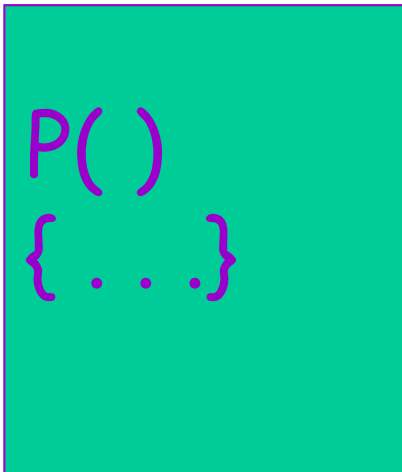


CS155a: E-Commerce

Lecture 11: October 11, 2001

**The VeriSign Story and
an Introduction to B2B**

<http://www.bob-soft.com>



P()
{...}



SP

$SP = \text{signature}(P, SK_{\text{bob}})$

Bob-soft: PK_{bob}
Sue-soft: PK_{sue}
.
.
.

Bob-soft



PK_{bob}



Alice: Verify (P , PK_{bob} , SP)

New Potential Problem

- Is PK_{bob} the "Right Key"?
- What does "Right" mean?

Traditional Meaning

Bob-soft \leftrightarrow PK_{bob}

↑
Accurate?

Traditional Solution

Alice's
Computer

PK_{CA}

Bootstrapping Trust

(Bob-soft, PK_{bob})

SK_{CA}

Signature Algorithm

$CERT_{\text{bob}}$

$Name_1,$	$PK_1,$	$CERT_1$
$Name_2,$	$PK_2,$	$CERT_2$
\vdots	\vdots	\vdots

VeriSign: An Internet "Trust Services" Company

- Full name: VeriSign, Inc.
- Employees: 2300
- Stock Price (**VRSN**):
 - \$47.67 as of 10/8/01, 2pm
 - 52 week range: 26.25 - 196.75
- Earnings Per Share: **-76.41**
- Provides Internet security certificates, payment services, and domain registration.



VeriSign History

- Opened headquarters in Mountain View, CA, in 4/1995.
- Founding mission: "Enable everyone, everywhere to use the Internet with confidence."
- Stratton Sclavos, current CEO, became president in 7/1995.
- IPO in 1/1998 at \$3.50/share.
- Merged with Network Solutions (most prominent domain registrar) 6/2000.

VeriSign (VRSN) Stock Chart

Source: Quicken.com (10/8/2001)

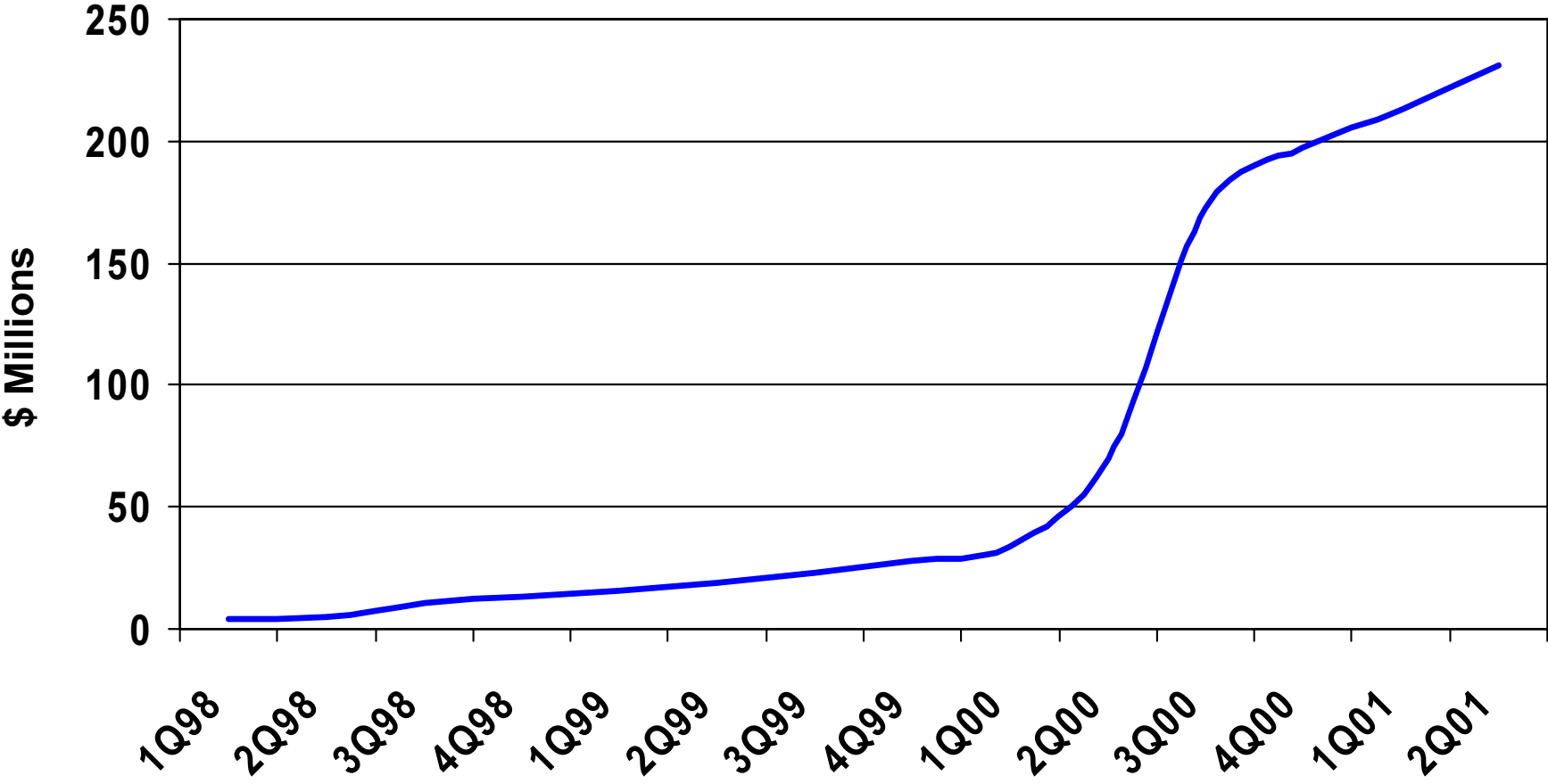


Period : Oct-7-1998 - Oct-7-2001

[S] = Stock Split

VeriSign Quarterly Revenues

Source: VeriSign Corporate Press Releases



VeriSign Services

- **Domain Registration:** Network Solutions is the active registrar for 15.5 million domain names in .com, .net, .org, and .tv.
- **Website Security:** Digital certificates, *e.g.*, to use SSL. Installed base of 305,000 certificates.
- **Payment Services:** Credit-card processing capability and other e-commerce tools. 19,000 active online merchants.
- **Global Registry:** Maintains top-level domains and global databases for DNS lookup. The directory contains over 30 million addresses and serves over 2 million lookups per day.

Electronic Commerce

Definitions

Electronic commerce is a set of technologies, applications, and business processes that link business, consumers, and communities.

- For buying, selling, and delivering products and services
- For integrating and optimizing processes within and between businesses.

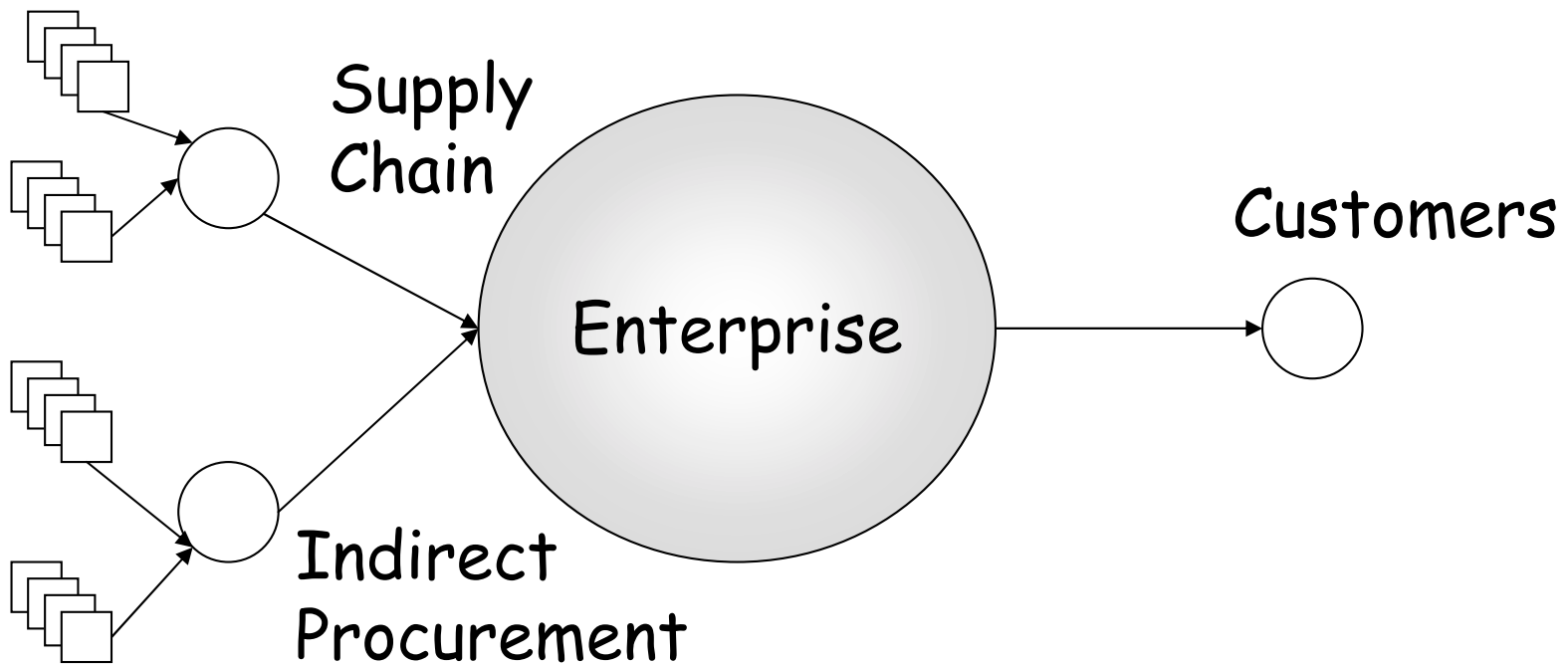
Definitions (continued)

- **B2B Commerce:** "Interactions relating to the purchase and sale of goods and services between businesses." Estimated to be 70% of the US economy!
- **B2B electronic marketplaces ("B2Bs"):** Systems of suppliers, distributors, customers and infrastructure and service providers that use the Internet for communications and transactions.

Business Models for Electronic Commerce

- Stores and malls
- Virtual communities
- Purchasing center
- Auctions and reverse auctions
- ★ Value-chain service provider
- ★ Value-chain integrator
- ★ Collaboration and concurrent engineering
- Information brokerage

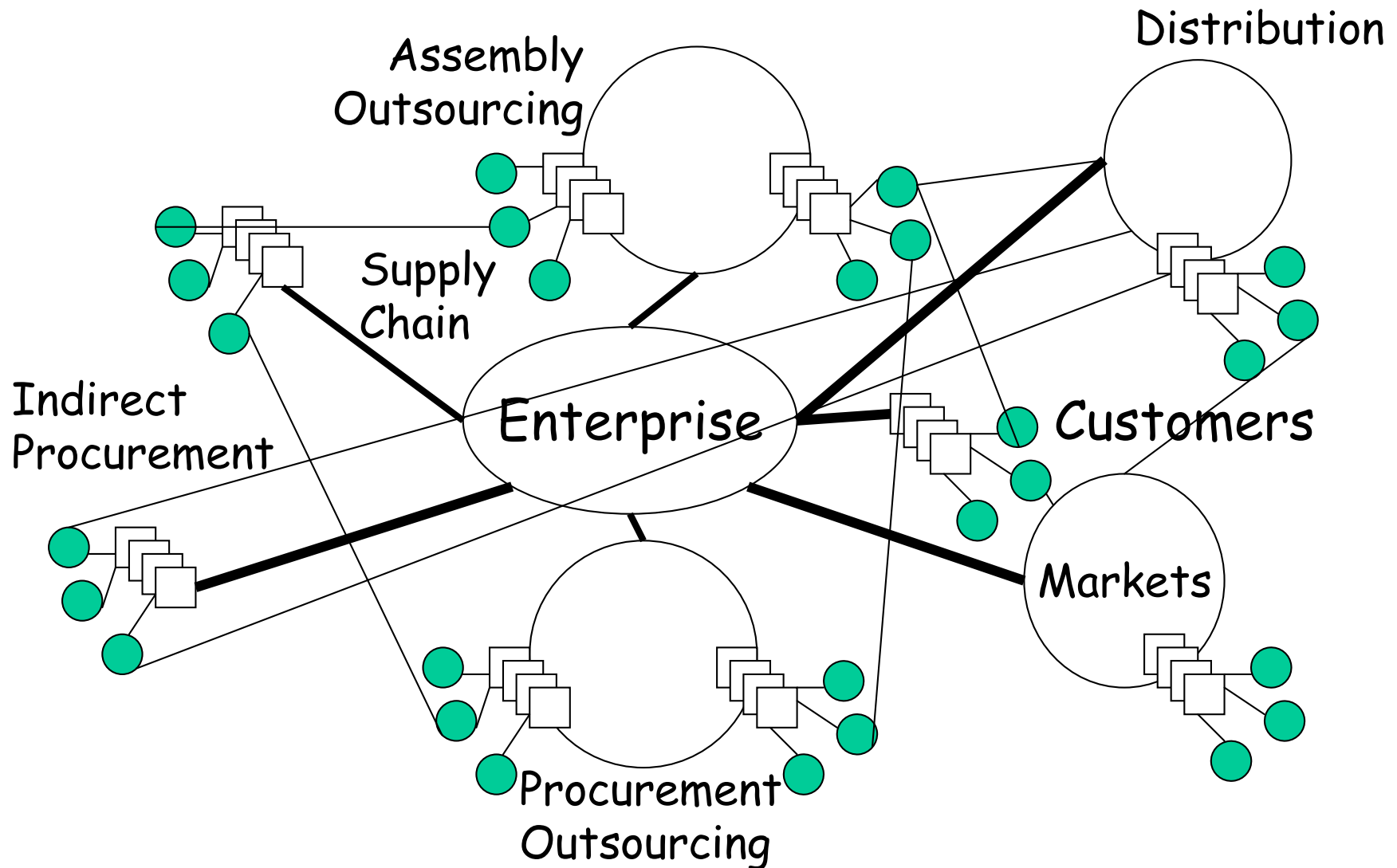
Traditional Enterprise-Centric View



Internet Business Models and Integration Requirements

The Internet enables new models for marketplaces, trading communities, outsourcing, open sourcing, buying consortia, supply chain integration and "virtual enterprises" that are fundamentally different.

Networks of Commerce Communities



Specific B2B Tasks

- Search
- Source
- Specify
- Negotiate and bid
- Order
- Receive goods and services

“Horizontal” B2Bs

- Serve many different industries.
- “Product focus” is broad.
- Examples
 - HotOffTheWire (consumer goods for small and midsized retailers)
 - NTE (National Transportation Exchange, which sells unused trucking capacity to businesses)
 - equalFooting (obtains volume discounts for small businesses through “virtual aggregation”)

"Vertical" B2Bs

- Serve a single industry
- Product focus is on "the supply chain of one product category" or on "expertise and in-depth content knowledge for one industry."
- Examples
 - Covisint (automotive)
 - MetalSite
 - BuyProduce

Revenue Models

- Transaction-related fees
 - Per-transaction
 - Flat (*e.g.*, monthly, yearly)
 - Value-based
- Membership/Subscription fees
- Value-added service fees
 - Logistics (*e.g.*, shipping)
 - Financing
- Advertising and Marketing
- ★ Sales of Data and Information

Participant Ownership

- Advantages
 - Economies of scale
 - Technical expertise and content knowledge
 - Incentive to maintain high-volume participation
- Disadvantages
 - Barriers to niche-player and new-player entry
 - ★ Anti-trust Issues
- Alternatives
 - Ownership by technology firms
 - Ownership by 3rd party investors, *e.g.*, venture capitalists

Reminder: Exam October 16

The first hour exam will be given in class on Tuesday, October 16.

This exam counts for 20% of your course grade.