

Why Firms Adopt Platform Standards: A Grounded Theory of Open Source Platforms

Jason Dedrick

Center for Research on Information Technologies and Organizations
University of California, Irvine

Joel West

College of Business
San José State University

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Research Questions

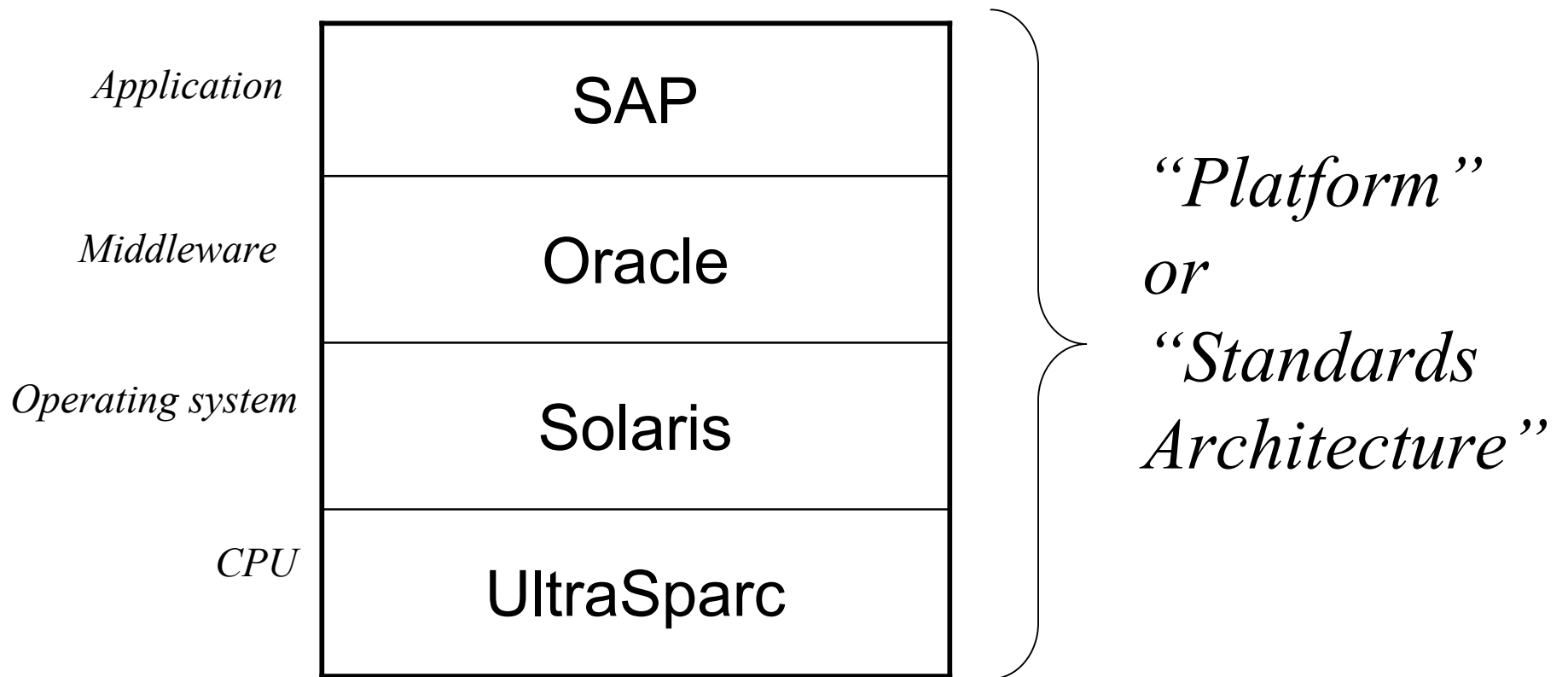
- How do organizations adopt platform standards?
- Is the adoption of open source standards different from proprietary standards?
- What are the implications for standards theory?

Economics of Standards

- Winning standard enjoys increasing returns (Katz & Shapiro 1985; Teece 1986; Arthur 1996)
 - Under hardware-software paradigm, competing standards seek “complementary assets”
 - Most popular standard attracts most complementary assets
- Focus on individual standards (VCRs) not platform standards (systems architecture)

Platform Standards

custom software



IT Standards Adoption

- IT diffusion and adoption
 - Diffusion of innovations (Rogers 1983)
 - TAM studies individual adoption (Davis, 1989)
 - TOE model considers org. & external contexts (Depietro, Wiarda, Fleischer 1990)
- Few consider both economics of standards & diffusion of innovation
 - Exception: Fichman and Kemerer (1993)

Research strategy

- Study organizational adoption of computer server platform standards, focusing on Linux
- Grounded theory approach
- Interviews with CIOs and server administrators. 10 organizations, 15 interviews so far.
- Develop propositions and consider implications for standards theory

Platform Standards Adoption: Linux

- Adoption decision: server platform
 - Platform decision incorporates multiple layers
 - Server decision made by IS staff
- Additional attributes
 - Competition of proprietary vs. open source operating system (Linux)
 - Competition of proprietary vs. open hardware

How Are Platforms Adopted?

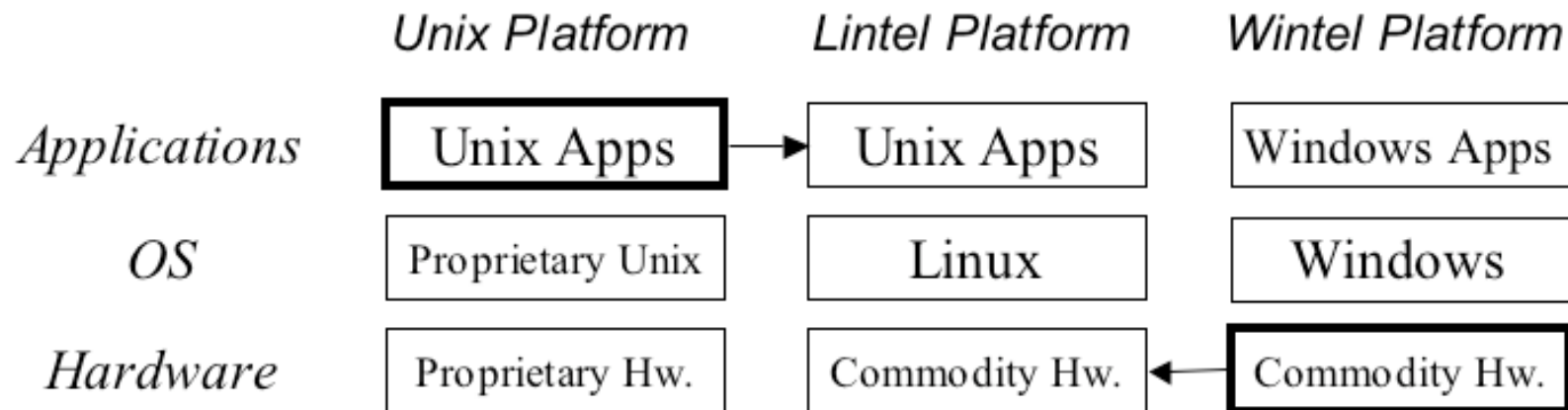
- When?
 - New uses: no switching costs
 - Old platform is abandoned (thus switching required)
 - Cost savings provide quick payback of switching costs
- Which platform?
 - Decision at one level constrains subsequent choices:
 - Case #1: key app (e.g., SAP) constrains OS, hence HW
 - Case #2: HW selection (e.g., Dell) constrains OS
 - Case #3: MIS worker skill set (Unix) constrains OS

Findings for Economics of Standards

- Complementary assets are central in decisions
- Network effects
 - key issue is “fit” — not quantity — of comp. assets
 - Windows has most assets, but Linux has good assets for Internet servers
 - Key comp. asset for servers is skilled people
- Switching costs
 - Linux’s Unix roots lower switching costs for Unix shops
 - Windows shops not considering switching

Modular Platforms Lower Entry Barriers

Intel deliberately leverages complementary assets of Unix and Wintel platforms, reducing entry barriers and user switching costs.



Issues for New Platform Adoption

- Platforms enable modularity
 - Manages complexity of systems development
 - Enables 3rd party ISVs to fill gaps
 - Allow recombination for new platforms
- It's rare that new platforms get established
 - New platforms must attract comp. assets
 - Established platforms enjoy strong network effects
 - Adopters must switch out existing comp. assets
- Could a proprietary standard also co-opt comp. assets in other layers as Linux did?