

An Active Object-based Digital Library for **Microeconomics Education**

THE UNIVERSITY OF ARIZONA

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Enabling Infrastructure

Authoring and presentation tools

Experimental Data Repository

Experiment parameters

Experiment results

Web execution environment

User management

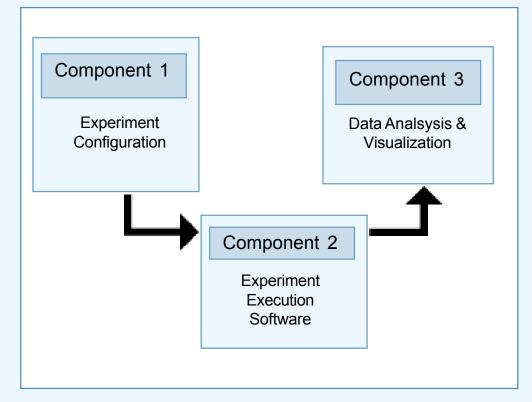
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Motivation

- Microeconomics education plays an important role in preparing future business leaders and practitioners and is a central part of undergraduate social science education.
- Traditional teaching methods: classroom lectures, pen and paper experiments
- Emerging practice: active student participation in experiments
 - Recent developments in experimental economics (e.g., 2002 Nobel Prize in Economics)
 - Technological feasibility (e.g., Internet-based experiments)
- Emerging e-commerce practice (e.g., online auctions)

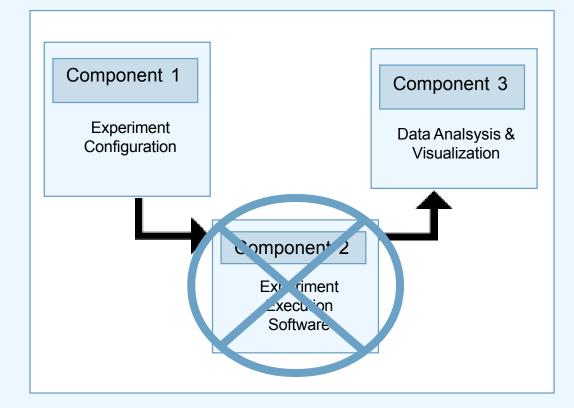
Experimental Software Collection Strategies

Category 1: Full In-House Development



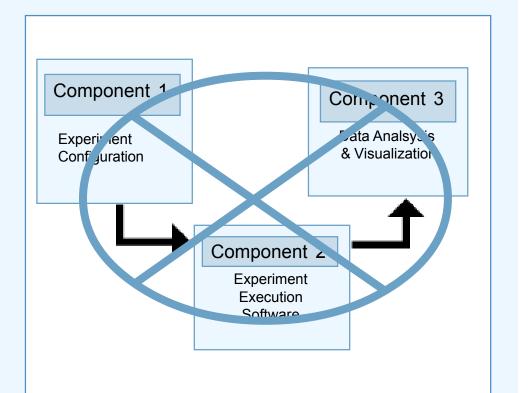
- Develop components 1, 2 and 3 Currently have: English auction, Dutch
- auction, first-price auction, secondprice auction, normal form game

Category 2: Third-party **Software Integration**



- Reuse component 2; develop components 1 and 3
- Currently have: Generalized axiom of revealed preference, double auction, posted offer market, suite of seven different auctions

Category 3: Third-party Software Collection



- Collect information and links about other available software
- Provide ability to search and browse through collection
- Approximately 100 links to existing software
- Make available EconPort API to third-party developers

Dissemination Activities

- Presentations
- May 2003 NSF Workshop on Classroom Experiments in Economics
- May 2003 Keynote address, Seventh Experimental Economics Conference of Japan
- May 2003 The Joint Conference on Ditigal Libraries
- June 2003 Economic Science Association annual meeting
- November 2003 Keynote address, Chinese National Economics Conference
- December 2003 Hong Kong University of Science and Technology Experimental **Economics Conference**
- January 2004 Allied Social Science Associations annual meeting
- Two user studies involving 60 students at University of Arizona in June, 2003
- Econport is provided to the community
- Initially used in University of Arizona Economics classes
- Work closely with select early adopters (e.g. National University of Singapore)
- Encourage other Economics instructors to use Econport through publications, workshops, and presentations at conferences

Project Goals

EconPort As A Collection

Experimental handbook

- Interactive learning tools
- Parameter sets designed to demonstrate specific economic

Microeconomic Content

Access to related sites and software

Experimental Software

setup software

execution software data visualization software

EconPort As A DL Approach

- Creating new types of digital contents, including simulated ITenhanced market institutions and intelligent trading systems implemented as software agents
- Developing OAI-compliant metadata XML representations to incorporate "active" software objects such as experimental software and software agents

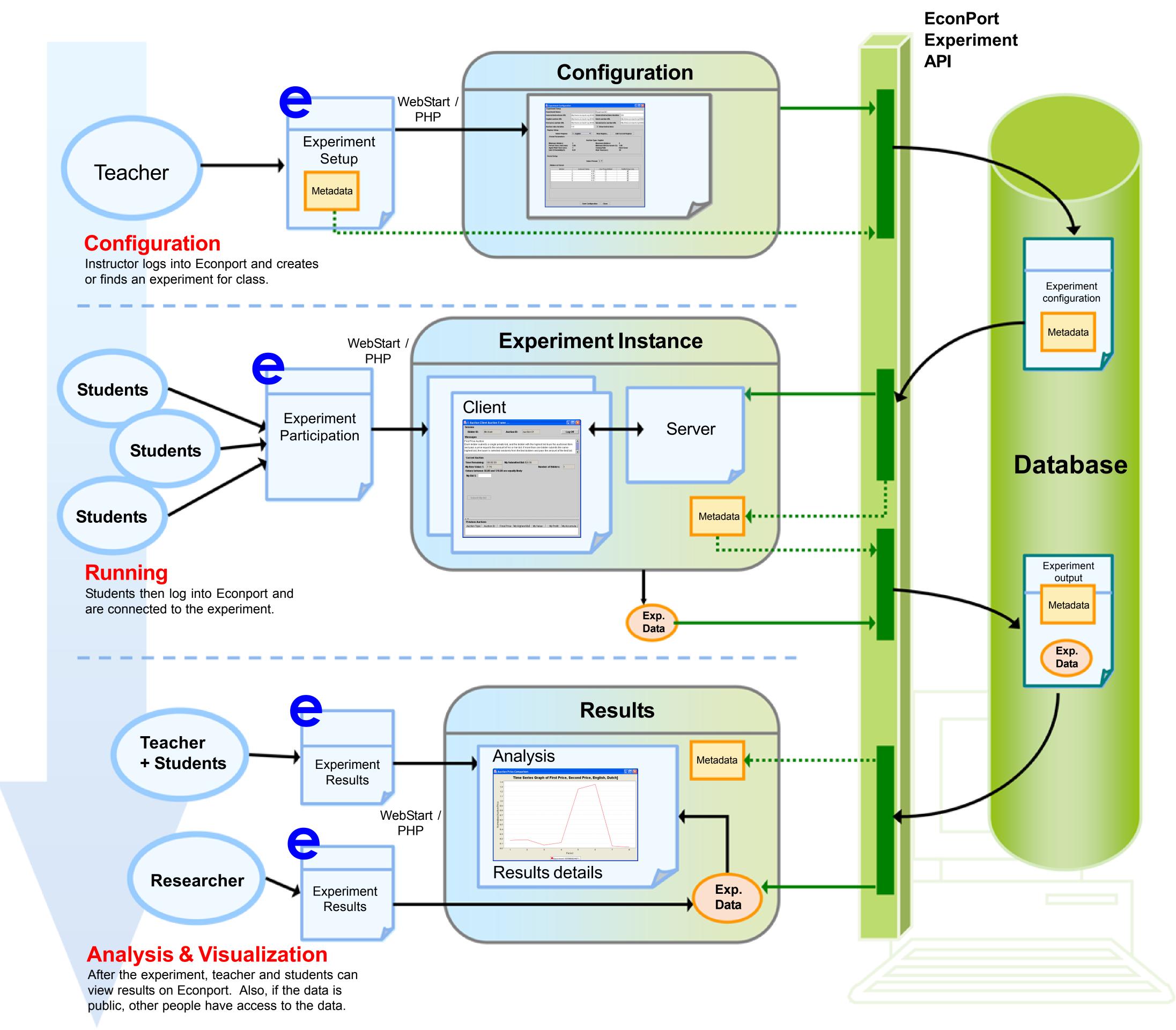
EconPort As A Research Infrastructure

- Providing a configurable e-commerce test bed to guide the online marketplace design
- Providing a set of automated trading mechanisms implemented as software agents
- Providing an experimental infrastructure to conduct

cutting-edge economics and e-commerce research

- human-agent interactions through online markets
- hybrid online market institutions

Integrated Experimental Software Infrastructure



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