate the topic?

How to find out more about your potential topic?

- Literature review
  - Good start: material from relevant courses
  - Scientific publications: read a selection of newer articles early on to find interesting topics or research gaps
    - Utilize the results of your Research profiling assignment early on!
  - Text books: secondary material
- If you are planning a case study, get to know how the case organization works, e.g.
  - Interviews
  - Other material, e.g. the external and internal communication material, descriptions of the procedures, etc.

Examples of 2007-2017 ISM BSc Theses

- *Peak-time process analysis in Rafla cafeteria*
- *Using a Flexible Queuing Model to Achieve Improved Efficiency in Appointment Scheduling - Case Finnish municipal dental healthcare*
- *Network Neutrality Legislation. Anticompetitive Issues in Internet Tier Structure*
- *ERP System Selection in Small and Medium-Sized Finnish Enterprises*
- *Monte Carlo simulation in evaluating project credit risk*
- *The Dynamics of Supply and Demand in the Long Tail Economy*
- *The Enabling Role of IT in Value Network Based Private Banking*
- *Commercial Utilization of Digital Footprints - Affecting Customer Behavior by Utilizing Online Data*
- *Instant Messaging in Enterprise Context*
- *Review of RFID Technology in Supply Chain Management*
- *Utilizing social media in customer service - Case Lindorff*
- *Ex-post evaluation of growth challenges in a small software company. Case Ecolane*
- *Text Data Analysis. Comparison of Processes and Tools*
- *Techniques for Mining Transactional Data for Personalized Marketing Actions*
- *Real money trading of virtual goods*
- *Problems with IoT security and consumers' attitudes towards it*
- *Modelling and solving logistical problems with combinatorial optimization. Case Parmatic*

See recent ISM BSc thesis PDF's from the **aaltodoc** database:
http://libguides.aalto.fi/c.php?g=410651&p=2796908

https://aaltodoc.aalto.fi

Aaltodoc

Aaltodoc publication archive consists of full text materials produced in the university, such as theses, journal articles, conference publications and research materials produced by the schools of Aalto University. Read more about the service. You can start by browsing the collection or by searching it with the search box on the right.

Collections in archive

Select a community to browse its collections.

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- 5 Työpaperit / Working papers [214]
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- 6b Artikkelit / Articles from Research informa
- 7 Lehdet / Journals [9]
- 8 Lähdekoodit / Source codes [1]
- 9 Vuosikertomukset / Annual reports [108]

Recently Added

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Search within this collection or list all by leaving the search field blank.

Search term(s): Go

Tekijänoikeussyistä pääsyä Aalto-yliopiston tekniikan korkeakoulujen (CHEM, ELEC, ENG, SCI) kandidaatintöiden kokoteksteihin on rajoitettu. Opiskelijat ja ulkopuoliset asiakkaat voivat tutustua töiden kokoteksteihin Aalto-yliopiston kirjastoissa. Henkilökunnalla on pääsy kokoteksteihin kirjautumalla palveluun. (Katso lisätietoa)

Due to copyright issues the access to the full-text files of the Bachelor's theses of the Schools of Technology (CHEM, ELEC, ENG, SCI) has been limited. Students and other customers can get to the full-texts of the theses from the workstation of the Aalto University Libraries. Aalto University staff can access the f information)

Collections in this community

- [kand] Insinööritieteiden korkeakoulu / ENG [3128]
- [kand] Kauppakorkeakoulu / BIZ [408]
- [kand] Kauppakorkeakoulu / BIZ (Open Access) [247
- [kand] Kemian tekniikan korkeakoulu / CHEM [1171]
- [kand] Perustieteiden korkeakoulu / SCI [2245]
- [kand] Sähkötekniikan korkeakoulu / ELEC [2263]
- [kand] Taiteiden ja suunnittelun korkeakoulu / ARTS
- [kand] Taiteiden ja suunnittelun korkeakoulu / ARTS

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Search

"Information and service management"

Add filters

Showing 10 out of a total of 22 results for collection: [kand] Kauppakorkeakoulu / BIZ. (0.116 seconds)

1 2 3 Next Page

The Effect of Multiple Air Traffic Program's Variables on Fuel Efficiency among Wide- and Narrow-body Aircrafts: Case Finnair
Heinonen, Rui (2017)

Kauppakorkeakoulu | *Bachelor's thesis*

Choose a Login Method

Log in via:

- Password Authentication (Administrators)
- Shibboleth Authentication

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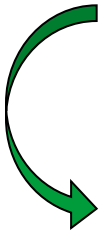
Formulating your research question / problem

Different types of research problems, Research Methodologies

How to formulate a research question?



- Research topic
  - General theme containing the main idea of the research
  - Define and focus your topic into sub-topics and research problems
- Research question(s) or task(s)
  - Can you phrase your problem into an explicable question?
  - A good research question for a bachelor's thesis
    - is focused, meaningful, and feasible
    - must be small enough to be thoroughly covered within the thesis
    - must not be too small (i.e. trivial) for the thesis to lose meaning
  - Feasible? One must be able to handle the methodology and acquire the required data
  - The title of your research report should reflect your research question(s)

Different types of research problems

- Theoretical studies
  - Concern problems on concepts, aspects, models, and theories in the research discipline
  - The previous research (theories, literature) as research material
- Empirical studies
  - Concern an event or a phenomenon in the real world
  - New information on the phenomenon is acquired with systematic methods
- Not easy to draw the line between these two
  - In every empirical study, there are theoretical elements
  - In many theoretical studies, some of the material (at least, secondary material) is empirical
  - (Uusitalo 1991, 60-62)

Theoretical and empirical research

- Theoretical research:
  - Theoretical reviews, analyses of concepts, mathematical modeling, comparison of theories, cultivation of theories (development of new theories)
- Empirical research
  - Explorative (search) studies
  - Descriptive studies (What? How?)
  - Explanatory studies (Why?, Causal relations)
  - Experimental studies (e.g. in chemistry, medicine, psychology)
  - Predicting studies (e.g. extrapolation, scenario analyses)
  - Evaluation, developmental or action research
  - Constructive research (particularly in technological sciences but also in social sciences; e.g. design science research in ISS)
- (Uusitalo 1991, 60-69)

Examples of Research Methodologies

- Framework or Conceptual Model
- Literature Review / Literature Analysis
- Case Study (or Multiple case studies)
- Survey
- Interviews
- Laboratory Experiment
- Field Study or Field Experiment
- Ethnography
- Action Research
- Mathematical Models
- Secondary data

Source: Palvia et al. (2004)

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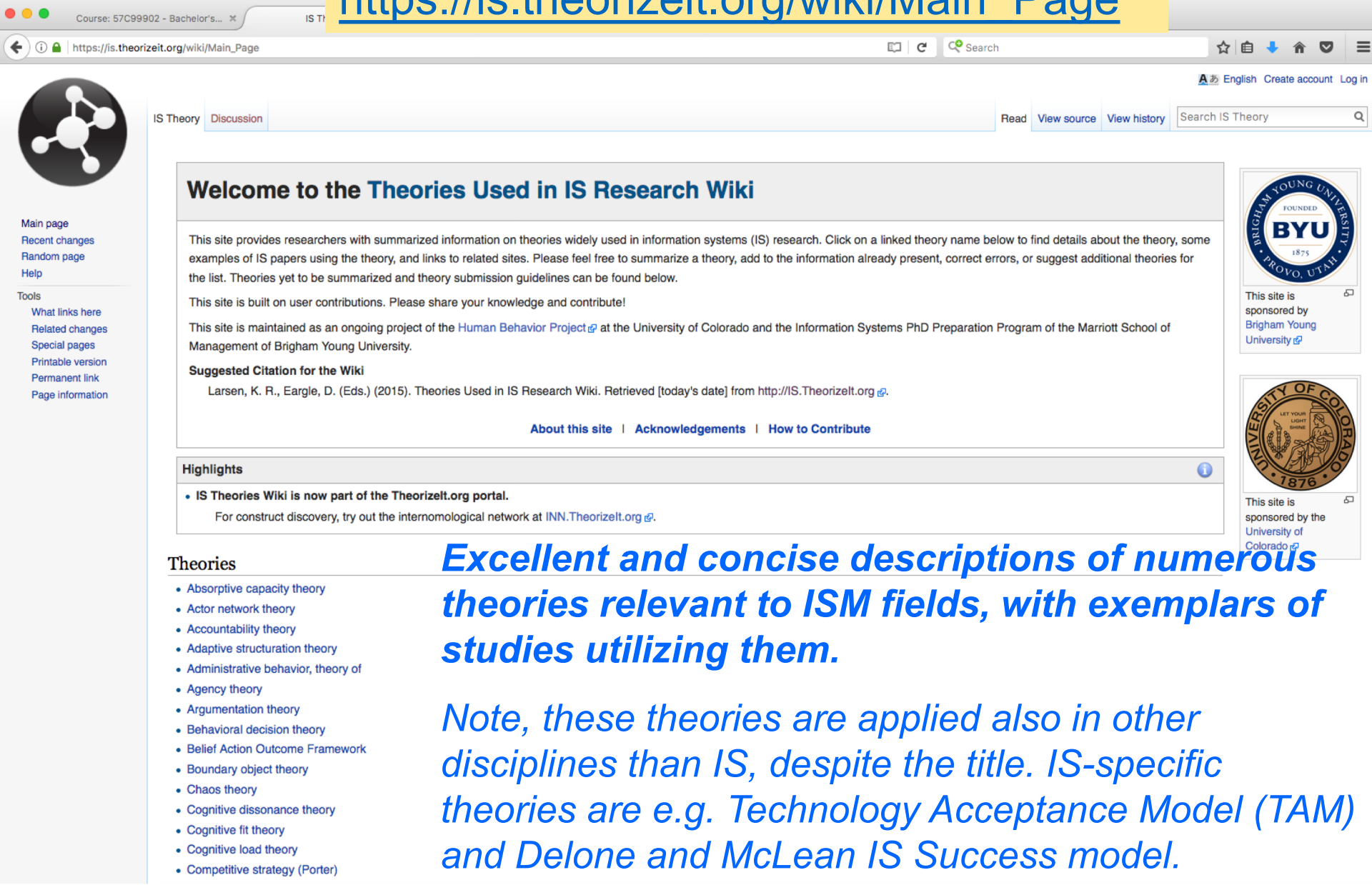
Theories and Theoretical Frameworks

https://is.theorizeit.org/wiki/Main_Page



Excellent and concise descriptions of numerous theories relevant to ISM fields, with exemplars of studies utilizing them.

Note, these theories are applied also in other disciplines than IS, despite the title. IS-specific theories are e.g. Technology Acceptance Model (TAM) and Delone and McLean IS Success model.

Larsen, K. R., Eargle, D. (Eds.) (2015). Theories Used in IS Research Wiki. Retrieved 9/1/2018 from http://IS.TheorizeIt.org

Table I Important theories and their implications for the sourcing function

Theoretical perspective	Key premise	Key insights for sourcing
Institutional theory	External forces pressure firms to behave in certain ways and not behave in others	Avoid fads. Firms should use a sourcing approach only if the approach matches the firm's strategy, not just because the approach is used by others
Resource dependence theory	Firms seek to become less dependent on others for resources, and to make other firms more dependent on them	Make when the resource is important and there are few sources Buy when the resource is unimportant and there are many sources Ally when the resource is important and there are several sources Enhance the dependency of suppliers and alliance partners
Network theory	Managing interorganizational relationships is central to success	Choose suppliers that are central to the network
Systems theory	Organizations are best viewed as part of an interwoven and intertwined system	Multiple sources should be sought in complex and uncertain environments
Resource/knowledge-based views of the firm	Unique assets and capabilities are the source of enduring competitive advantages	Do not outsource capabilities that create competitive advantage Buying and alliances may be vehicles for obtaining capabilities Pick sources with complementary capabilities
Transaction cost economics	Firms should make decisions that minimize costs	Buy when transaction costs are less than production costs
Agency theory	When one firm delegates responsibility to another, the first firm must monitor the second or risk opportunistic behavior	The costs of monitoring agents are part of the transaction costs Buy when transaction costs are less than production costs
Strategic choice theory	The decisions managers make about strategic issues are the primary driver of firm performance	A firm's strategy should drive decisions about whether to make, buy, or ally
Sociocognitive theory	The interpretations managers make of events and trends are the primary driver of their decisions	Decisions about whether to make, buy, or ally are shaped by past practices Firms with a strong identity will tend to make rather than buy or ally
Critical theory	Commerce has been a means for the powerful and privileged to exploit others for their own gain	The make, buy or ally decision should be guided by how best to improve society Suppliers and employees should not be exploited Choose providers that have been historically exploited and alienated

Useful links

- https://is.theorizeit.org/wiki/Main_Page - Theory pages
- http://aisnet.org/ - Association for Information Systems
- http://aisel.aisnet.org - e-Library of AIS, several IS conference proceedings
- https://www.informs.org/ - Association for OR and Analytics professionals
- http://www.poms.org/ - Production and Operations Management Society
- http://www.nofoma.net/ - Nordic Logistics Research Network
- http://www.ipsera.com/ - International Purchasing and Supply Education and Research Association
- http://www.euroma-online.org/ - European Operations Management Assoc.
- http://www.ifors.ms.unimelb.edu.au/tutorial/ - Int' Federation of OR Societies
- http://www.decisionarium.tkk.fi/ & http://mcda.aalto.fi/ - Aalto's SAL (System Analysis Laboratory) decision science resources
- http://optimization.mit.edu/resources.php - Optimization@MIT resources
- http://users.jyu.fi/~miettine/lista.html - Optimization and OR resources

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Searching for source material

Information retrieval, judgment, and use in research

Different types of source material

- **Scientific journal articles – your MAIN SOURCES!**
  - Aalto learning centre (e-library); electronic databases
  - Snowball effect: look up the references of the first set of articles you find
- Text books, monographs (to be used sparsely)
  - General knowledge and background information; references for literal sources
- Conference proceedings, such as HICSS 2018 https://scholarspace.manoa.hawaii.edu/handle/10125/59440
- Newspapers, business magazines, serial publications of research institutions, government publications
  - For different use in the dissertation than academic sources
- Secondary sources
  - Reference databases, bibliographies, etc.

Examples of scientific publications in OM / OR / MS and Management

OM / OR / MS journals	
Excellent / Specialist journal	**Good/ General journal**
Management Science (MS)	Supply Chain Management Review
Manufactring and Service Operations Management (MSOM)	Int'l Journal of Logistics Mngmnt and Physical Distribution (IJLMPD)
European Journal of Operations Research (EJOR)	Production and Inventory Management (PIM)
Journal of Business Logistics (JBL)	Production Planning and Control (PPC)
Operations Research (OR)	Journal of Purchasing and Supply Management (JPSM)
Transportation Science (TS)	Omega
Production and Operations Management (POM)	Interfaces
International Journal of Operations Research (IJOR)	IIE Transactions
Journal of Supply Chain Management (JSCM)	International Journal of Production Economics (IJPE)
Journal of Operations Management (JOM)	Supply Chain Management: an International Journal (SCMIJ)
International Journal of Operations and Production Management	Journal of Operational Research Society

Management journals	
Research & Methods / Specialized	**Motivation / General**
Strategic Management Journal	Harvard Business Review (HBR)
Marketing Science	Sloan Management Review
Organization Science	California Management Review
Decision Sciences	European Management Journal
Economica	Long Range Planning
Academy of Management Journal	Industrial Marketing Management
Academy of Management Review	Journal of Marketing
	Journal of Retailing

Major ISS journals (AIS ”Basket of 8”)

MISQ – Management Information Systems Quarterly (7.268)

JMIS – Journal of Management Information Systems (2.356)

ISJ – Information Systems Journal (4.122)

JIT – Journal of Information Technology (2.515)

ISR – Information Systems Research (2.763)

JAIS – Journal of the Association for Information Systems (2.109)

EJIS – European Journal of Information Systems (2.819)

JSIS – Journal of Strategic Information Systems (3.486)

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(in parentheses their 2016 *InCites Impact Factors*)

http://ais.site-ym.com/?SeniorScholarBasket

Sorting the wheat (good stuff) from the chaff (rubbish)

- Look for publications by authorities in the field, keynote speakers at conferences, people who other people cite in references, on the editorial board of journals etc.
- Check the quality of the source - journal Impact factors, paper/author citations indexes, e.g.
  - An Impact Factor of a journal is a good indicator of its quality. If the impact factor is over 1.0, it is regarded as a high quality journal.
  - Journal ranking used in Finland: Publication Forum (Julkaisufoorumi):

    http://www.tsv.fi/julkaisufoorumi/haku.php

  An alternative is the ABS list used in the UK:

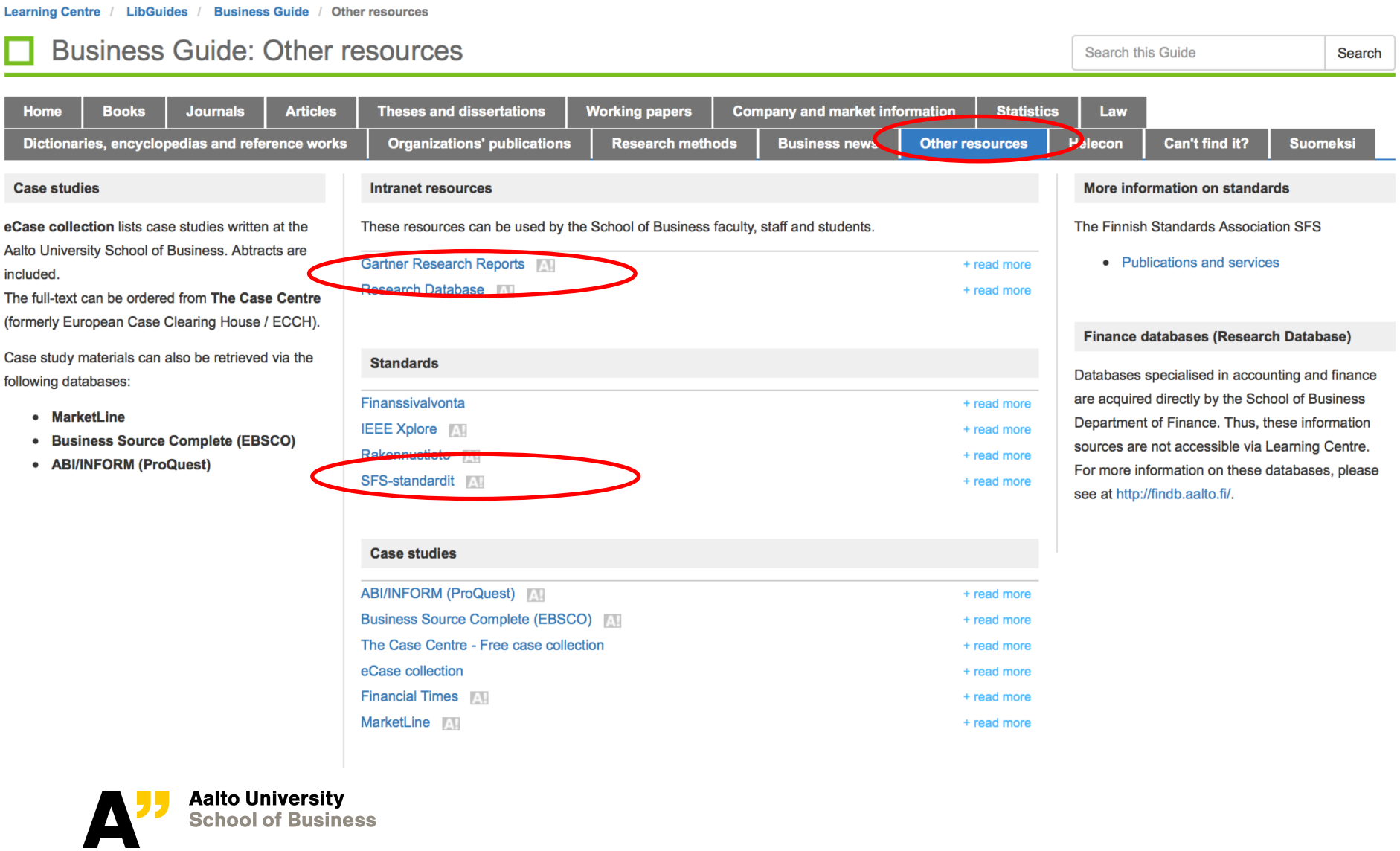
  http://charteredabs.org/academic-journal-guide-2015/
- Check the authority of the site author/owner. Is it a reputable University? Reputable organisation/company ?
- Follow links from reputable sites and don't trust everything you find via Google

Electronic sources

- Aalto University Learning Centre's databases
  - In Aalto network (or using libproxy when off-campus): Digital Campus Library http://libguides.aalto.fi/business
  - Ebsco, ProQuest, ISI Web of Knowledge (WoS), ACM, IEL Online, ScienceDirect, SpringerLink etc.
  - Helecon International, Scima, Thes and Bild
- http://scholar.google.com
- Conference proceedings
- Homepages of professors and researchers
- ***More on electronic journal databases in the second introductory lecture!***

NOTE: You can access Gartner's Research Reports and ISO Standards via Other resources tab!

Excellent background reports for all technology related topics!



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A Research plan

A Research plan

- A Research Plan (1-2 pages)
  - Return via MyCourses / Assignments by Thursday **31.1.2019** midnight
    - If you wish, you can submit your research plan earlier (+notify teacher about it); and you can continue your work as soon as your topic is accepted.
- Contents of a Research Plan (suggested outline):
  1. Motivation (why do you find it important to study the topic, theoretical & managerial motivation)
  2. What is your topic area and specific research problem(s)/question(s)
  3. Objectives of your research
  4. Examples of important previous research articles on the topic and/or main theory to be used
  5. Methodology (e.g. a literature review, case study, survey,…)
  6. Tentative table of contents (1. Introduction, *what are the planned titles for chapters 2. – 4-5.*, 6. Summary and conclusions)

  Possible reference list (for references used in the plan)

Next intro lectures on Jan 22 and Jan 29

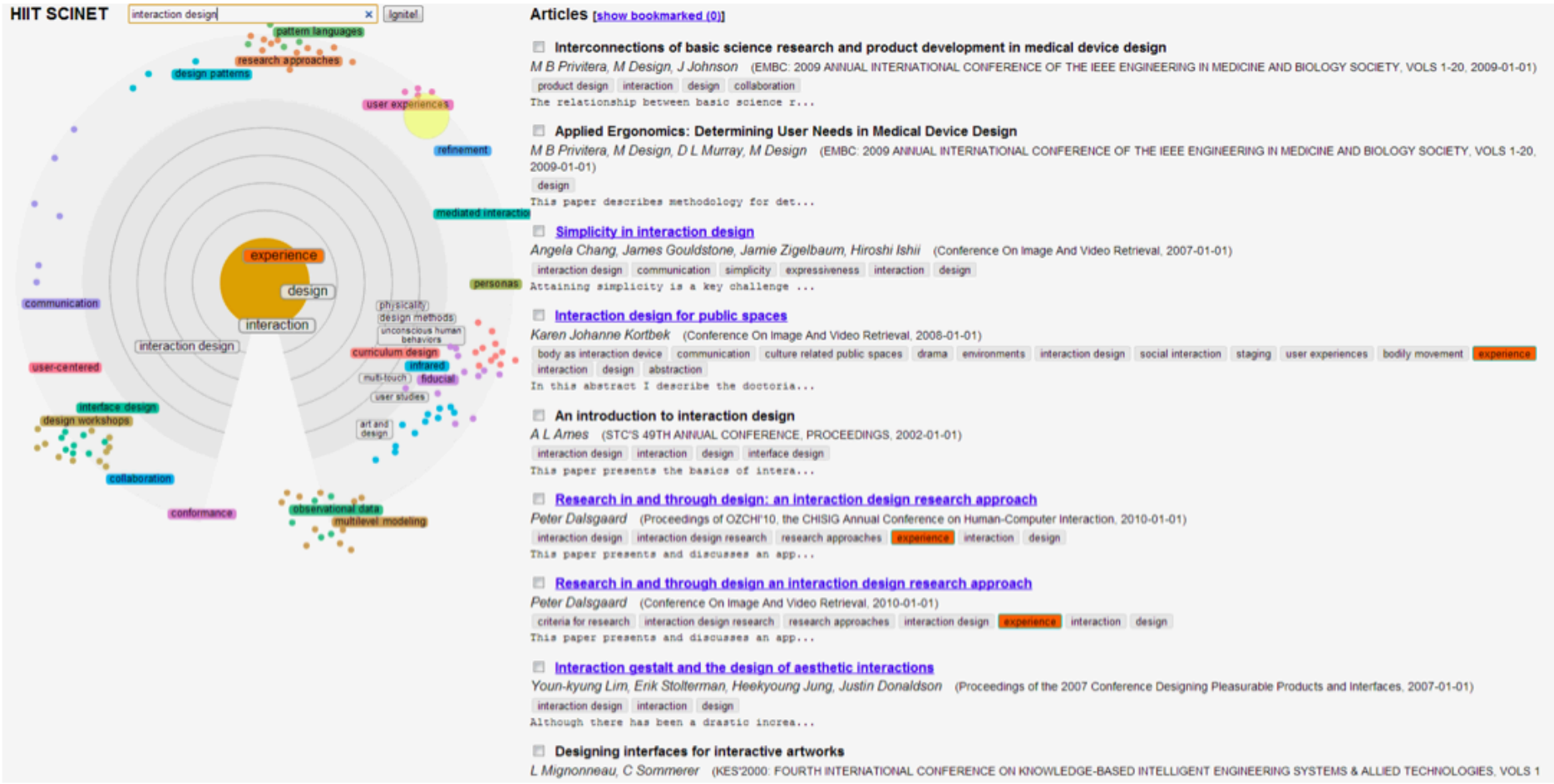
- **Topics of the 2nd introductory lecture (Johanna Bragge):**

  Introduction to information retrieval using electronic journal and citation databases at https://learningcentre.aalto.fi/

- **Topics of the 3rd introductory lecture (Markku Tinnilä):**

  Reading literature, theoretical framework, writing the thesis, correct referencing to sources, structure of the thesis, process of writing, conduct and roles in the seminar sessions.

Interactive literature search with Scinet (developed at HIIT)

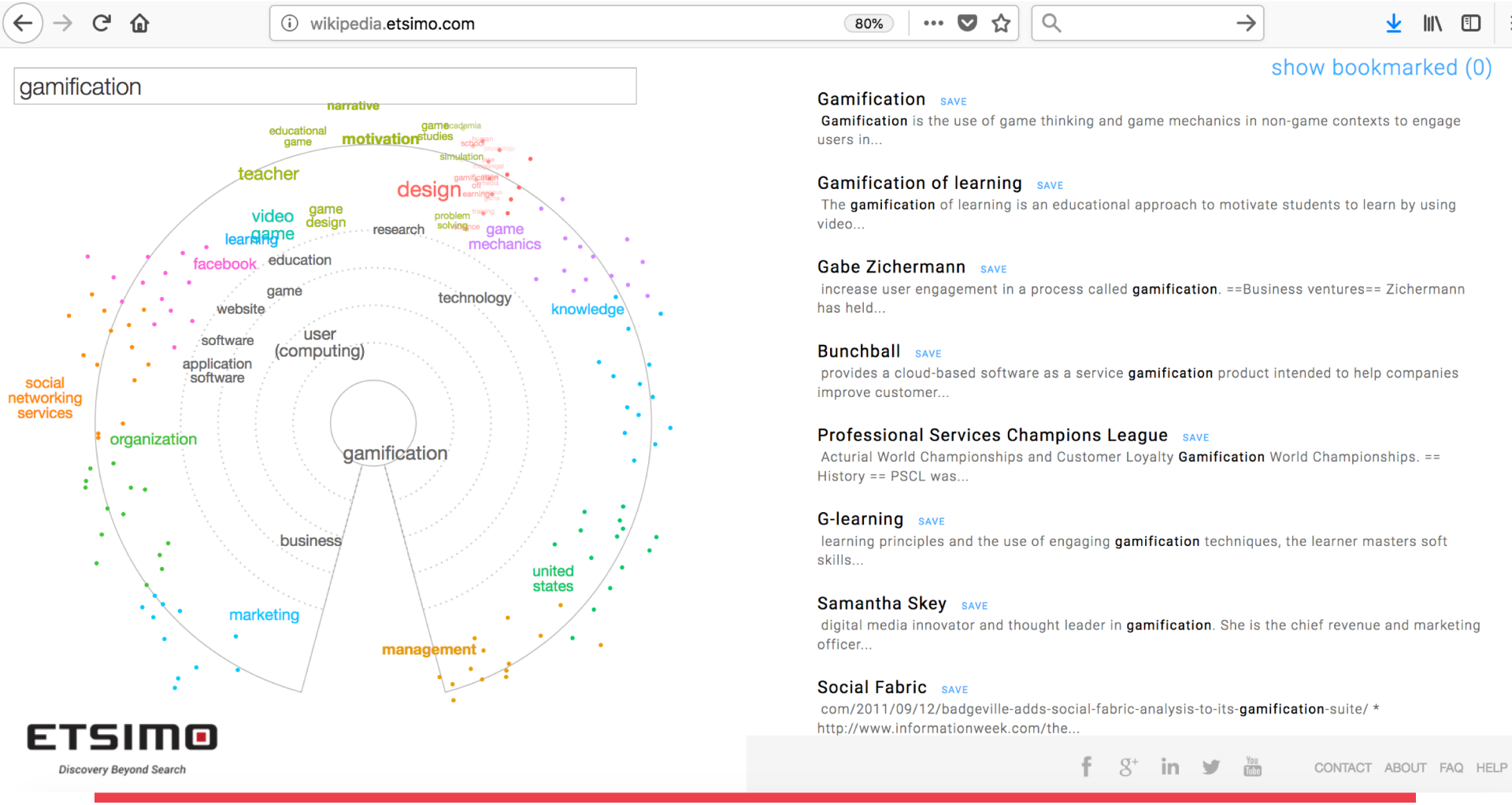


In the context of the HIIT Wide Focus Area, HIIT has developed a tool SciNet for interactive exploration and exploitation of scientific literature. Keywords are displayed using a radar metaphor. This forms a starting point for our project. Reference: Ruotsalo, T., Peltonen, J., Eugster, Manuel J.A. Głowacka, D, Konyushkova, K., Athukorala, K., Kosunen, I., Reijonen, A, Myllymäki, P., Jacucci, G., Kaski, S., Directing Exploratory Search with Interactive Intent Modeling. In: Proceedings of the ACM International Conference on Information and Knowledge Management (CIKM 2013),

Source: http://www.reknow.fi/

See also http://www.tiede.fi/artikkeli/uutiset/suomalaistutkijat_tekivat_uudenlaisen_hakukoneen

Scinet's search engine has now been commercialized by **Etsimo** - see demosite at http://wikipedia.etsimo.com



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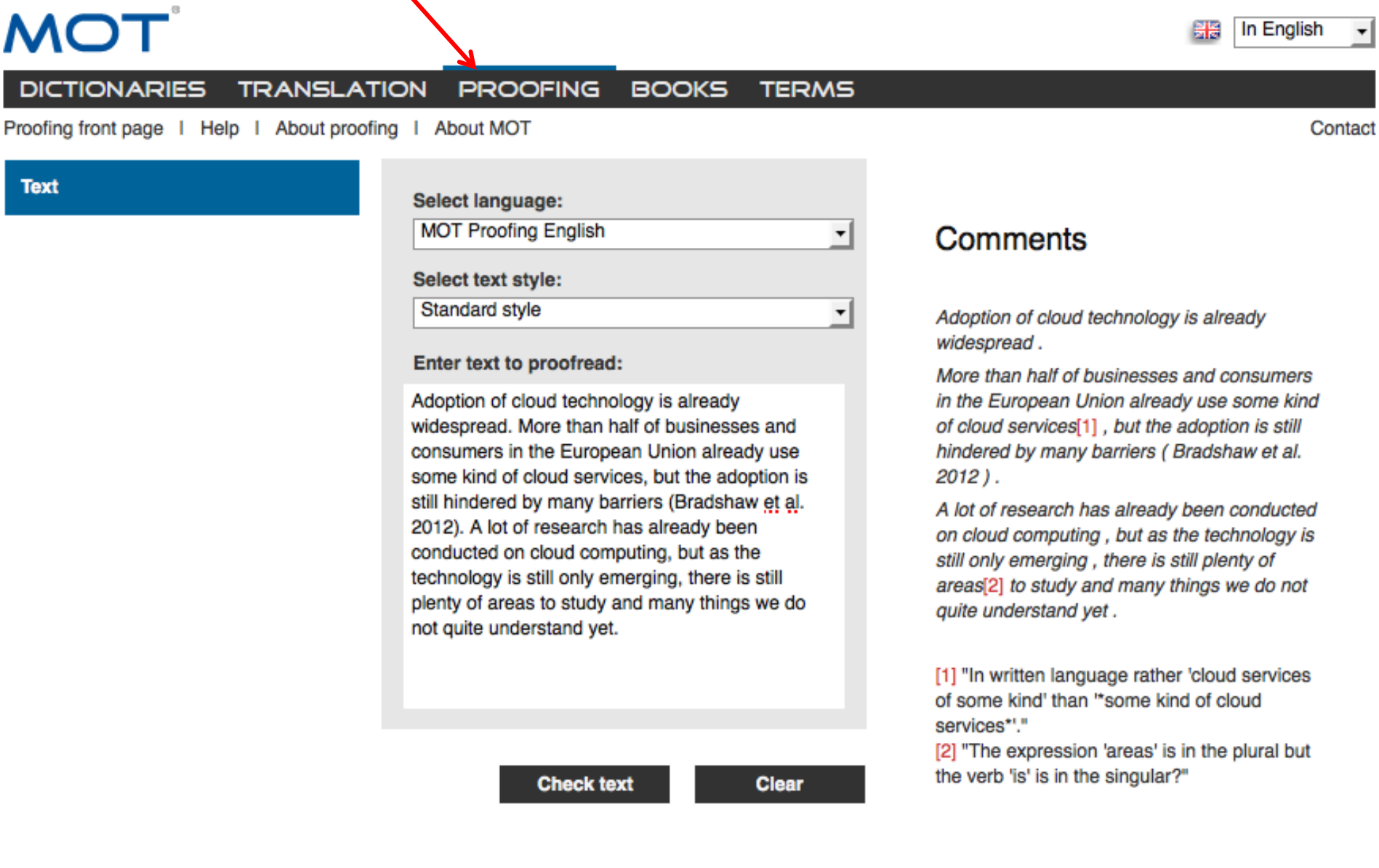
Note: **MOT Dictionaries at library's Business Guide offer now also Language Proofing for English texts!**



Handy resource for writers! (in Finnish)

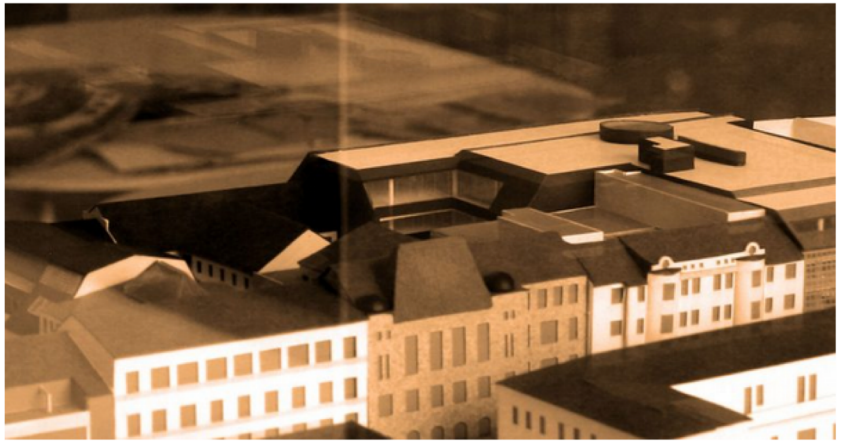
http://blogs.helsinki.fi/kielijelppi/kirjoitusviestinta/

Kielijelppi – Språkhjälpen

Jelppiä akateemiseen viestintään Hjälp för akademisk kommunikation

- Etusivu
- Puheviestintä
- **Kirjoitusviestintä**
  - Tieteellinen kirjoittaminen
  - Opiskelijoiden tekstilajeja
  - Kirjoittamisen aluksi
  - Kirjoitusvaiheet
  - Mikä tekee tekstistä sujuvan
  - Lähteiden käyttö ja lähdeluettelo
  - Kirjallisuus ja linkit, kirjoitusviestintä
- Tekijät

Kirjoitusviestintä



Kirjoittaminen on prosessi, jonka lopputulos, sujuva ja huoliteltu teksti, palvelee tarkoitustaan ja välittää viestinsä lukijalle mahdollisimman esteettömästi. Kirjoittaminen kuuluu oleellisesti myös opiskeluun ja tutkimiseen, sillä se jäsentää ajattelua ja synnyttää uusia ideoita. Kirjoitustaito on tärkeä ammattitaito myös työelämässä. Tässä osiossa tutustutaan kirjoitusprosessin eri vaiheisiin, tieteellisen kirjoittamisen perusasioihin sekä tekstin viimeistelyyn.

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