Welcome to PhD course: Design Science in IT at Roskilde University, 28-30 May 2008

We look forward to see you next Wednesday. On the following pages you can find the final course plan. All the readings can be found at:

http://cis.gsu.edu/~rbaskerv/dsit/DesSciITReadings.zip

except for the book by Simon that you will have to buy or borrow.

Please note that you have been assigned to present a paper (see the last page). We expect that you are well prepared and that your presentation can provoke a good discussion. You can count on having at least 20-25 minutes available.

Regards
Richard & Jan
Plan for PhD course: Design Science in IT
Richard Baskerville
Jan Pries-Heje

Outline of Sessions

1. Generative Design
   The seminar discovers the basic notion of design as one form of human invention and innovation. We consider the deduction of theory from design practice, and the logical operations on theory in practice.

2. The Relationship between Design and Research
   The seminar explores how design draws on knowledge and produces knowledge. This includes research about design and design as research. Design as research can be for practical design purposes, for purposes of building scientific knowledge, or both. We distinguish between design science and design research.

3. Design Science
   The seminar explores Simon’s science of the artificial, i.e., the science of design. This includes scientific research about design, designing with scientific research, and the notion of “scientific” design as a similar metaphor to “scientific” management.

4. Participatory Design
   Building on the Scandinavian tradition, the seminar explores views of sociotechnical research about design, and designing with sociotechnical research.

5. Design Research
   Collocating the Scandinavian tradition and reference concepts from architecture, the seminar works concepts of episodic research in design activities. Included are models for episodic research that spans design as analysis and evaluation, design as action research, design as a learned skill, and design in collaboration. This session introduces four forms of design research: Field experiments, episodic design research, design as action research, and design science research.

6. Design Research: Field Experiments
   Shifting to positivist views of design research, the seminar collocates basic concepts of a positivist view and design activity. Using experimental models for the development of “scientific knowledge” in design research.

7. Design Research: Episodic Design Research
   We explore the research done by designers for practical outcomes purposes. While not necessarily aimed at producing new scientific knowledge, this activity is often conflated with design research.

8. Design Research: Design as Action Research
   Aside from existing action research that may qualify under definitions of design research, we will particularly consider reflective practice and collaborative research.

9. Design Research: Systems Design
   With a particular reference to information systems, the seminar will explore the relationship between systems development methodology and software engineering research.

10. Exemplars
    The seminar will explore one or more examples of published design research, including the 3rd DESRIST Conference to be held in Atlanta in May 2008, as well as the latest issue of Scandinavian Journal of IS (theme issue on Design Science).
## Schedule for PhD course

RB = Richard Baskerville responsible  
JPH = Jan Pries-Heje responsible

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Readings</th>
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<tbody>
<tr>
<td>Wednesday 28 May 2008</td>
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<tr>
<td>10.00</td>
<td>Introduction and Overview of the PhD Course (JPH + RB)</td>
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<tr>
<td>10.30</td>
<td>Generative Design: The seminar discovers the basic notion of design as one form of human invention and innovation. We consider the eduction of theory from design practice, and the logical operations on theory in practice. (RB)</td>
<td>(Sutton &amp; Staw, 1995) (Iivari, 2007)</td>
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<tr>
<td>12.00</td>
<td>Lunch</td>
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<tr>
<td>13.00</td>
<td>Discussion: Generative Design (JPH)</td>
<td>(Cooper, 2000) Task#1 (Swan, Newell, &amp; Robertson, 2000) Task#2</td>
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<tr>
<td>14.15</td>
<td>Break</td>
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<tr>
<td>14.30</td>
<td>The Relationship Between Design And Research: The seminar explores how design draws on knowledge and produces knowledge. This includes research about design and design as research. Design as research can be for practical design purposes, for purposes of building scientific knowledge, or both. We distinguish between design science and design research (JPH)</td>
<td>(Hevner &amp; March, 2003) (van Aken, 2004) Task#9</td>
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<tr>
<td>15.45</td>
<td>Break</td>
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<td>16.00</td>
<td>Discussion of The Object of Design: Researching The IT Artifact (RB)</td>
<td>(Orlikowski &amp; Iacono, 2001) Task#3</td>
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<td>17.00</td>
<td>End of Day 1</td>
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<td>Thursday 29 May 2008</td>
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<tr>
<td>9.00</td>
<td>Design Science: The seminar explores Simon's science of the artificial, i.e., the science of design. This includes scientific research about design, designing with scientific research, and the notion of &quot;scientific&quot; design as a similar metaphor to &quot;scientific&quot; management. (RB)</td>
<td>(Simon, 1996) (Walls, Widmeyer, &amp; El Sawy, 2004) (Hooker, 2004)</td>
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<td>Time</td>
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<td>10.00</td>
<td>Discussion: Design Science (JPH)</td>
<td>(Markus, Majchrzak, &amp; Gasser, 2002) Task#4 (Hevner, March, Park, &amp; Ram, 2004) Task#5</td>
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<tr>
<td>10.45</td>
<td>Break</td>
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<tr>
<td>11.00</td>
<td>DESRIST: Design Science Research in IT Exemplars (JPH)</td>
<td>(Kuechler &amp; Vaishnavi, 2008) Task#18 (Pries-Heje &amp; Baskerville, 2008)</td>
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<td>12.00</td>
<td>Lunch</td>
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<td>12.45</td>
<td>Participatory Design Orientation: Building on Scandinavian work, the seminar explores views of sociotechnical research about design, and designing with sociotechnical research. (JPH)</td>
<td>(Simonsen &amp; Kensing, 1997)</td>
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<td>13.45</td>
<td>Discussion (Participatory Design) (RB)</td>
<td>(Baskerville &amp; Stage, 2001) Task#6 (Kensing &amp; Blomberg, 1998) Task#7</td>
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<td>14.45</td>
<td>Break</td>
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<td>15.00</td>
<td>Episodic Design Research: Collocating Scandinavian and reference concepts from architecture, the seminar explores design research methodology. Included are episodic models for design research that span design as analysis and evaluation, design as action research, design as a learned skill, and design in collaboration. This session positions four forms of design research: Field experiments, design as action research, systems design research, and pure episodic design research. (RB)</td>
<td>(Goldkuhl, 2004) Task#8 (Albert, Goes, &amp; Gupta, 2004) Task#17</td>
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<td>17.00</td>
<td>Adjourn</td>
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<td>19.00</td>
<td>Dinner Place to be announced</td>
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Friday 30 May 2008

9.00    | Discussion Session on Field Experiments as Design Research: Shifting to positivist views of design research, the seminar collocates basic concepts of a | (March & Smith, 1995) Task#10 (Hunton & Beeler, |
<table>
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<tr>
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<td>positivist view and design activity. Using experimental models for the development of &quot;scientific knowledge&quot; in design research. (RB)</td>
<td>1997) Task#11</td>
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<td>10.00</td>
<td>Break</td>
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<td>10.15</td>
<td>Discussion Session on Action Research as Design Research: Aside from existing action research that may qualify under definitions of design research; Under particular consideration is reflective practice and collaborative research. (RB)</td>
<td>(Järvinen, 2007) Task#12 Task#12 (Kohli &amp; Kettinger, 2004) Task#13</td>
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<tr>
<td>11.00</td>
<td>Break</td>
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<tr>
<td>11.15</td>
<td>Discussion Session on Systems Design as Design Research: With a particular reference to information systems, the seminar will explore the relationship between design research, systems development methodology and software engineering research. (JPH)</td>
<td>(Gregg, Kulkarni, &amp; Vinze, 2001) Task#14 Task#14 (Carroll &amp; Kellogg, 1989) Task#15</td>
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<tr>
<td>12.00</td>
<td>Lunch</td>
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<tr>
<td>12.45</td>
<td>Discussion Session on Pure Episodic Design Research: We explore the research done by designers for practical outcomes purposes. While not necessarily aimed at producing new scientific knowledge, this activity is often conflated with design research. (RB)</td>
<td>(Schirmer, 2003) Task#16 Task#16</td>
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<tr>
<td>13.30</td>
<td>Reviewing Design Science (JPH+RB)</td>
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<tr>
<td>14.00</td>
<td>PhD course Closes</td>
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**Readings**


Assignments

The following tasks have been assigned to the following participants:

Task# (written after the paper you have been assigned)
1. Petter Øgland, University of Oslo, petterog@ifi.uio.no
2. Erik Kristiansen, Roskilde University, erikk@ruc.dk
3. Jonas Sjöström, Uppsala University, jonas.sjostrom@ihh.hj.se
4. Jonas Fritsch, University of Aarhus, jonas.fritsch@gmail.com
5. Greg Gimpel, Copenhagen Business School, gg.caict@cbs.dk
6. Gitte Tjørnehøj, Aalborg University, gtj@cs.aau.dk
7. Maren Fich Granlien, Roskilde University, maren@ruc.dk
8. Peter Dalsgård Pedersen, University of Aarhus, dalsgaard@cavi.dk
9. Heidi Tscherning, Copenhagen Business School, htj.caict@cbs.dk
10. Karen Johanne Kortbek, University of Aarhus, kortbek@daimi.au.dk
11. Maiken Fogtmann, University of Aarhus, maikenhf@daimi.au.dk
12. Fredrik Bengtsson, Fredrik.Bengtsson@dis.uu.se
13. Arto Lanamaki, University of Agder, arto.lanamaki@uia.no
14. Christian Ostlund, Copenhagen Business School, christian.ostlund@hv.se
15. Hanna Broberg, University of Linköping, Hanna.Broberg@hik.se
16. Simon Kabins, Aarhus School of Business, kabins@gmail.com
17. Christian Dindler, University of Aarhus, dindler@daimi.au.dk
18. Esmiralda.moradian, esmiralda.moradian@dis.uu.se

Prepare a short presentation of the paper you are assigned
- Summary & key point(s)
- Research question answered
- Perspective on design science research
- What is this paper useful for?
- 2-3 points for discussion in class