Systems Engineering 681:
Analysis and Design of Electronic Commerce Systems

Summer 2000

Instructor:       Gerard P. Learmonth Sr., Ph.D.
Office:          Olsson Hall Room 102B
Office hours:    Monday and Wednesday 2:30PM – 3:30PM in Olsson Hall or by
                 appointment (telephone and e-mail are the best ways to
                 communicate)
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E-mail:          jl5c@virginia.edu or gpl@bnsi.net

Course Description: The global economy is undergoing profound change as an
increasing amount of commerce is conducted via electronic means. Much attention is
focused on the so-called "dot com" companies that challenge existing business models
and present competitive threats to established enterprises. In response, enterprises need
to re-think their business models, re-engineer their business processes, and adapt their
organizational structures -- both internal and external.

This course will examine the challenges faced in adapting to the realities of electronic
commerce. We will explore the value-chain of business activity as an integrated system
-- from the supply chain to customer relationship management. Our goal will be to
critically analyze business models, processes, and structures with a view toward
designing effective e-Business solutions. To this end we will identify the "best-of-breed"
models, tools, and methods adopted by exemplar enterprises.

The course format will consist of lectures, case study presentations, and guest speakers
who will share their experiences in building and managing e-Business ventures.

Class meetings: Monday - Wednesday 5:30 PM to 7:30 PM

Grading: Case study write-ups (7) 35%
          Class participation 25%
          Final examination 40%
<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Readings</th>
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<tbody>
<tr>
<td>Mon. 6/12</td>
<td>Course overview &lt;br&gt;The e-Business landscape</td>
<td>[K&amp;R] Chaps. 1 and 2 [S&amp;V] Chap. 1</td>
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<tr>
<td>Wed. 6/14</td>
<td>“Traditional” business models &lt;br&gt;What business model are we in? &lt;br&gt;Innovation in e-Business design</td>
<td>[K&amp;R] Chap. 3 [S&amp;V] Chaps. 2 and 3</td>
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<tr>
<td>Mon. 6/19</td>
<td>The transformational impact of IT &lt;br&gt;Case Study – Leadership Online: Barnes &amp; Noble vs. Amazon.com</td>
<td>[S&amp;V] Chap. 4 9-798-063</td>
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<tr>
<td>Mon. 6/26</td>
<td>Tools of design: the technology components &lt;br&gt;Case Study – Dell Online</td>
<td>[K&amp;R] Chap. 4 9-598-116</td>
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<tr>
<td>Wed. 6/28</td>
<td>Customer Relationship Management &lt;br&gt;Sales Force Automation</td>
<td>[K&amp;R] Chap. 5 and 6</td>
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<td>Mon. 7/3</td>
<td><strong>Holiday</strong></td>
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<td>Wed. 7/5</td>
<td>Enterprise Resource Planning Systems I &lt;br&gt;Guest Speaker</td>
<td>[K&amp;R] Chap. 7</td>
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<td>Mon. 7/10</td>
<td>Enterprise Resource Planning Systems II &lt;br&gt;Case Study – Vandelay Industries Inc.</td>
<td>9-697-037</td>
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<td>Wed. 7/12</td>
<td>Supply Chain Management I</td>
<td>[K&amp;R] Chap. 8 [S&amp;V] Chap. 7</td>
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<td>Mon. 7/17</td>
<td>Supply Chain Management II &lt;br&gt;Case Study -- i2 Technologies, Inc.</td>
<td>9-699-042</td>
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<td>Wed. 7/19</td>
<td>Vertical networks &lt;br&gt;Exchanges</td>
<td>[S&amp;V] Chap. 8</td>
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<td>Mon. 7/24</td>
<td>e-Procurement &lt;br&gt;Case Study – VerticalNet</td>
<td>[K&amp;R] Chap. 9 9-500-041</td>
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<td>Wed. 7/26</td>
<td>Merchants, infomediaries, communities &lt;br&gt;Guest Speaker</td>
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Mon. 7/31  Capitalizing business knowledge [K&R] Chap. 10
Case Study – FreeMarkets On-Line 9-599-109

Wed. 8/2  Payment systems [S&V] Chap. 9
Auction, reverse auction, and exchange models
Electronic Data Interchange

Mon. 8/7  Putting it altogether: designing the e-Business [K&R] Chaps. 11 and 12
Case Study – Onsale, Inc. 9-599-091

Wed. 8/9  Toward frictionless markets [S&V] Chap. 10
Business models revisited
Ethical and social considerations

Required Texts


Readings (partial list)


Case Studies

Leadership Online: Barnes & Noble vs. Amazon.com (A) 9-798-063
Dell Online 9-598-116
Vanderlay Industries Inc. 9-697-037
i2 Technologies, Inc. 9-699-042
VerticalNet 9-500-041
FreeMarkets On-Line 9-599-109
Onsale, Inc. 9-599-091