

***Prosperity
Heights
Software***

IEEE NoVa

***Emerging Software Business
Models***

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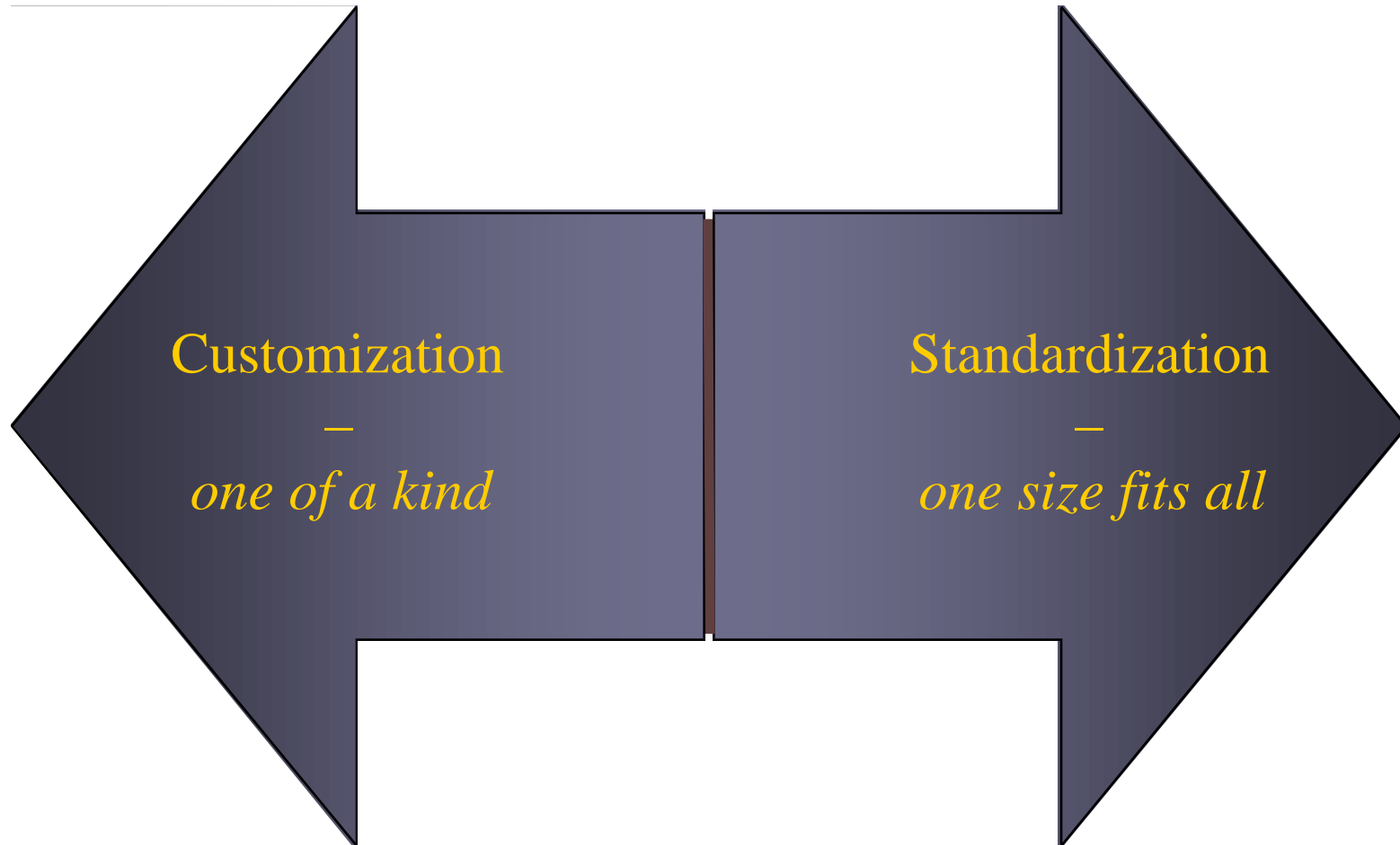
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Presentation Objective

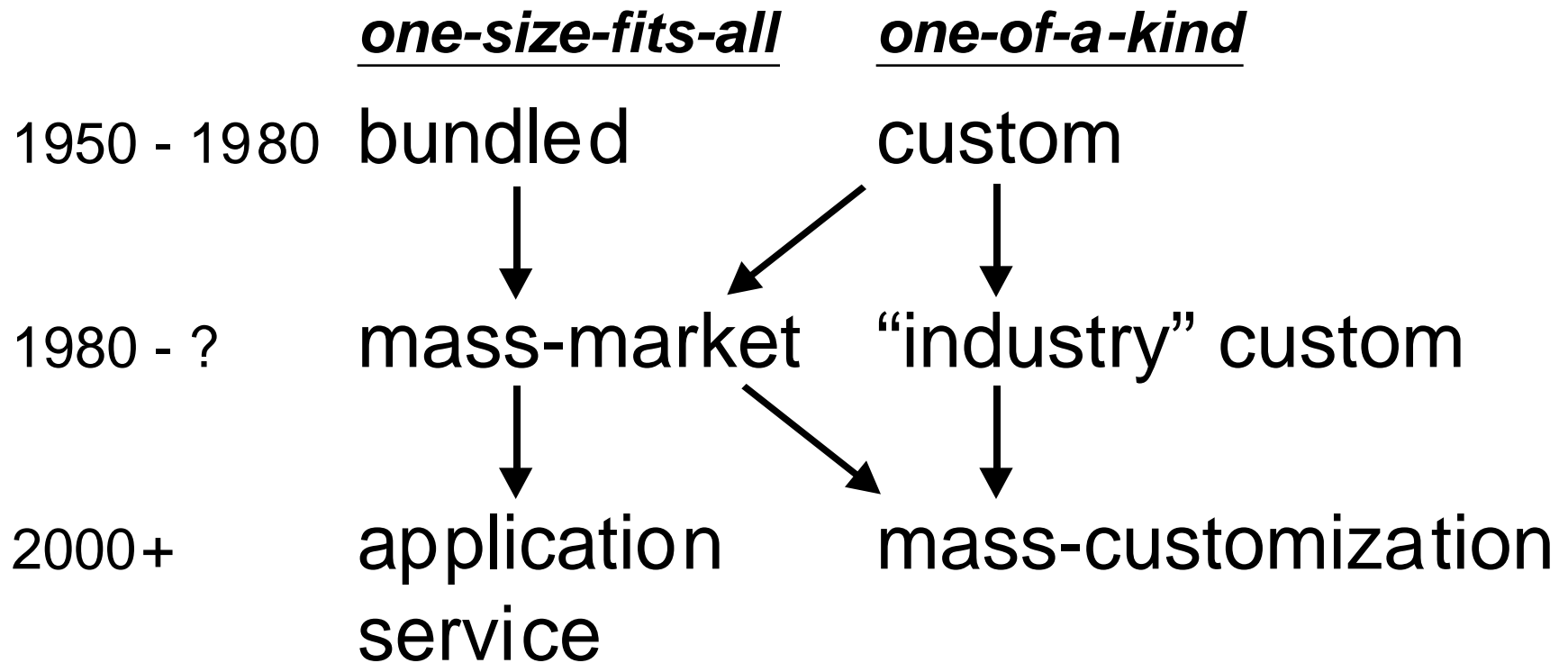


- Examine historic software business model trends
- Characterize emerging models
- Perspectives:
 - Role of standardization vs customization
 - Technology vs markets as business drivers
 - Blurring of product-service distinction

An inherent tension



Software business model trends



Comparison of model types



One-size-fits-all

- Many customers
- Standardized functionality
- High investment risk
- Market & competition drive change

One-of-a-kind

- Few customers
- Functionality tailored to specific needs
- Low investment risk
- Customer needs drive change

Emerging software business models



For each:

- What is it
- Examples; who uses it
- Benefits
- Challenges
- References

The Application Services Business Model



Application services - definition



Software built for shared remote execution

- Internet/intranet-based access
- Minimum physical dissemination
- Per-access or subscription pricing
- Integration of services with product offering

Motivation: exploit efficiencies offered by emerging technology

Application services - adopters



- Oracle: thin-client network computers, hosted applications and databases
- Sun: Java™ servlets
- Microsoft: “Next Generation Windows Services”
- Hewlett-Packard: pay-per-use hosted applications
- Portera Systems: business services

Application services - benefits



(versus mass-market software)

■ Producers

- Ease of distribution and upgrade
- Renewable revenue stream
- Less need for platform diversity

■ Customers

- Incremental cost, low investment (pay as you go)
- Reduced computing resources needed

Application services - challenges



■ Technical

- Accessibility: Network/server delays, congestion
- Reliability, security of service
- Support for customization

■ Economic

- Cost of re-architecting existing products
- Acceptability of new pricing schemes
- Reduced value of existing desktop investment

Application services - references



Greg Goth, "The Next Gold Rush: Application Service Providers Stake Their Claims in a Red-Hot Market" IEEE Software 17 (2), March/April 2000, 96-99.

Websites:

The ASP Industry Consortium <aspindustry.org>

<www.aspnews.com>

<www.oracle.com/iplatform/index.html?ihost.html>

<www.portera.com>

The Mass-Customization Business Model



Mass-customization - definition



Customized products for a coherent market

- Hybrid of mass-market & custom models
- Capability to build a family of similar products from analysis of market needs
- Products differ for each customer and as needs change

Motivation: Leverage similar developments

Mass-customization - adopters



- Thomson-CSF (trainers, air traffic control)
- Lockheed-Martin (satellite avionics, test equipment)
- Lucent (telephone switching)
- Rockwell (GPS receivers)
- Traditional manufacturers (e.g., Motorola)
- Apparel industry (e.g., Levi Strauss)

Mass-customization - benefits



(versus custom software)

- Competitive advantage in a market
 - Customization at lower cost
 - Products faster and/or with less effort
 - More consistent product quality
- Capitalization of product line expertise
- For customers, better fit to needs sooner with less effort for them

Mass-customization - challenges



- Technical
 - Customization mechanisms
 - Version management
- Economic
 - Committing to invest in software capability
 - Anticipating future market needs
 - Aligning businesses to markets (vs technology)
 - More training focus on business competencies

Mass-customization - references

B. Joseph Pine II, *Mass Customization*, Harvard Business School Press, 1993.

R. R. Macala, et al., "Managing Domain-Specific, Product-Line Development", *IEEE Software* 13 (3) May 1996, pp.57-67.

I. Jacobson, et al, "Making the Reuse Business Work," *IEEE Computer* 30 (10), Oct 1997, p. 36-42.

Websites:

Prosperity Heights Software: <www.domain-specific.com>

Software Engineering Institute: <www.sei.cmu.edu/plp>

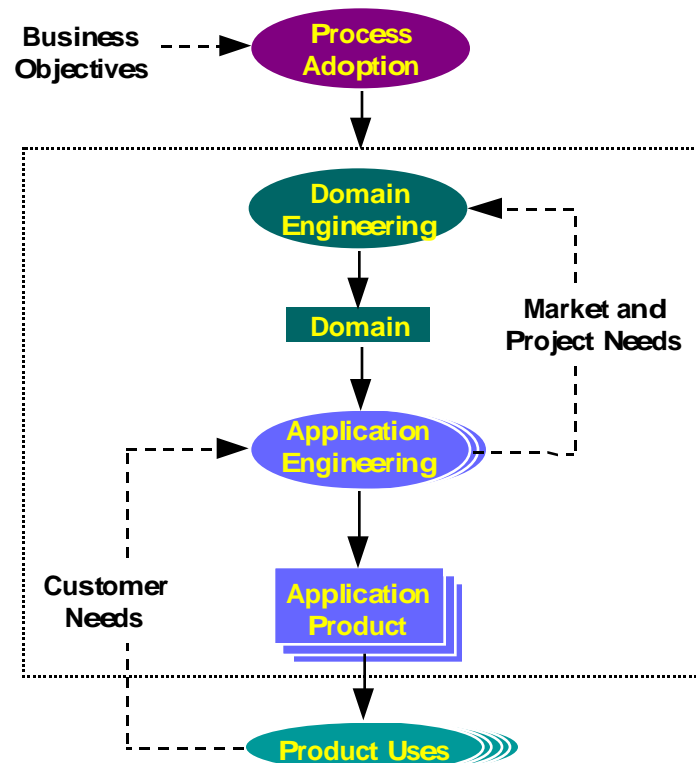
European Software Institute <www.esi.es/Projects/reuse>

Gerber Scientific <www.mass-customization.com>

other references: <www.domain-specific.com> #  # References

Mass-customization - DsE methodology

Domain-specific Engineering™



- Process adoption:
Improve product line
business capabilities
- Domain engineering:
Build a product family
and process/environment
- Application engineering:
Build application
products

Contact information



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