1 Problem
The purpose of computation and software design (CSD) is to create value. Yet, current CSD theories, concepts, tools and methods are not linked to modern models of value and value creation. For example, work on software economics has vastly improved the modeling and management of cost and risk, but there has not been a symmetric development of approaches to modeling and managing benefits and opportunities. We also lack a theoretical understanding of the means by which core software design and engineering concepts are linked to value: e.g., modularity (architecture), iterative development, testing. The conceptual state of the art in software design and engineering is thus not clearly optimal for value. To the extent that it is not, society is not getting its money’s worth for investments in CSD.

The emerging area of strategic software design (SSD) explores the consequences of the premise that the goal of software design is value. SSD seeks to develop and enhance basic CSD theories, tools and methods by basing them on mature models of value creation. The EDSER workshops provide a forum for exploring, influencing and advancing the development of strategic software design.

2 Scope
A principle of SSD is that no single scale of value can suffice as a foundation; but not all scales are equally important, either. Business value is a very important scale, but there are others. Much of society’s investment in CSD is intended to create business value. EDSER thus seeks new insights in CSD based on explicit connections to models and theories of business value creation. For example, recent work has shown that there are deep connections between modularity in design and the value of real options—capital analogs of financial options. Other disciplines that promise to support for a better grounded discipline of CSD for business value include utility theory, game theory, financial engineering (e.g., portfolio theory, securitization of risk), Lamarckian evolution, and design-oriented studies of contract and industry structures.

Business value is not the only mature concept of value. Philanthropies, universities, militaries and other important institutions do not take market value as a metric. Philanthropies value progress against societal problems; universities, the creation, storage and dissemination of knowledge and culture; militaries, the protection of national security. Individuals often have highly subjective scales of value. Some important value scales are embodied in well developed theories of ethics, aesthetics, justice, humanism, politics. Software development can and does occur in contexts in which value scales such as these apply; and such scales have been and can be applied to inform the development of software design methods, in general, and methods for business, in particular.

There are fundamental methods of reasoning about value that apply independent of value scale. Multi-attribute utility theory is one example of such a strategic reasoning framework. Thus, many of the most world’s most successful organizations take strategic approaches to resource allocation, whether they happen to be optimizing for business value or for other metrics. A key goal of SSD research is to adapt and leverage such ideas to improve software design and engineering theory and practice.

3 Workshop
Strategic software design is still a new area of inquiry. The EDSER workshops thus function not as mini-conferences but as working sessions. EDSER seeks good ideas with some plausibility and some support, preliminary results, well thought out but provocative positions, and excellent introductions to and tutorials on relevant art (e.g., game theory, ethical theories, finance, etc.)

This year’s two-day workshop includes presentations of background material on technical topics; presentations of work by participants selected on the basis of submitted positions; and extensive discussions. Papers of 2 to 5 pages in ICSE format, tutorials, and other proposal were solicited. Some presentations are invited.

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