

<THE DISSERTATION TITLE>

By

<Your-name-here>

A DISSERTATION

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The University of Liverpool

in partial fulfillment of the requirements
for the degree of

MASTER OF SCIENCE

<THE DATE>

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I confirm that I have not copied material from another source nor committed plagiarism nor commissioned all or part of the work (including unacceptable proof-reading) nor fabricated, falsified or embellished data when completing the attached piece of work.

I declare that the dissertation describes original work that has not previously been presented for the award of any other degree of any institution.

Signed,

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CHAPTER 1. INTRODUCTION

{This is a potential introductory section. It has been included in this skeletal form just to demonstrate heading numbers, styles, and creation of the Table of Content. }

Chapter 2. Scope

{Say what the scope of the dissertation is. This may say what is covered and what is not covered, and the extent/level of each.}

Chapter 3. Problem Statement

Chapter 4. Approach

Chapter 5. Outcome

CHAPTER 6. BACKGROUND AND REVIEW OF LITERATURE

Chapter 7. Related Work

{Here is some specimen text just to illustrate citations of material in the bibliography. This is not offered as a correct way to provide background. It is more to show cross-references working. The cross-references on this page are made by first of all typing the reference in the REFERENCE CITED, then selecting it and through Insert | Bookmark | Add giving him a name (don't use spaces in that name). Then return to the text and select the text (e.g., "(2004)" and click the Hyperlink button on the Windows toolbar. Choose the "Place in this Document", find the name in the list and click OK. The advantage of a hyperlink is that the text of the link can be anything, no matter what bookmark is the target. Cross-references, on the other hand, use target material to make text that is part of the link. That is inconvenient for bibliographic citations.}

Susan addresses trust from the point of view of e-commerce sites providing reassurances of trustworthiness in their presentation and operation (). Although the focus is on user interface, the principles applied and the care shown in having the site be trustworthy is instructive for the software-development and deployment focus here.

Simson Garfinkel examines the connection between usability and security in his Ph.D dissertation (). A number of elements of security assurance can be extended to trustworthiness, such as those given by (). Several of the patterns that Garfinkel identifies are also appropriate for giving users confidence in the trustworthiness of software systems as well. There are also cautionary findings that raise concerns about intrusion on the user and in expecting that adopters will actually perform the confirmation and assurance actions that we propose to make available ().

The employment of patterns and pattern language by Garfinkel is in the style of software design patterns (). Garfinkel's chosen patterns are more in-the-world in the spirit of *A Pattern Language* (et.al., 1977). This ability to shift attention from the formal workings of machines and software systems to the world of the software's adopters and users is seen as critical to the achieving of trustworthiness in software, allowing us to address the "domains of action in which the customers of software systems live and work" ().

Consideration of patterns and their levels leads to questions about the difference between artifacts and the situations in which they serve as instruments of human purposes. Hal Pierson speaks of the difference between the problem space and the solution space, noting that most of what is done in software development and engineering is focused on the solution space (). Although the thesis pilot project is deep within the solution space, the distinction is already critical.

Chapter 8. Literature

Chapter 9. Industry Sources

CHAPTER 10. CONCLUSIONS

{Again, this offered as a typical breakdown without providing the needed intermediate chapters.}

Chapter 11. Lessons Learned

Chapter 12. Future Activity

**Chapter 13. Prospects for Further
Work**

REFERENCES CITED

{This section will be the Harvard-style bibliography for the entire dissertation. It must use the required format described . We have included some samples so that the use of cross-references from citations to the bibliography entries is illustrated.}

- Alexander, C., Ishikawa, S., Silverstein, M., Jacobson, M., Fiksdahl-King, I., Angel, S. (1977). *A Pattern Language: Towns, Buildings, Construction*. Oxford University Press, New York. 1171 pp. ISBN 0-19-501919-9.
- Denning, P., Dargan, P. (1996). Action-centered design. pp. 105-127, Chapter 6 in ()
- Fallow, S. (2004) Maximizing Consumer Trust in e-Commerce by means of Usability Concepts in Web Design. M.Sc dissertation, University of Liverpool, August. 94 pp. Available by request to the author,
- Gamma, E., Helm, R., Johnson, R., Vlissides, J. (1995) *Design Patterns: Elements of Reusable Object-Oriented Software*. Addison-Wesley, Boston. ISBN 0-201-63361-2.
- Garfinkel, S. (2005) Design Principles and Patterns for Computer Systems That Are Simultaneously Secure and Usable. Ph.D. dissertation, Massachusetts Institute of Technology, May. 473 pp. Available on the Internet at: (accessed on: 2005 July 21).
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- Stoneburner, G. (2005) Developer-Focused Assurance Requirements. *IEEE Computer* **38**, 7 (July 2005), 91-93
- Winograd, T. (ed.) (1996) *Bringing Design to Software*. ACM Press, Addison-Wesley, Boston. ISBN 0-201-85491-0

APPENDICES

APPENDIX A. PATTERN-DESCRIPTION TEMPLATE

{This section shows how to start an Appendix and also to illustrate tables and figures. These are extracts from actual material. In this particular project dissertation, a large part of the project was carried out on the web. Some of these particular appendices were abridged accounts that supported the thesis without requiring on-line access for the material and that allowed a print version to be self-contained.}

Latest version: <> provides the latest material on the TROST Pattern Description Approach.

Version: 0.30 <> is the version of the approach that this appendix is based on.

A.1 Pattern-Description Approach

Pattern descriptions are based on a detailed template that aligns with a variety of pattern descriptions in common usage.

The minimal pattern description consists of a pattlet providing a compact summary of a pattern's essential characteristics. The principles of the overall template are honored but the content is abbreviated.

For pattern descriptions with extensive content, a pattlet summary is used as a cover, with detailed description and supporting materials on supplemental pages. In these cases, the pattern description will provide detailed coverage of topics and subtopics. Variations will often be introduced at the detail level to accommodate different situations and methodologies.

There is provision for patterns being specialized variations of more general patterns. It is also possible for patterns that are focused on realization in concrete implementations to be based on more-abstract patterns. The different forms will be cross-referenced. The differences are

in placement of emphasis and detail more than differences in the overall format. The same pattern description structure is drawn upon.

A.2 Pattlet Summary Structure

Pattlets are summaries of pattern descriptions. The ten key topics of the full pattern template are addressed briefly and selectively (Table 1).

Table 1 Principle Topics in Pattlets

1.	- how the pattern is known
2.	- the setting in which the pattern can occur or be desired
3.	- what is to be accomplished
4.	- issues to be balanced and addressed
5.	- how to satisfy the intention – what to do
6.	- strategy for specific implementations of the approach
7.	- additional matters to be aware of
8.	- the result of achieving the pattern: benefits and limitations
9.	- actual cases, related patterns involved in completing the approach of this pattern
10.	- acknowledgment of source materials and contributions

The pattlet format is convenient for determining whether it is promising to examine the complete pattern description.

Pattlets are also convenient as summaries of patterns having detailed descriptions provided elsewhere. In that case, the summary saves the reader from having to track down additional sources simply to see how the pattern is being applied in an immediate situation. The pattlet is a summary-level stand-in and connection to further detail.

A.3 Full Pattern-Description Organization

The following table illustrates the complete set of subtopics currently identified in the Pattern-Description Template.

Table 2 Full Pattern-Description Organization

<p>1. Identification</p> <p>1.1 Name</p> <p>1.2 Version</p> <p>1.3 Summary</p> <p>1.4 Also Known As</p> <p>1.5 Type</p> <p>1.6 Archetype</p> <p>1.7 Keywords</p>	<p>3. Intention</p> <p>3.1 Intent</p> <p>3.2 Background</p> <p>4. Concerns</p> <p>5. Approach</p> <p>5.1 Key Statement</p> <p>5.2 Rationale</p> <p>5.3 Prerequisites</p> <p>5.4 Sketches</p> <p>5.5 Detail</p> <p>5.6 Models</p> <p>5.7 Diagrams</p>	<p>6. Realization</p> <p>7. Considerations</p> <p>7.1 Testing</p> <p>7.2 Safety/Failure</p> <p>7.3 Deployment</p> <p>7.4 Security</p> <p>7.5 Operations</p> <p>7.6 Usability</p> <p>7.7 Support/Repair</p> <p>7.8 Performance/Scale</p> <p>7.9 Trustworthiness</p>	<p>8. Consequences</p> <p>8.1 Benefits</p> <p>8.2 Limitations</p> <p>8.3 Trade-Offs</p> <p>8.4 Risks</p> <p>8.5 Next Challenges</p> <p>9. Usage</p> <p>9.1 Known Examples</p> <p>9.2 Variants</p> <p>9.3 Related Patterns</p> <p>10. Sources</p> <p>10.1 References</p> <p>10.2 Contributors</p> <p>10.3 Attribution</p>
<p>2. Situation</p> <p>2.1 Perspectives</p> <p>2.2 Context</p> <p>2.3 Applicability</p> <p>2.4 Indications</p>			

APPENDIX B. NAVIGATIONAL DATA MODEL

{This Appendix is included to show how section numbering is preserved in the Appendices, how figures are captioned and cross-referenced, and to verify that the table of contents is still being correctly produced.}

When expressing a pattern that involves organizations of data, especially documents, web pages, and software-deployment materials, navigational data models are employed. The following conventions apply to the reading and creation of the diagrams.

Latest version: <> provides the latest material on the TROSTing Navigational Data Model.

Version: 0.75 <> is the version of the definition that this appendix is based on.

B.1 Hierarchical Organization

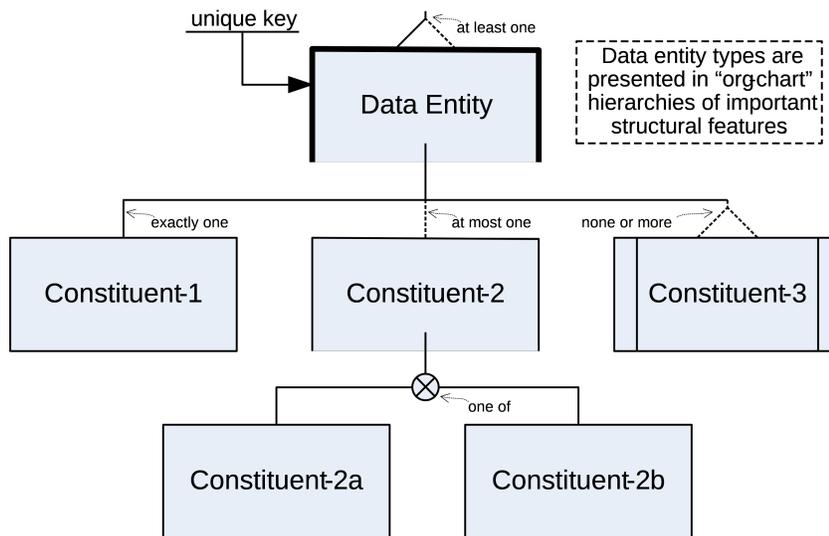


Figure 1. Navigational Data-Entity Hierarchy (typical)

The diagrams express organizations of data. Types of data entity are named and their composition in terms of constituent data-entity types is portrayed via a hierarchical connection of rectangles. The appearance is similar to that of organization charts.

