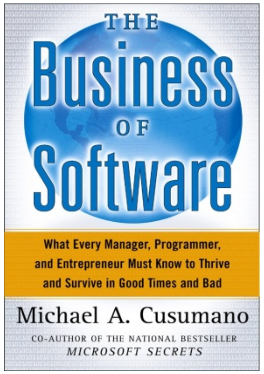
The Changing Software Business

Presentation for OECD-METI-RIETI Conference

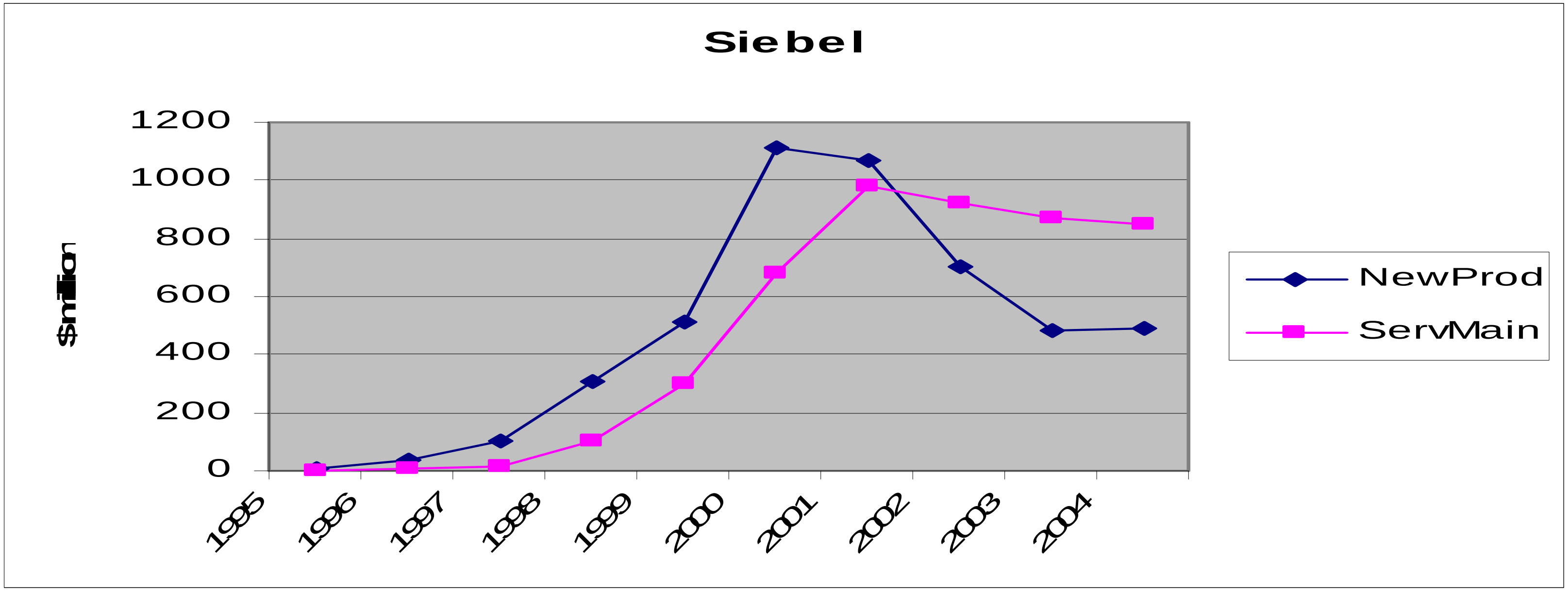
October 6-7, 2008

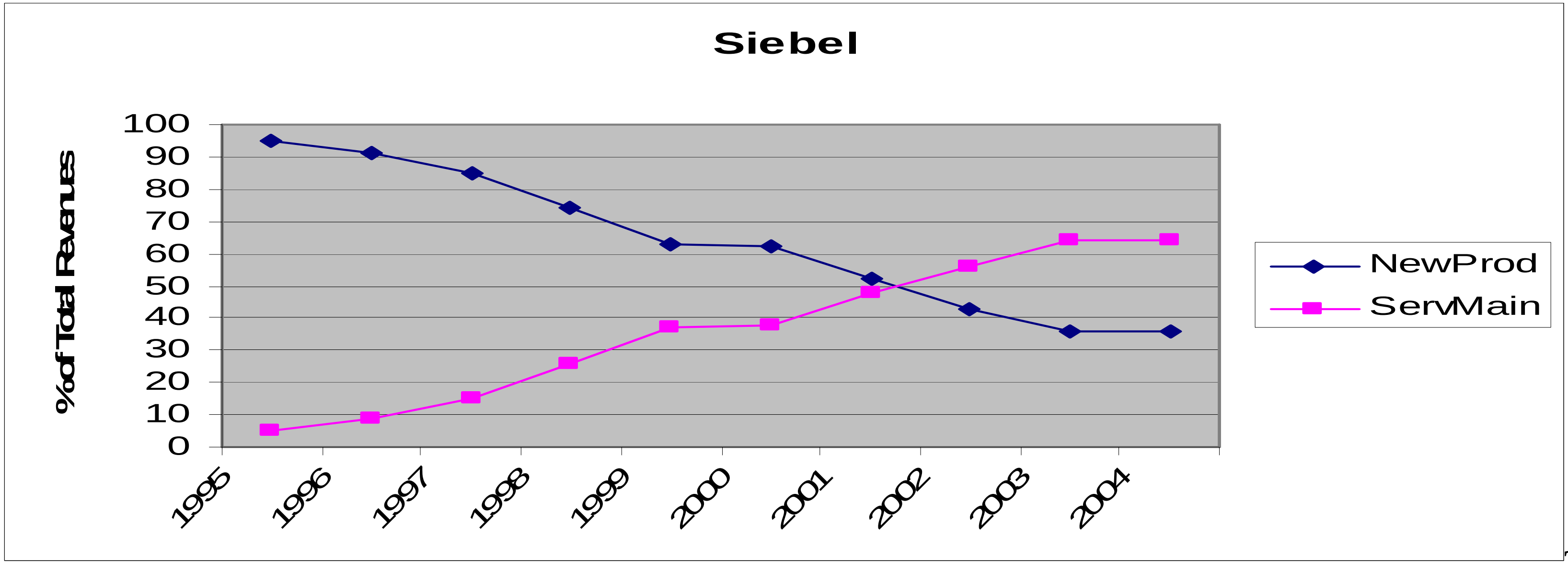
Michael A. Cusumano
MIT Sloan School of Management
cusumano@mit.edu

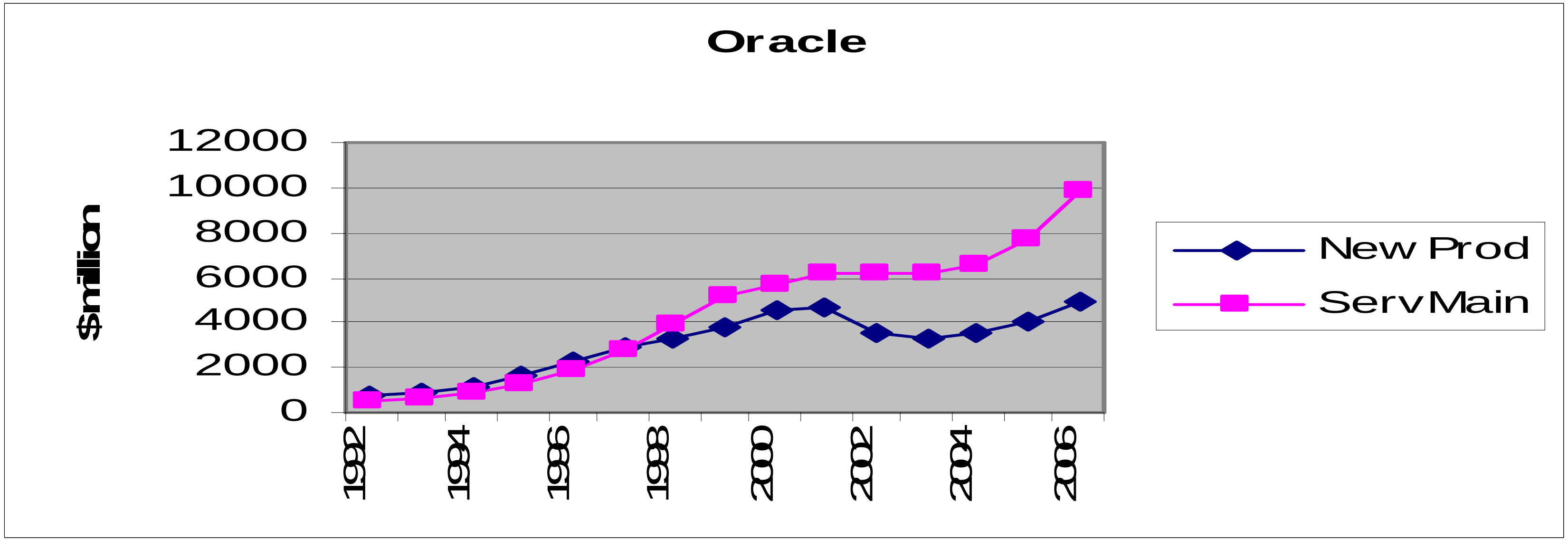


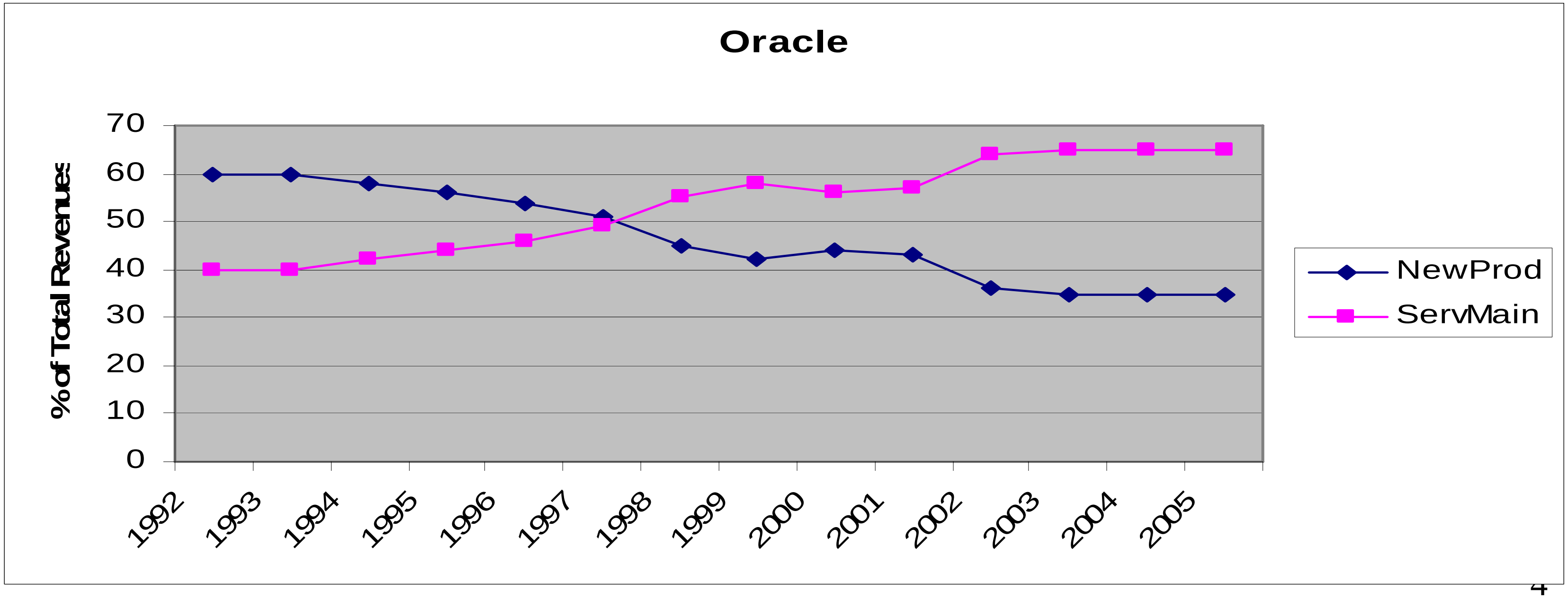
Software <u>Products</u> Business

- **Decline of New Enterprise Sales (or Prices)**
  – Only exceptions are hits & “platform” products?
- **Growth of Services & Maintenance Sales**
  – Technology glut from Internet boom and Y2K
  – Freeware and open source driving some prices to zero
  – Customers rebel against costly commodity products
- **Emergence of New Business & Pricing Models**
  ➔ ***Software as a Service***– *cheaper products, bundled support & maintenance* (e.g. Salesforce.com)
  ➔ ***Free, But Not Free, Again*** – *software supported by advertising* (e.g. Google, Yahoo, Windows Live)

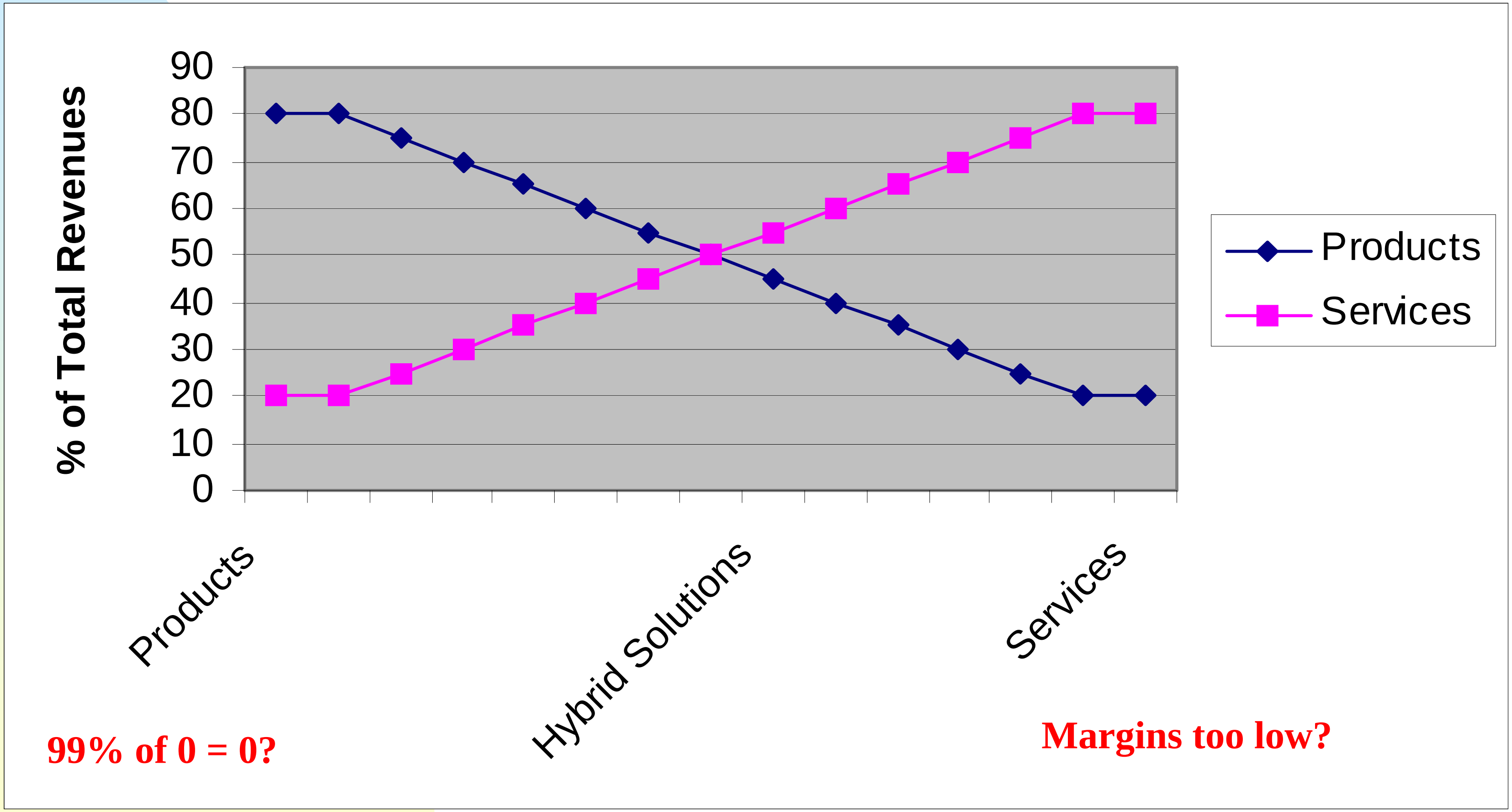

Siebel
$mil
1200
1000
800
600
400
200
0
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
NewProd
ServMain


Siebel
% of Total Revenues
100
90
80
70
60
50
40
30
20
10
0
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
NewProd
ServMain


Oracle
$million
12000
10000
8000
6000
4000
2000
0
1992
1994
1996
1998
2000
2002
2004
2006
New Prod
ServMain


Oracle
% of Total Revenues
70
60
50
40
30
20
10
0
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
NewProd
ServMain

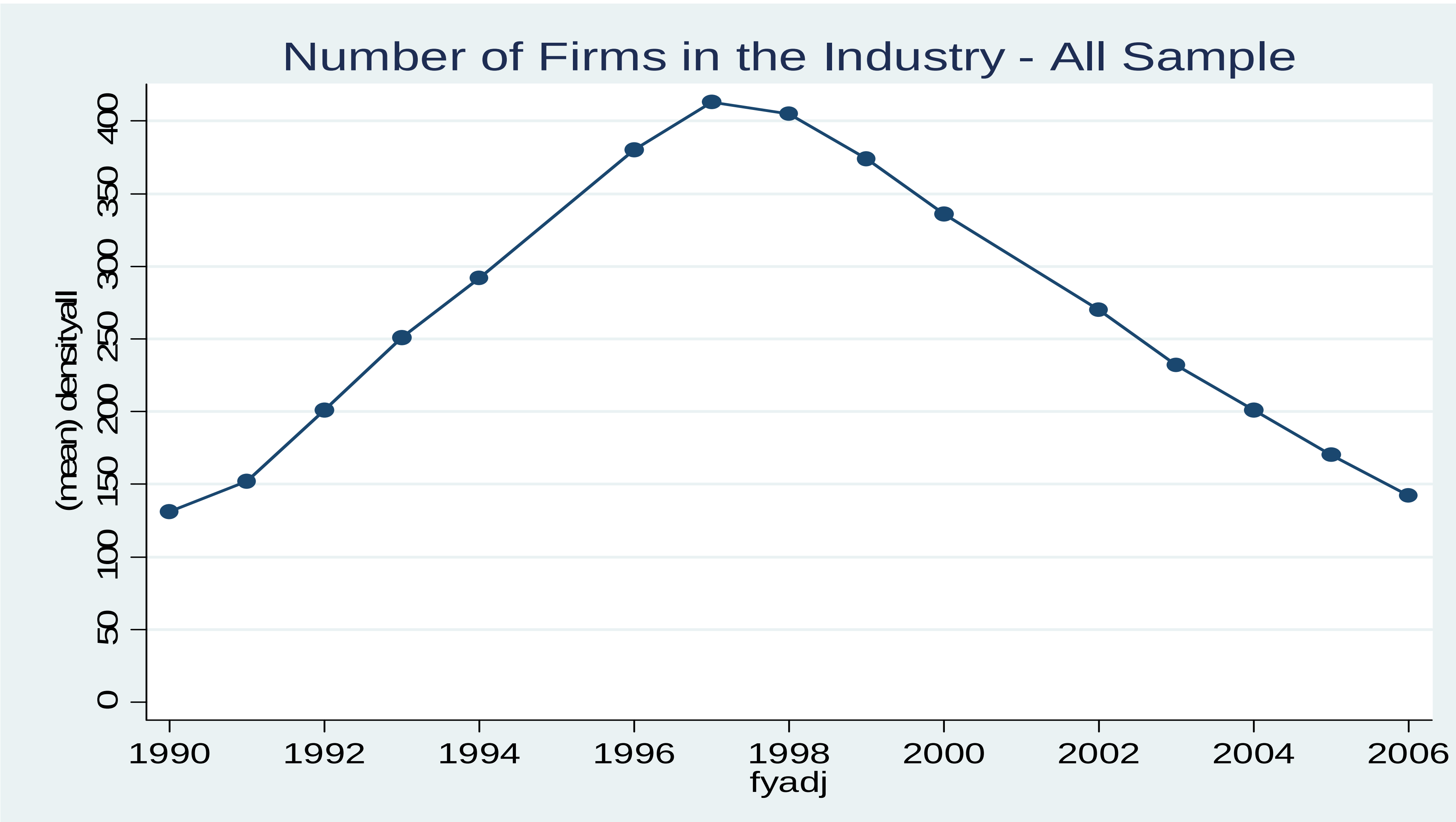
Business <u>or</u> Life Cycle Models?



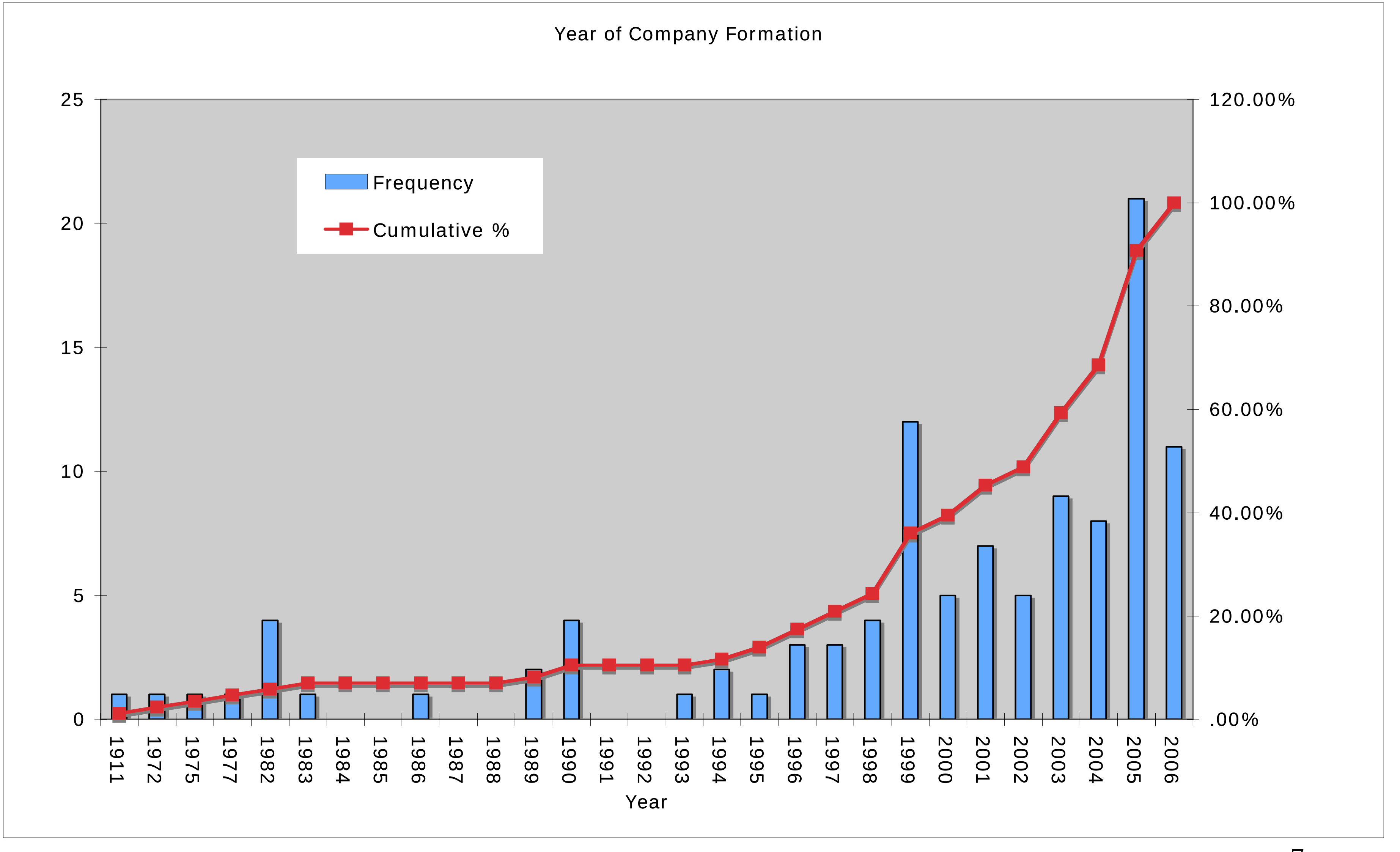
Source: M. Cusumano, <u>The Business of Software</u> (2004)

Public Software Product Firms

Listed on US Stock Exchanges (SIC 7372)

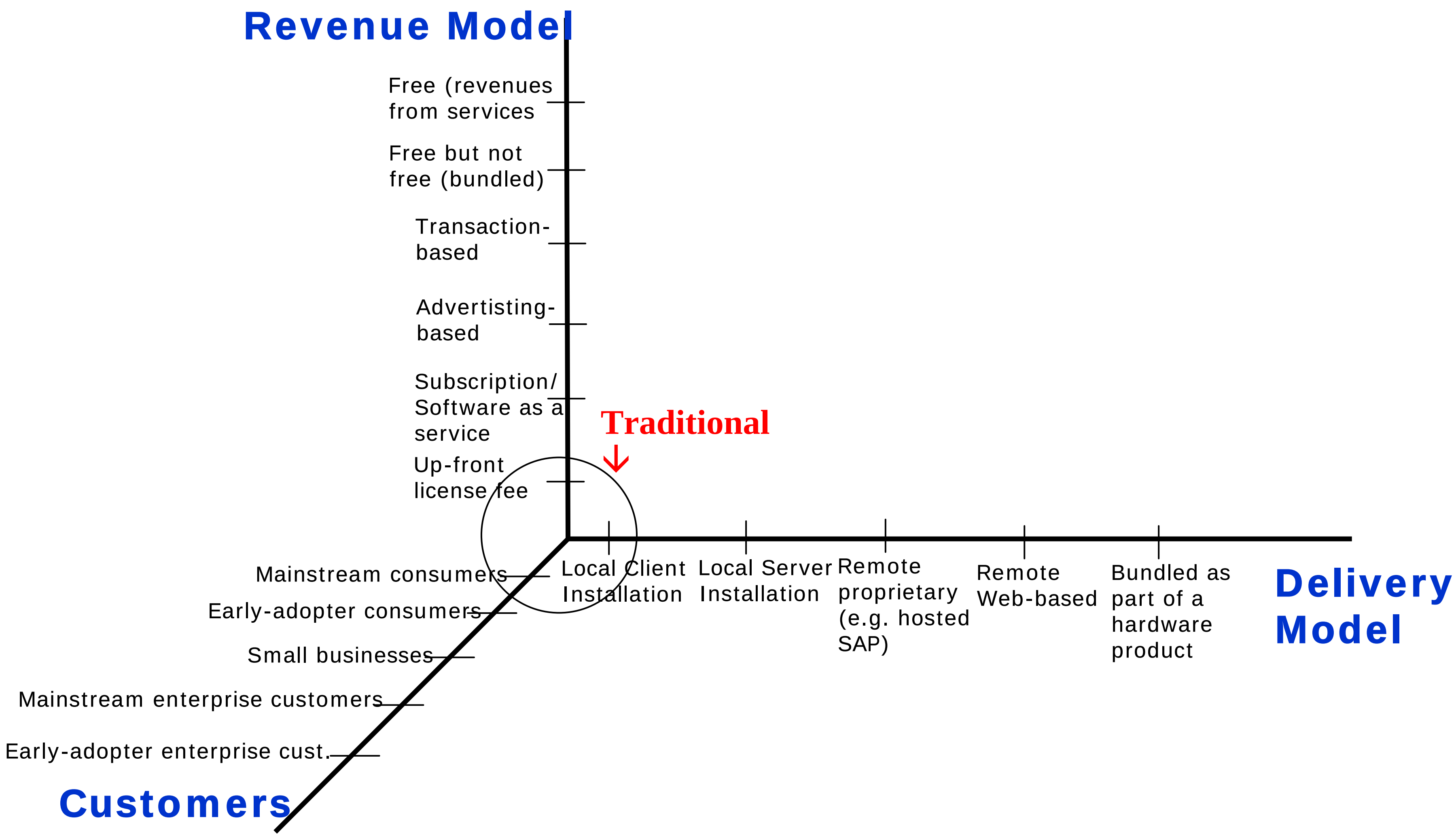


Web-Based Enterprise Software Vendors



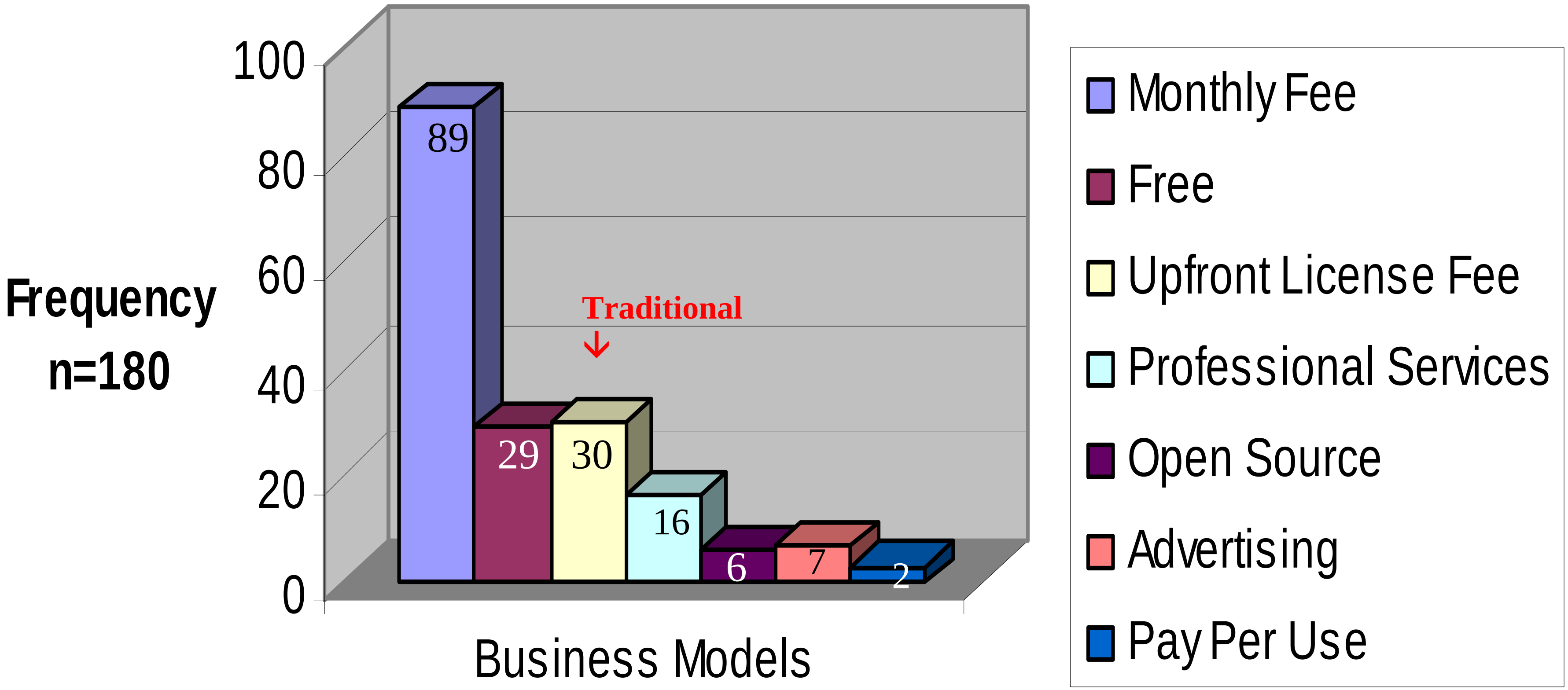
Source: Andreas Goeldi survey (MIT master's thesis, 2007) n=108

New Business Model Dimensions



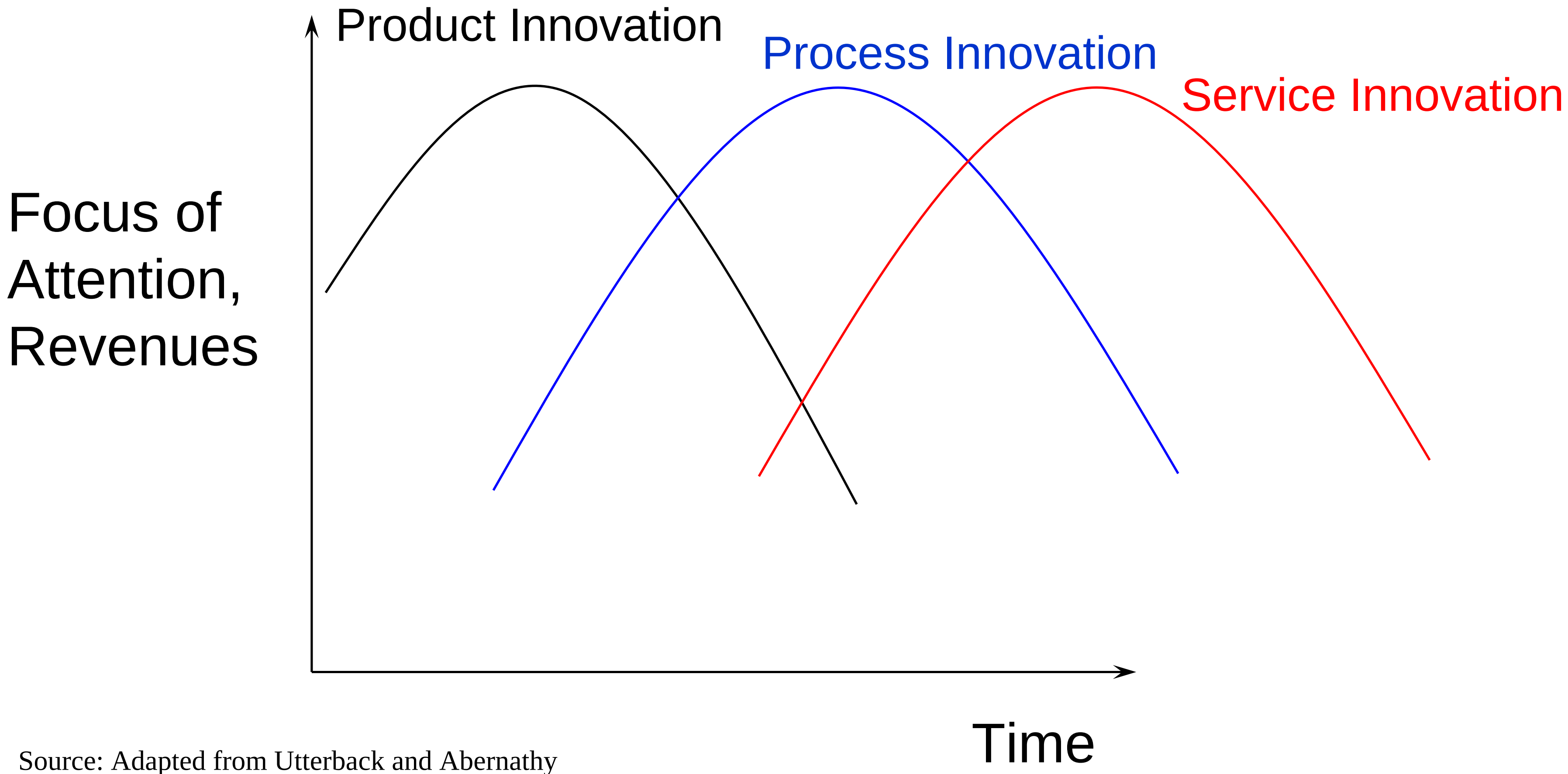
Source: 2006 MIT student team Krishna Boppana, Andreas Göldi, Bettina Hein, Paul Hsu, Tim Jones (Cusumano, The Software Business, 15.358)

108 Web-Based Enterprise Software Vendors



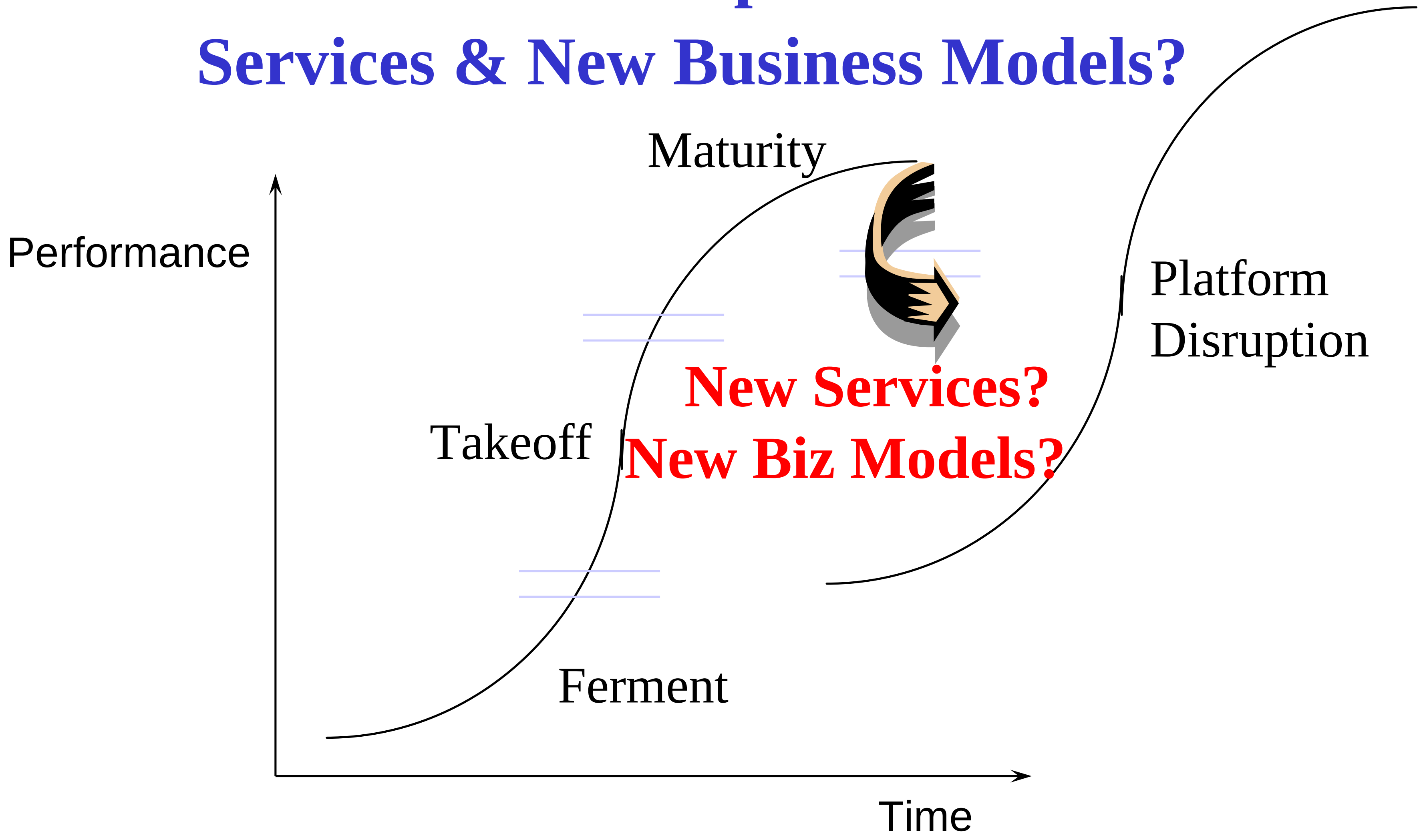
Source: Andreas Goeldi survey (MIT master’s thesis, 2007)

Different Evolution Curve – Product, Process, and/then *Services*?



Source: Adapted from Utterback and Abernathy

Different S-Curve Dynamics –
Product Platform Disruptions Generate New Services & New Business Models?



Strategy Questions

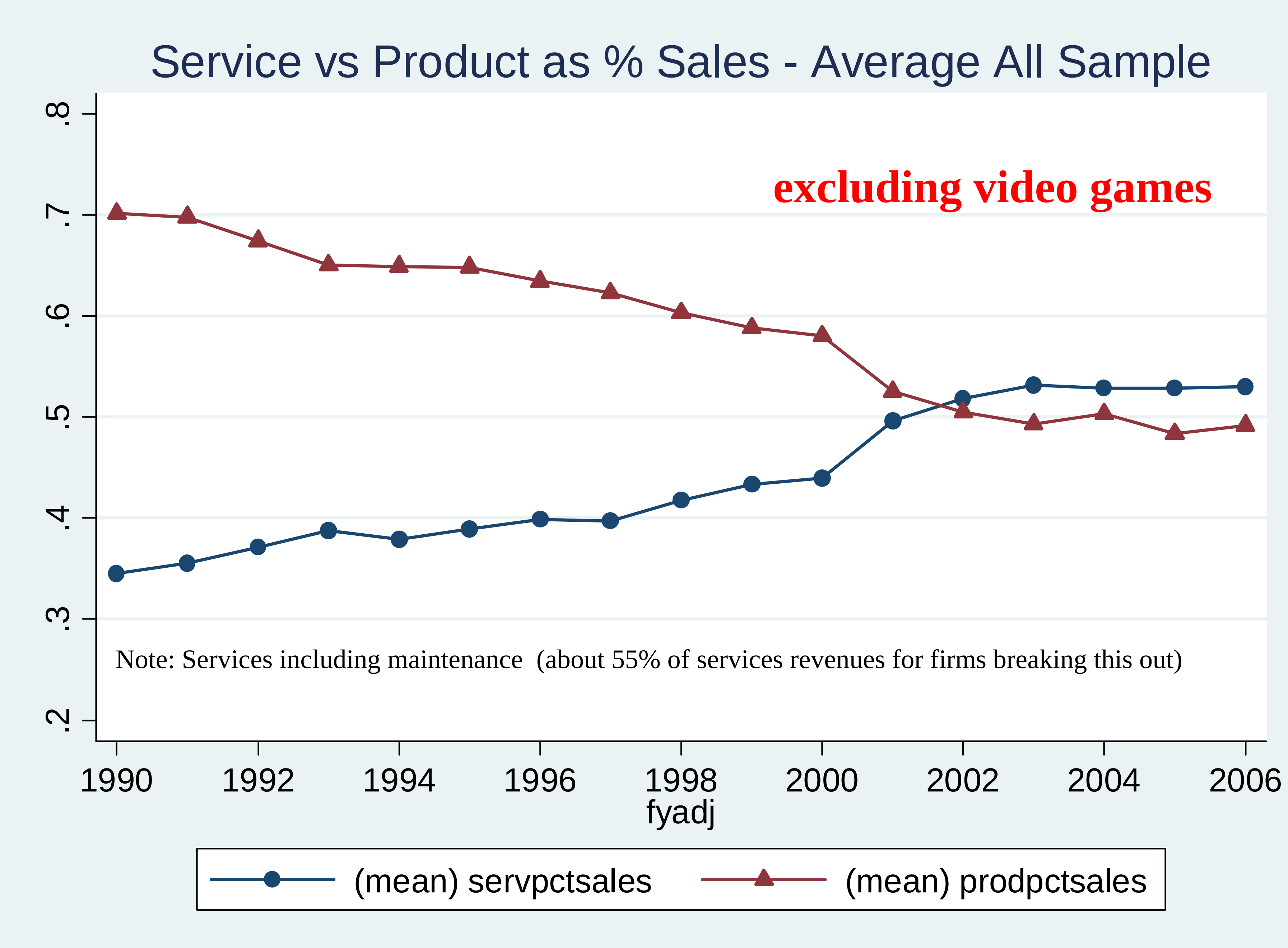
Rise in services and new business models <u>temporary</u> or <u>permanent</u>?

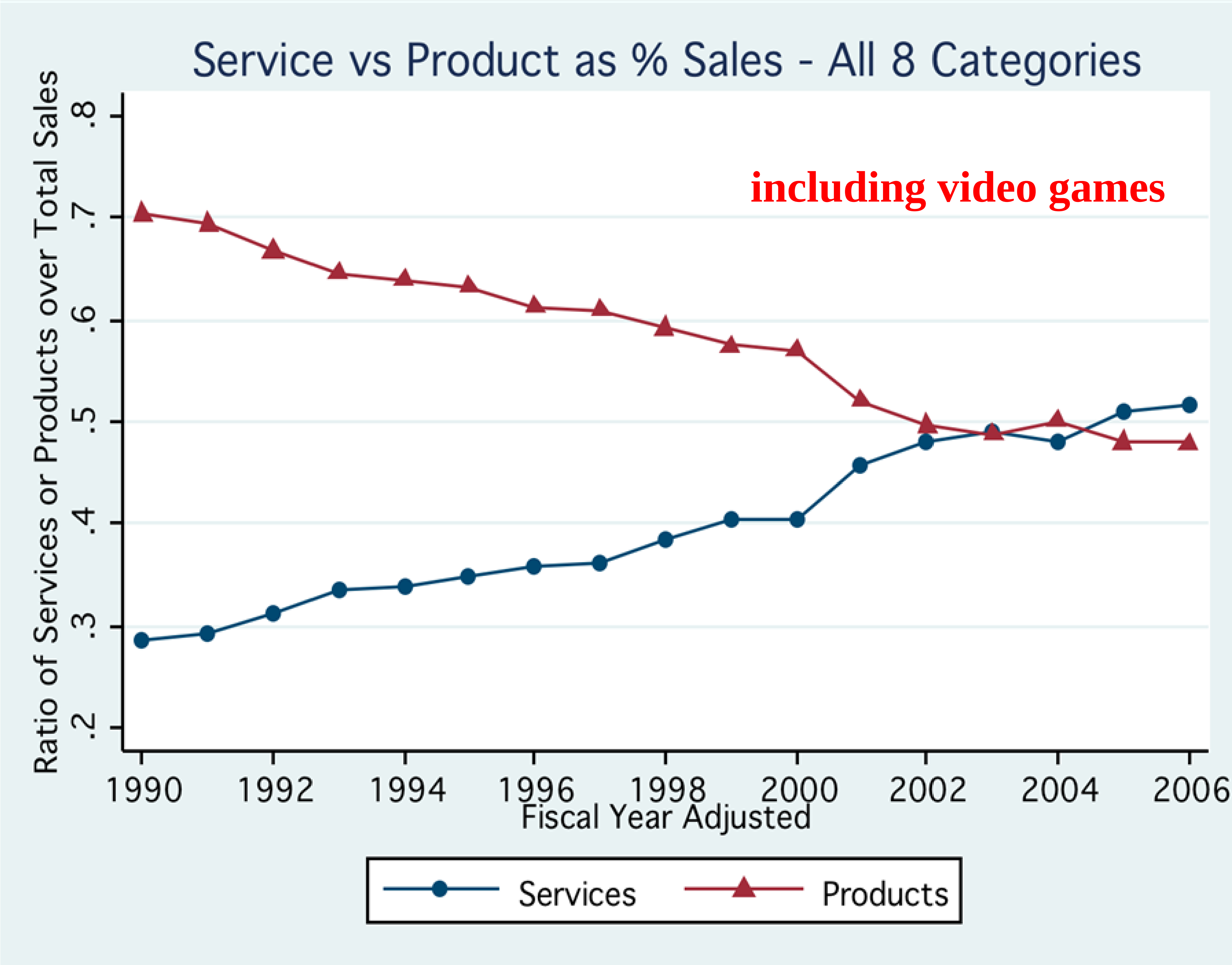
- ***<u>Temporary</u>* <u>Argument:</u>** In transition phase between platform and business model innovations *(now client-server to internet to web services)*

- ***<u>Permanent</u>* <u>Argument:</u>** Software now commoditized and prices will fall close to zero for standard products. Future is software as a service or "free but not free," supported by advertising or other indirect revenues. *Many other technology-based global industries will follow – such as consumer electronics & automobiles?*

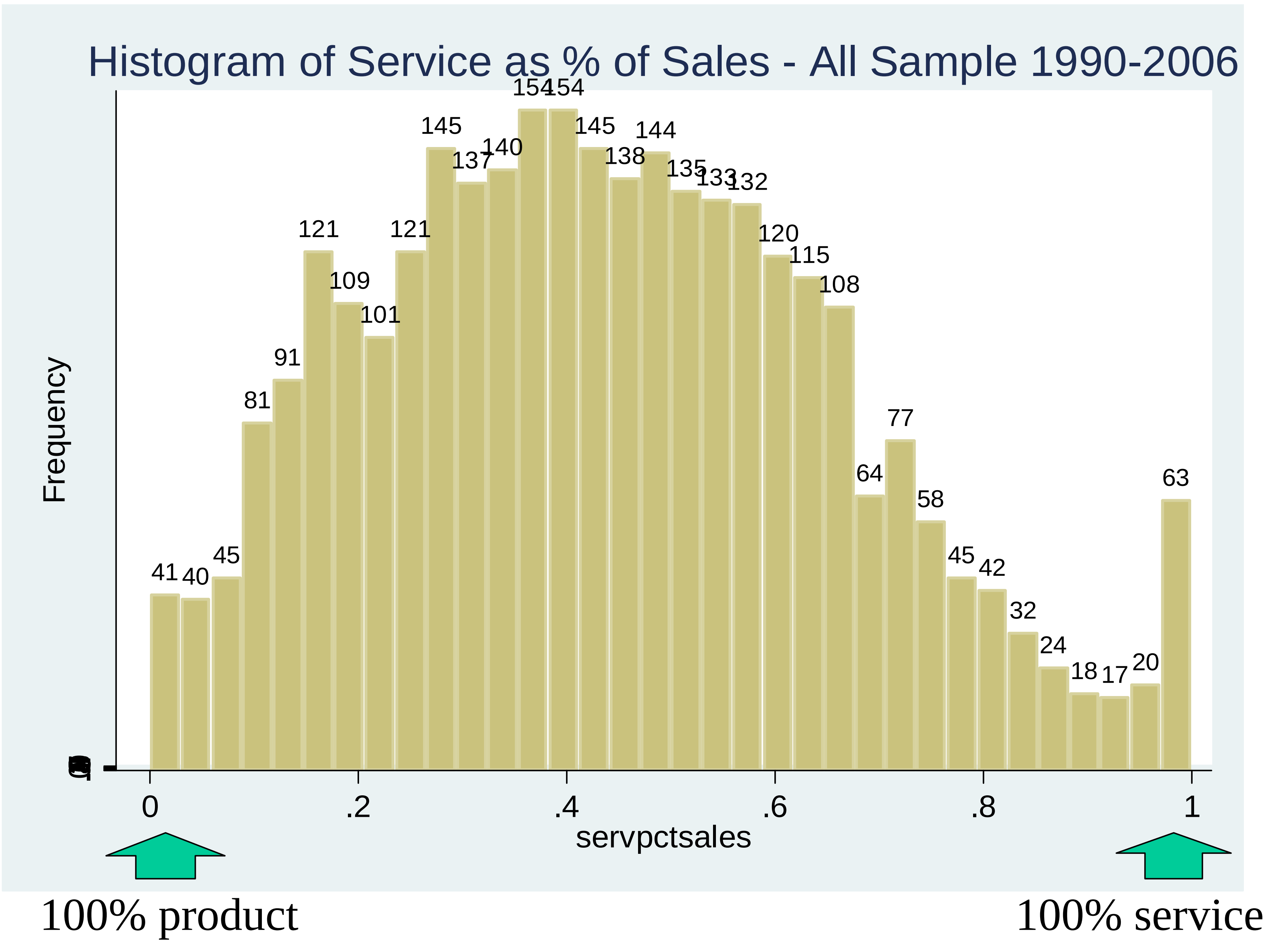
Software Products Company Database Study

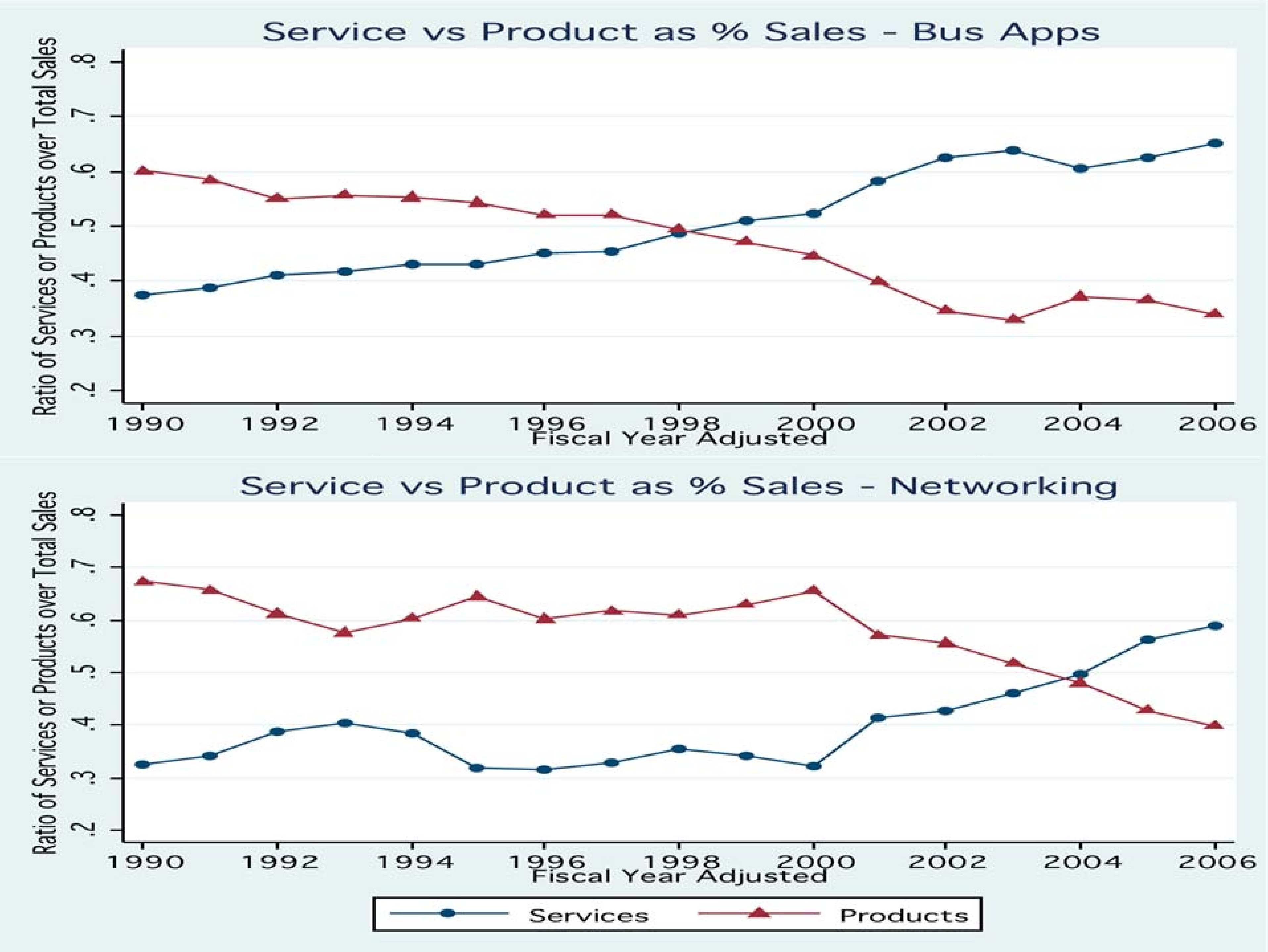
- Research project with Prof. Fernando Suarez (Boston U.) and Steve Kahl (Chicago GSB)
- Identified **ca. 500** public software "products firms" (listed on US stock exchanges) under SIC code 7372 – **PrePackaged Software**
- Since 2003, downloaded data from Compustat, Mergent, and directly from 10K reports
- Over 3000 yearly usable observations
- Average 10+ years of detailed financial data from 1990 or later


Service vs Product as % Sales - Average All Sample
excluding video games
.2
.3
.4
.5
.6
.7
.8
Note: Services including maintenance (about 55% of services revenues for firms breaking this out)
1990
1992
1994
1996
1998
2000
2002
2004
2006
fyadj
(mean) servpctsales
(mean) prodpctsales

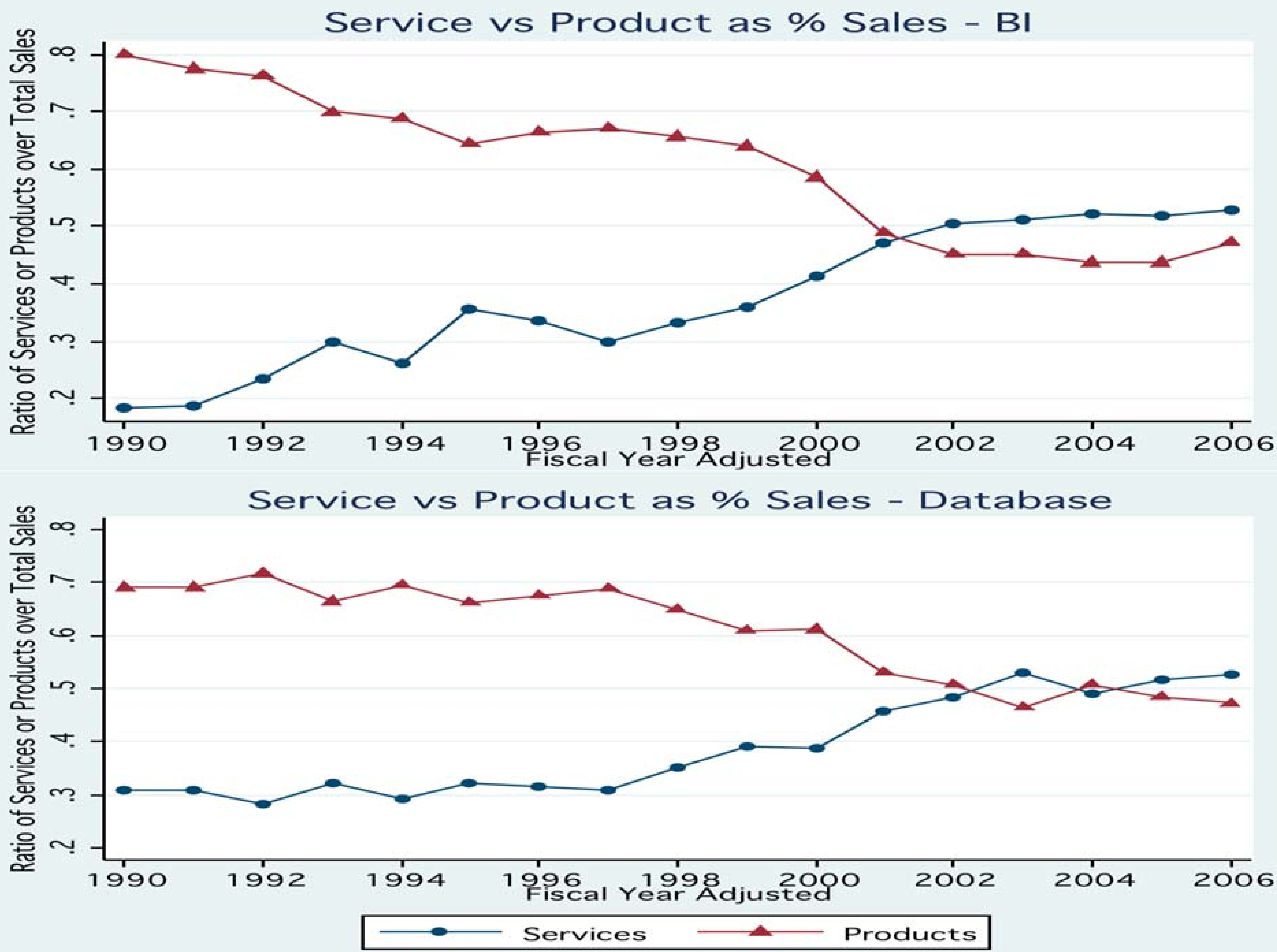


Service vs Product as % Sales - All 8 Categories
including video games
Ratio of Services or Products over Total Sales
.2
.3
.4
.5
.6
.7
.8
1990
1992
1994
1996
1998
2000
2002
2004
2006
Fiscal Year Adjusted
Services
Products

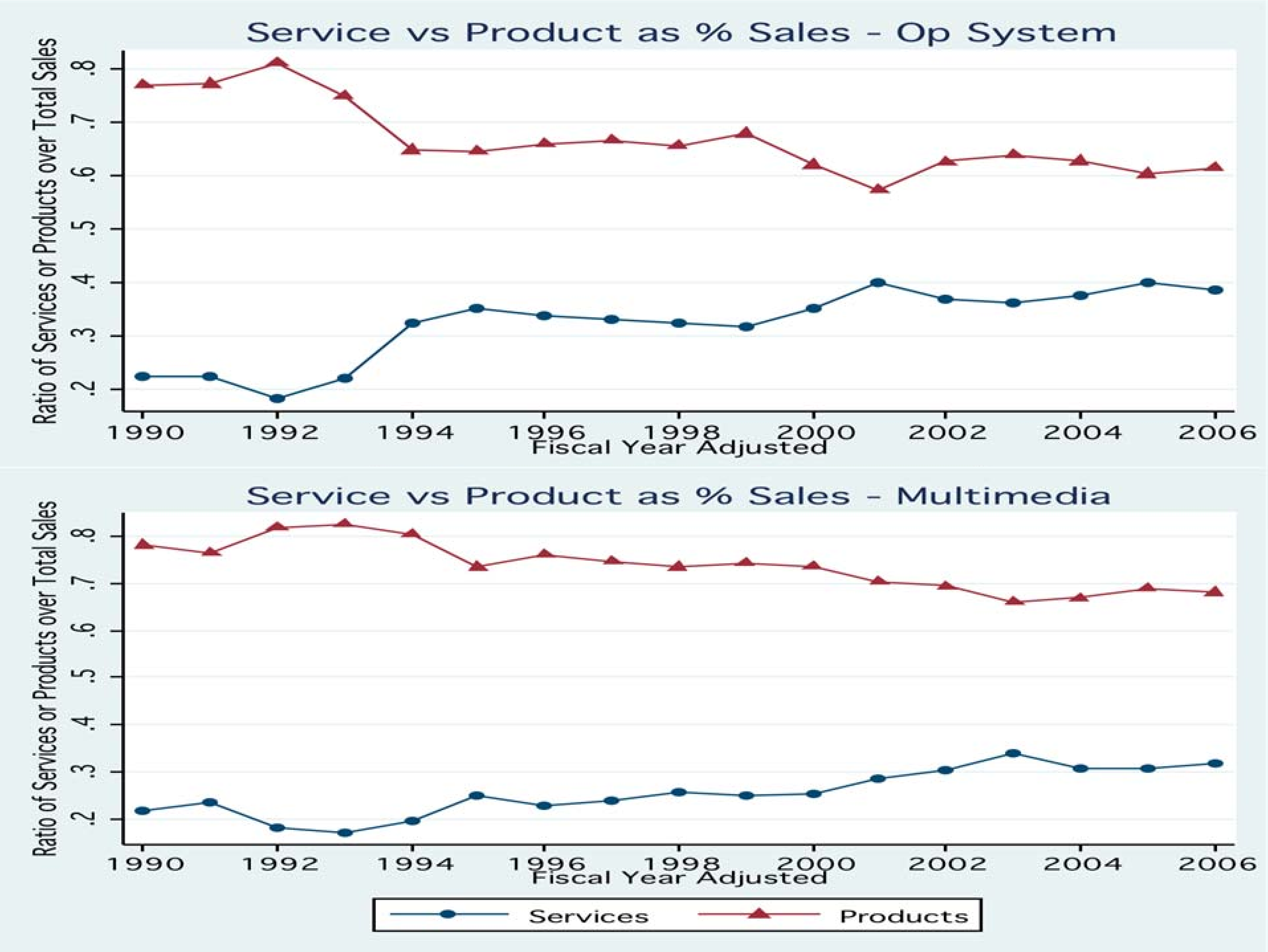

Histogram of Service as % of Sales - All Sample 1990-2006
Frequency
servpctsales
0
.2
.4
.6
.8
1
41
40
45
81
91
121
109
101
121
145
137
140
154
154
145
138
144
135
133
132
120
115
108
64
77
58
45
42
32
24
18
17
20
63
100% product
100% service



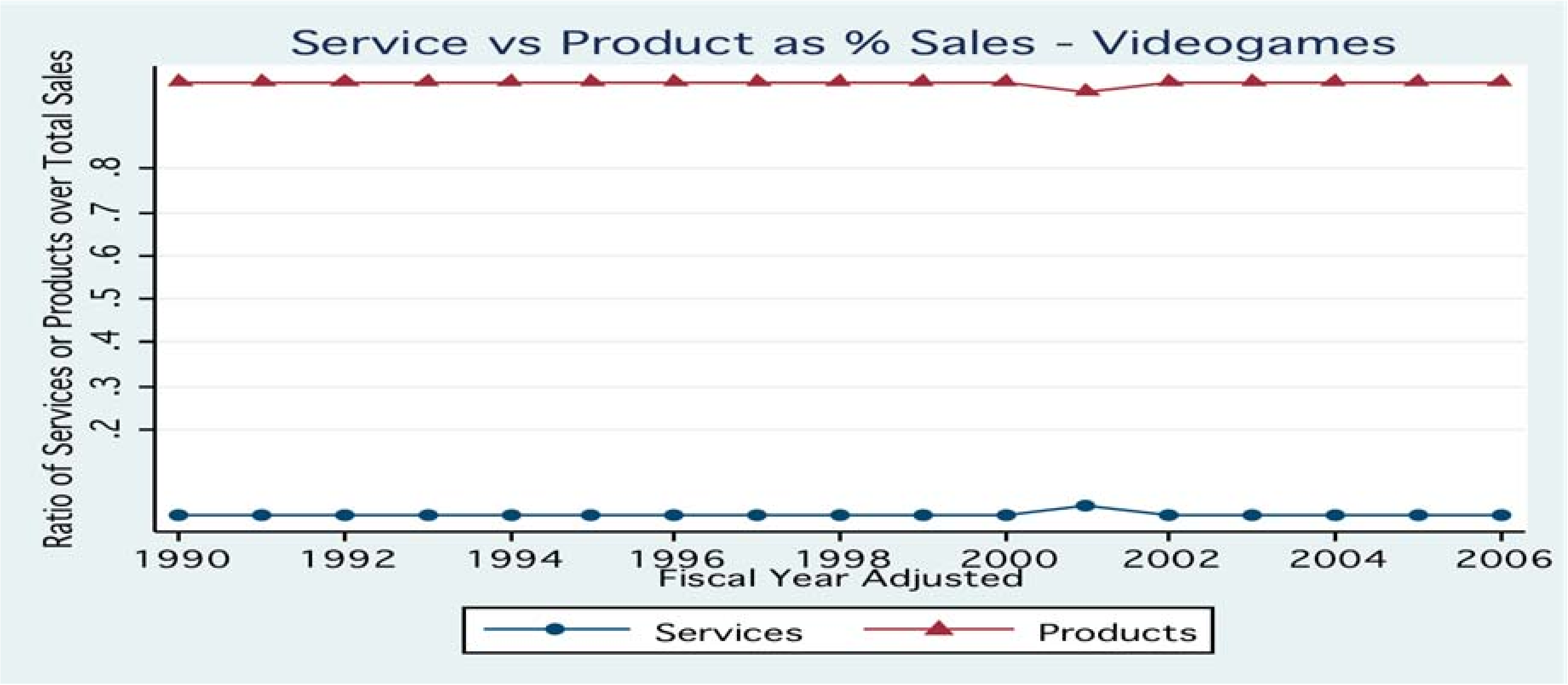
Service vs Product as % Sales - Bus Apps
Ratio of Services or Products over Total Sales
.2
.3
.4
.5
.6
.7
.8
1990
1992
1994
1996
1998
2000
2002
2004
2006
Fiscal Year Adjusted
Service vs Product as % Sales - Networking
Ratio of Services or Products over Total Sales
.2
.3
.4
.5
.6
.7
.8
1990
1992
1994
1996
1998
2000
2002
2004
2006
Fiscal Year Adjusted
Services
Products

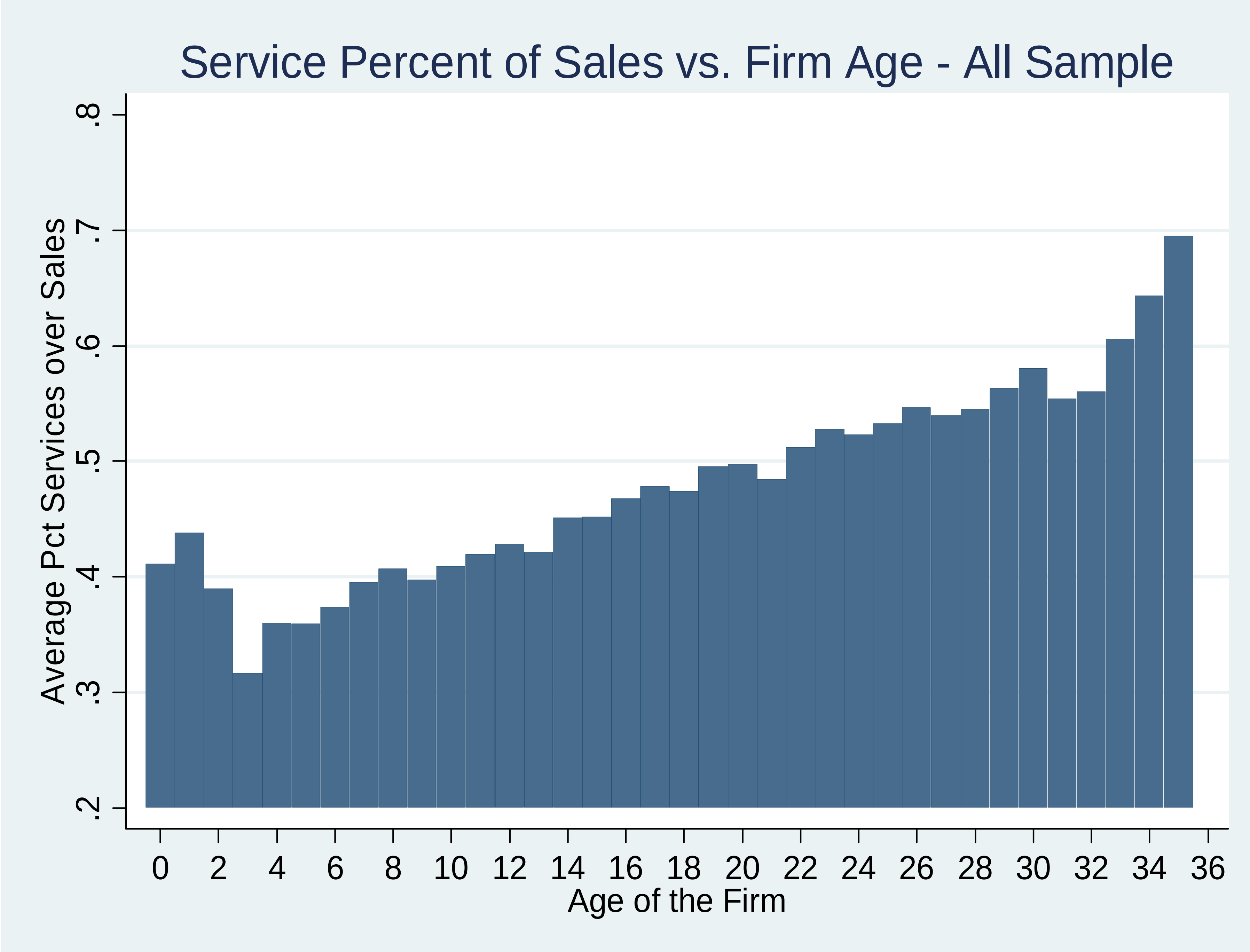


Service vs Product as % Sales - BI
Ratio of Services or Products over Total Sales
.2
.3
.4
.5
.6
.7
.8
1990
1992
1994
1996
1998
2000
2002
2004
2006
Fiscal Year Adjusted
Service vs Product as % Sales - Database
Ratio of Services or Products over Total Sales
.2
.3
.4
.5
.6
.7
.8
1990
1992
1994
1996
1998
2000
2002
2004
2006
Fiscal Year Adjusted
Services
Products



Service vs Product as % Sales - Op System
Ratio of Services or Products over Total Sales
.2
.3
.4
.5
.6
.7
.8
1990
1992
1994
1996
1998
2000
2002
2004
2006
Fiscal Year Adjusted
Service vs Product as % Sales - Multimedia
Ratio of Services or Products over Total Sales
.2
.3
.4
.5
.6
.7
.8
1990
1992
1994
1996
1998
2000
2002
2004
2006
Fiscal Year Adjusted
Services
Products


Service vs Product as % Sales - Videogames
Ratio of Services or Products over Total Sales
.2
.3
.4
.5
.6
.7
.8
1990
1992
1994
1996
1998
2000
2002
2004
2006
Fiscal Year Adjusted
Services
Products

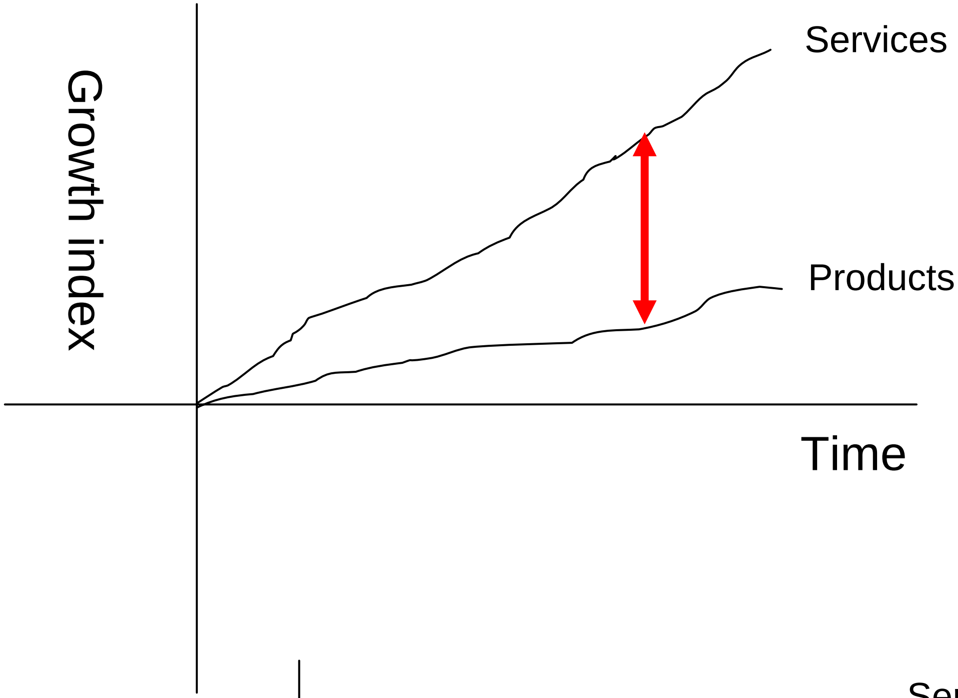

Service Percent of Sales vs. Firm Age - All Sample
Average Pct Services over Sales
.2
.3
.4
.5
.6
.7
.8
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
32
34
36
Age of the Firm

Why do Most Software Product Companies Shift to Services?

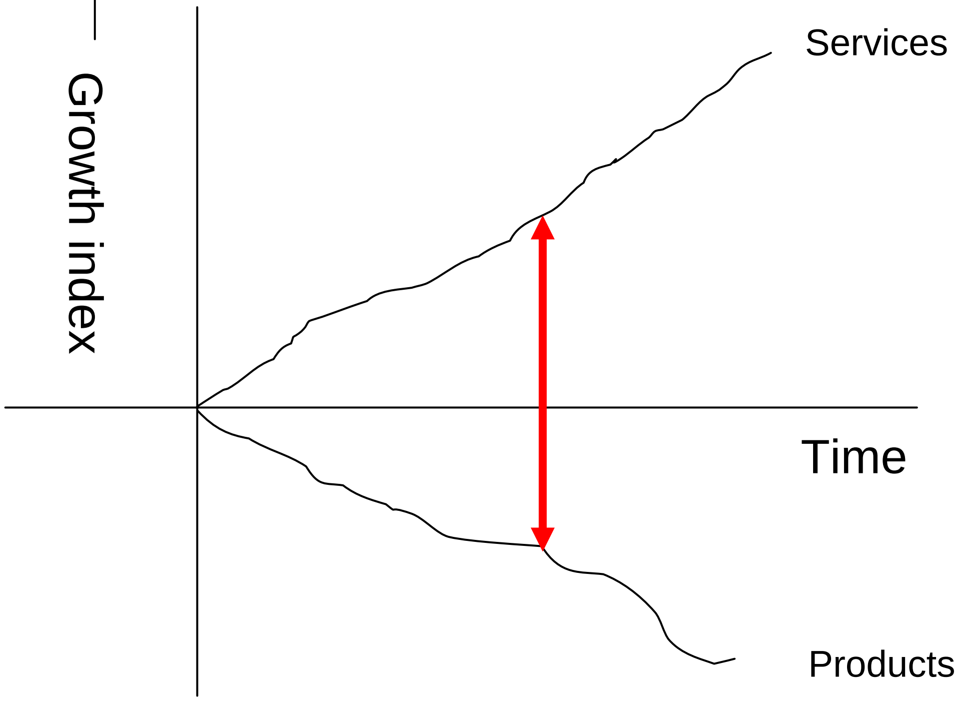
(Regression Analysis)

Services as % of total sales rise as…

- Firms age (services rise 1.8%/yr)
- Product sales growth slows down
- Industry consolidates (maturity, price competition)
- Industry recession (2001-2003 – prices fall)
- Internet products (disruption?) introduced
  - *though firm effects – age, product growth lag, total sales lag – most important effect*



A: Case of a firm where products and services revenues reinforce each other



B: Case of a firm where products and services revenues <u>do not</u> reinforce each other

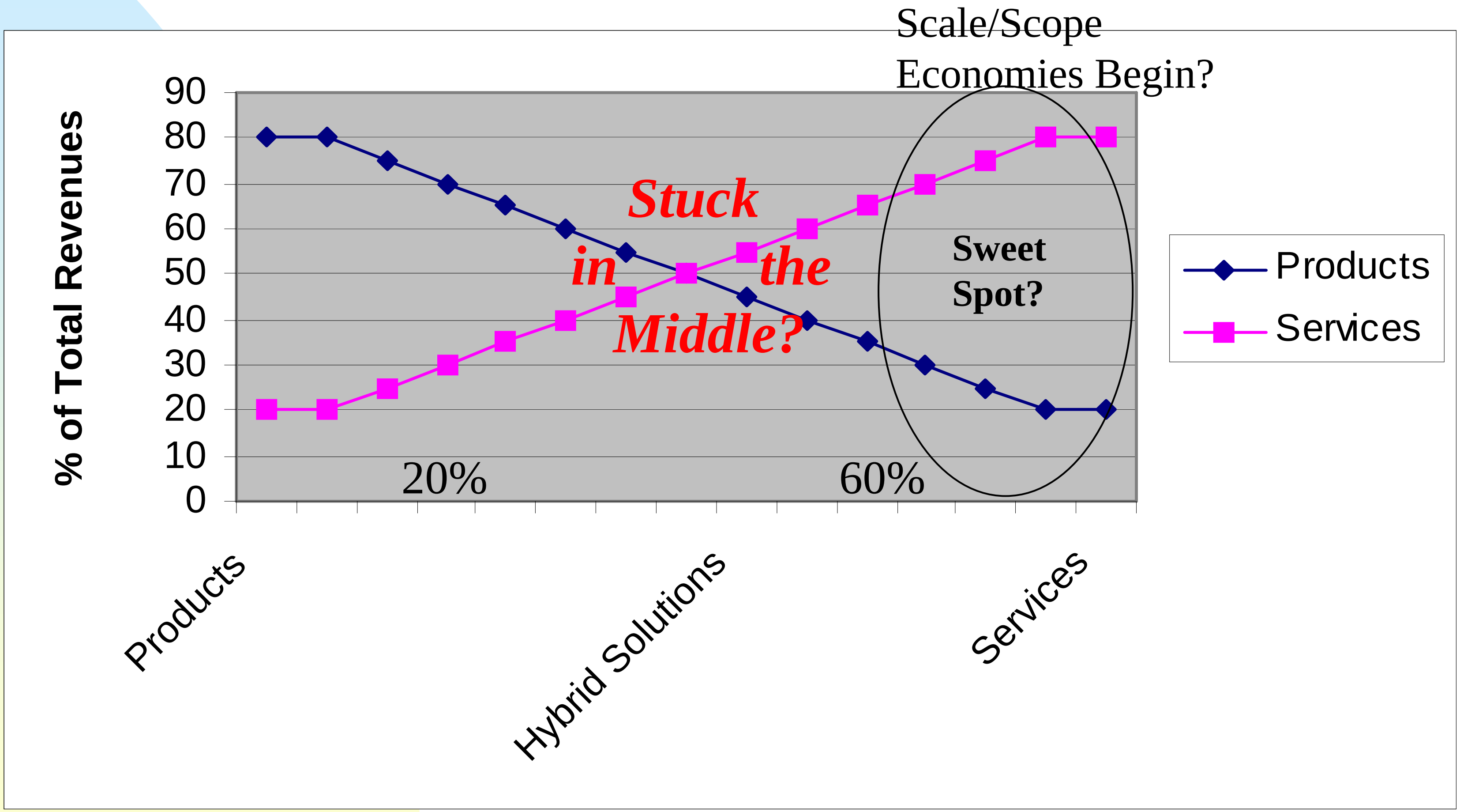
Some More Data Analysis

- Services have positive impact on operating profits of product companies when reach about 60% of total sales
  - **About 70% product sales optimal for profitability**

- **Hybrid firms** generally have (1) higher and more stable profits and (2) higher market valuations than the average "pure" (100%) software product firm
  - **But pure product firms disappearing in software industry**

- Maintenance about **55-60%** of service revenues, for software product companies, with high gross margins
  - **Each 10% increase in maintenance as a % of service & maintenance revenues = 5% increase in SM gross margins**

Services Impact on Profits & Market Value: Sweet (vs. Sour) Spots



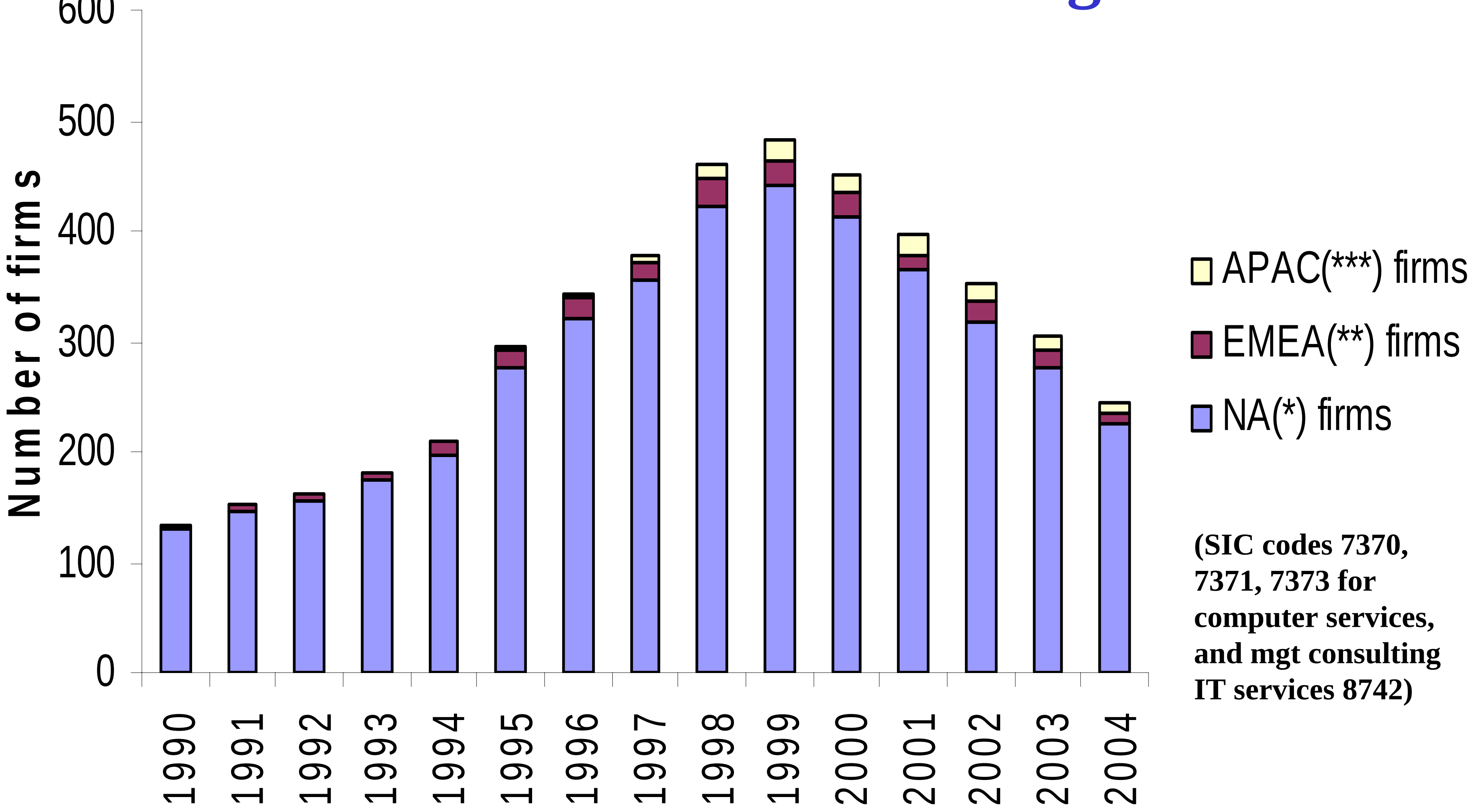
Sample: Software Product Companies

Impact of Industry Change on SI and IT Services Firms?

- Client server to internet led to major increase in public IT services firms in US
- But consolidation of industry and products business also seen in IT services firms
  - Number of publicly listed firms in our database dropped from ca. 550 in 2000 to under 400 in 2005 (preliminary estimate, multiple SIC codes)
  - Product sales used to be **20%** of service firms' revenues; sharp decline to **3%** today (estimate)
- ***Software product and other technology companies could have taken more of the services business for themselves – and probably will in future!***

Public IT Services Firms

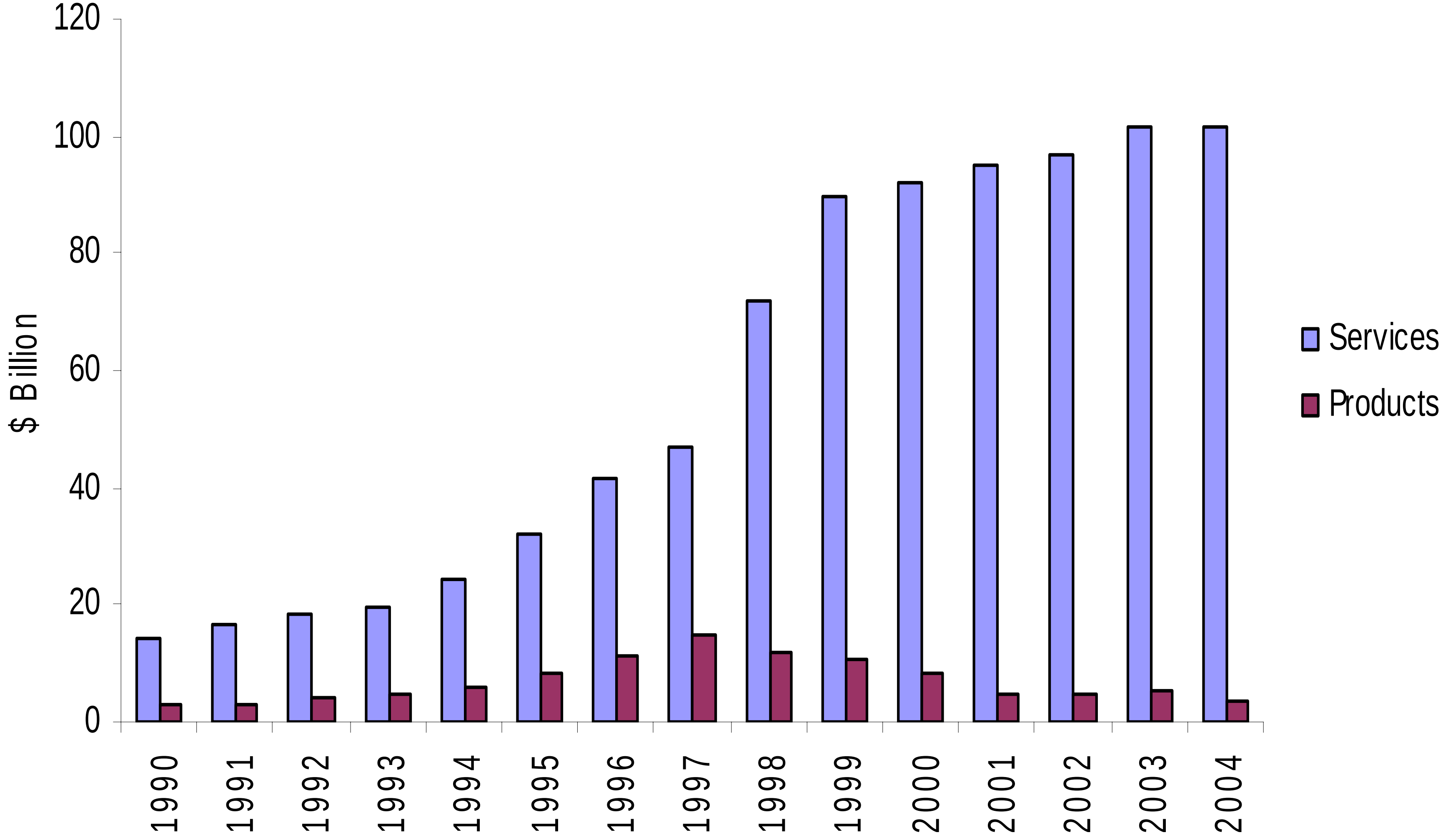
Listed on US Stock Exchanges

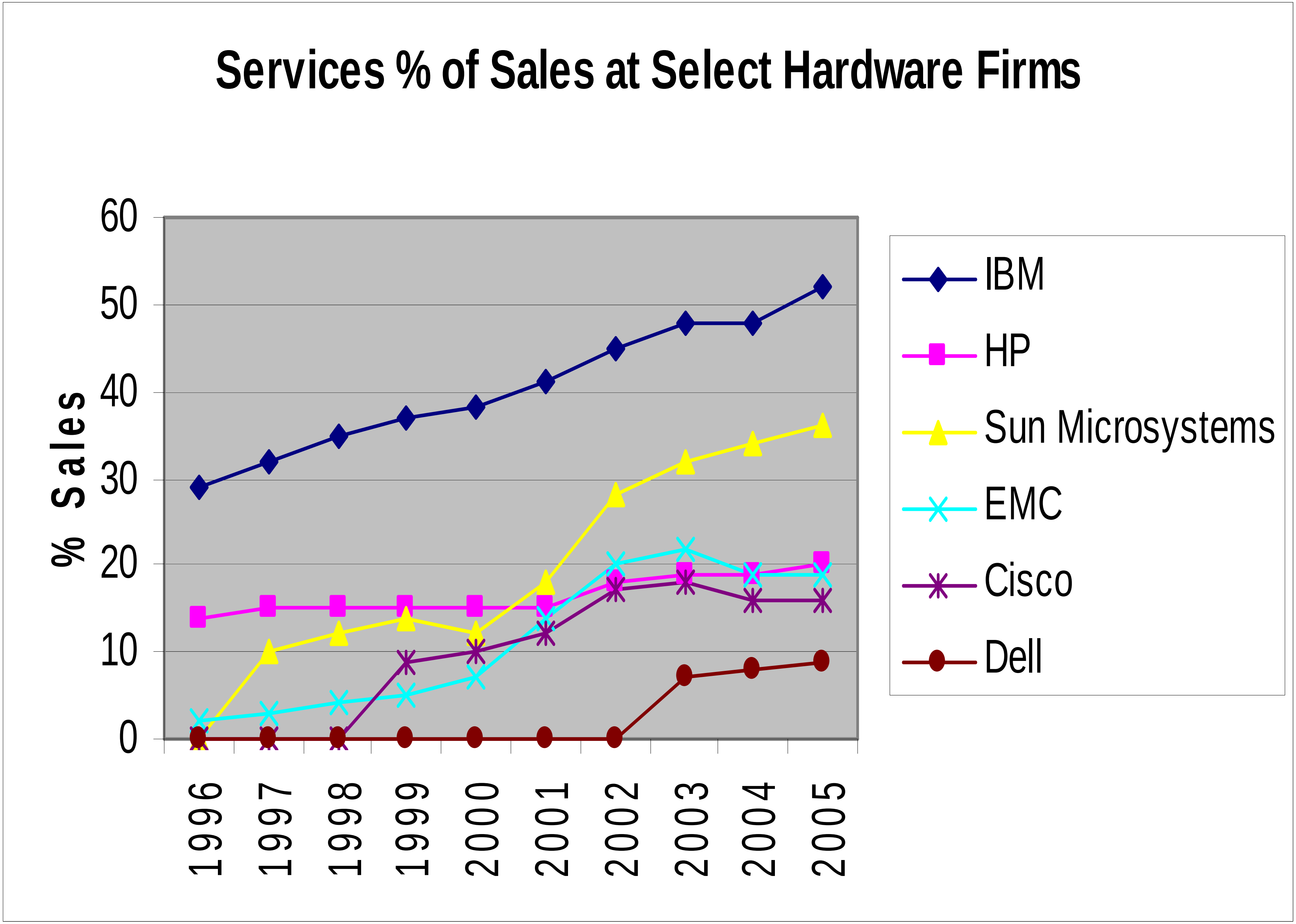


(SIC codes 7370, 7371, 7373 for computer services, and mgt consulting IT services 8742)

*** North-America including Caiman islands and Bermuda. ** Europe and Middle-Eastern. *** Asia-Pacific**

Revenue Mix in IT Services Firms




Services % of Sales at Select Hardware Firms
% Sales
60
50
40
30
20
10
0
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
IBM
HP
Sun Microsystems
EMC
Cisco
Dell

Conclusions

- Pure software product firms are disappearing, except some **platform leaders** or **hit product companies**
- "Pure" IT services firms also disappearing, and under threat from low-cost-good quality services in India, etc.
- IT services firms, former partners of the product firms, **now must compete** for the same services revenues!
- But services remain essential to de-commoditize product technology and add new sources of revenues & profits: ➔**Hybrid Business Model**
  - **Products remain the "engine" that drives new service and maintenance revenues**
  - **All firms must develop stronger services capabilities**

Impact of Industry Change on IT Services Firms?

- Client server to internet led to major increase in public IT services firms in US
- But consolidation of industry and products business also seen in IT services firms
  - Number of publicly listed firms dropped from ca. 500 in 1999 to ca. 250 in 2006 (preliminary estimate, multiple SIC codes)
  - Product sales used to be **20%** of service firms' revenues; sharp decline to **3%** today (estimate)
- ***THE BATTLE: Software product companies now fighting with current/former partners (IT and SI services companies) for the same services revenue!***