Abstract
While software construction was a science, the design and construction of software was viewed as the central activity. Standards, middleware, and mature software development methodologies has moved this to one of several co-equal application development activities. To effectively bring this approach to the IT classroom, a partnership and academia is required. The Shared Software Initiative community fills this role.

1. Introduction
Software development has evolved from an art, to a science, and now to an engineering activity. Modern applications are being built on standards and a platform of sophisticated middleware. The design and construction of application, rather then being the central activity, is now one of several equally important steps in the software development process.

The value of IT as a competitive enhancer is recognized and well understood by today’s CTOs and CEOs. Sophisticated modeling tools are allowing the business analyst to understand the impact and cost of changes in their business processes by changes in their IT infrastructure. These tools can export requirements and UML models directly into the software development tools set. They are even capable of producing executable systems through the use of BPEL – Business Process Execution Language and Service Oriented Architectures.

The drivers in software development today are standards, middleware, and the tools that support this platform, along with the shift towards globalized development. Skilled IT professionals are needed at all points in the development process. They need to have skills not just in the principals of application design and construction, but also in the standards, tools, and development methodologies being used today.

One company in India visited by the author was expecting to hire over 1000 new developers in the next year. Working with schools teaching IT and software development was a key part of their strategy.

Many of the schools visited in Asia had programs heavily influenced by the needs of commercial software development. Projects and team development are common themes in a student’s education. Industrial partnering is pervasive as is cross discipline programs at many of the Polytechnic schools. Testing, modeling, project management, and the nature of globally developed software are on equal terms with the design and construction of applications. To train the IT professionals of tomorrow, the concepts of team development, traceable requirements, testing, standards, middleware architectures, and the tools that support them need to be elements introduced from the beginning and throughout a students education.

2. Shared Software Infrastructure
The Open Source community and organizations that contain them are proving to be fertile grounds for academia and industry to work together. The Eclipse consortium in particular, has produced an open source tools platform that addresses the full range of software development, and is being used in education today.

IBM with the partnership of Texas A&M University is creating a new open source organization called the Shared Software Infrastructure – SSI. The mission of this organization is to lower the barriers of using enterprise level software development tools and methodologies in the IT classroom. It is an open community for industry and academia to collaborate, and build shared solutions, know-how, and curriculum. Projects are open source, and course targeted – e.g. early Java, databases, modeling, project oriented software engineering, etc.. They contain Know-how – curriculum, examples, case studies; Wizards – tool simplification, class and assignment setup and shortcuts; Teaching aids – team and individual progress monitoring, assignment repositories, automated testing.

Institutions and companies interested in participating in this new organization should contact the author, or Prof Dick Simmons of Texas A&M - simmons@cs.tamu.edu