

Open source and the utility revolution

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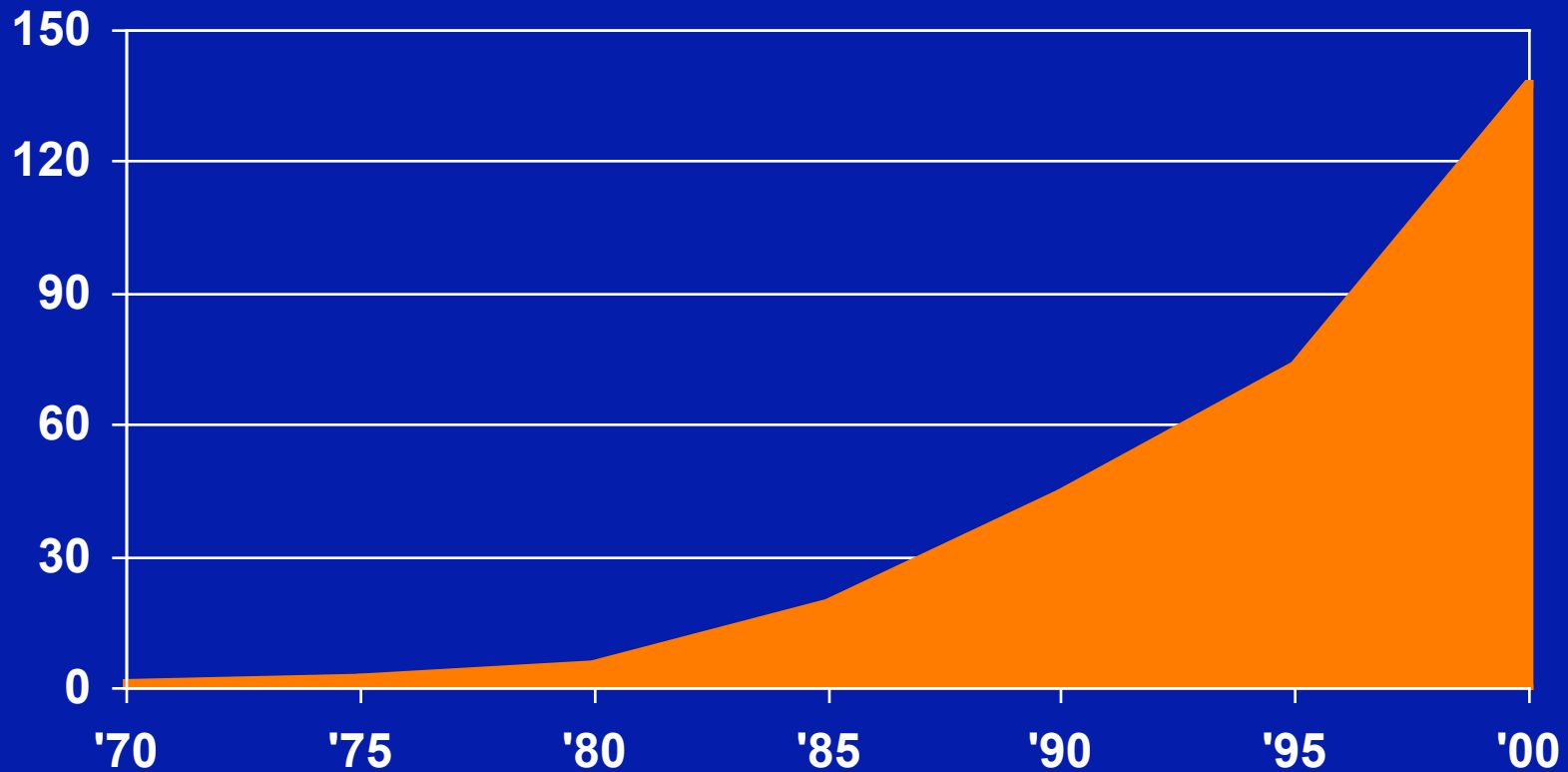
1955: birth of open source



SHARE
("Society to Help Avoid Redundant Effort")

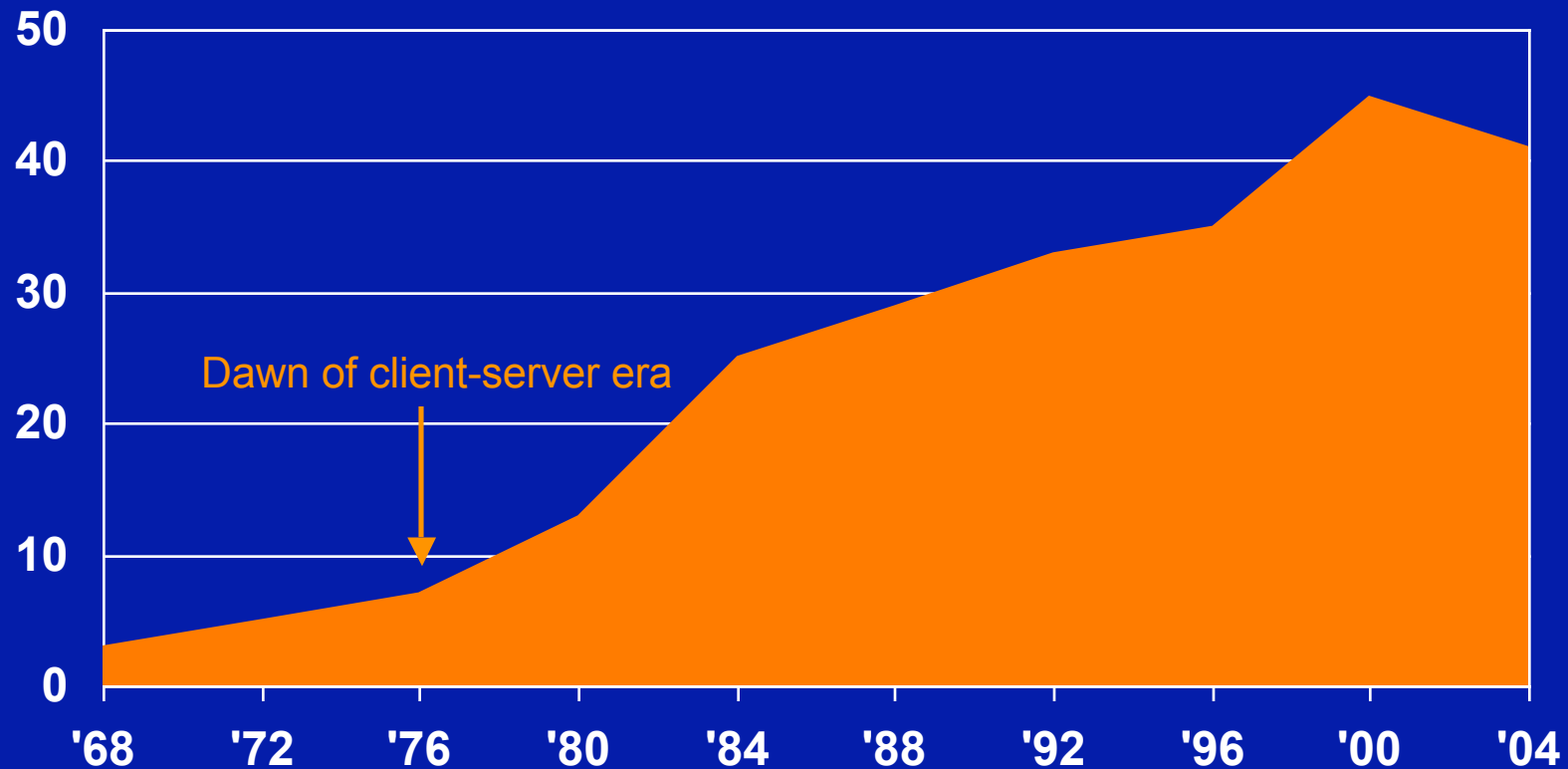
Rise of the software industry

U.S. software sales in billions of dollars

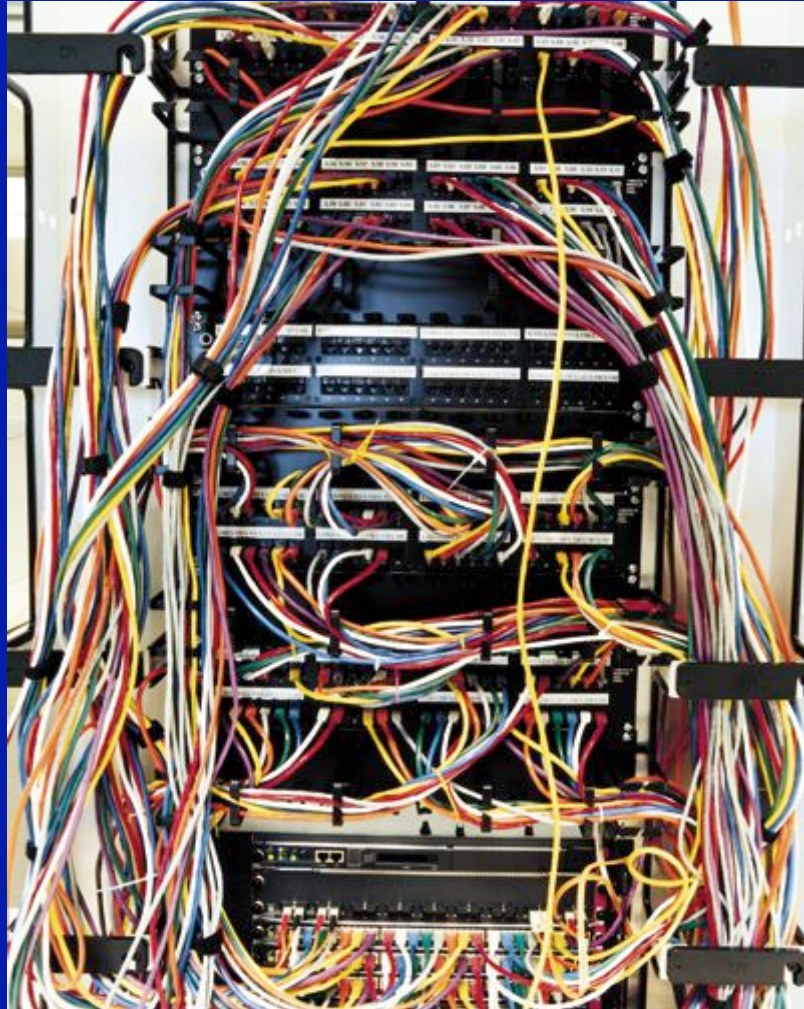


The price of private computing

IT as % of total equipment investment by U.S. firms



IT today



The next era



Yeah, right

Utility computing has been buried in jargon and slogans

“Grids” “Autonomic systems”

“Adaptive computing” “Virtualization”

“Blades” “Organic computing”

“SaaS” “On-demand”

“Isolated storage containers” “SOA”

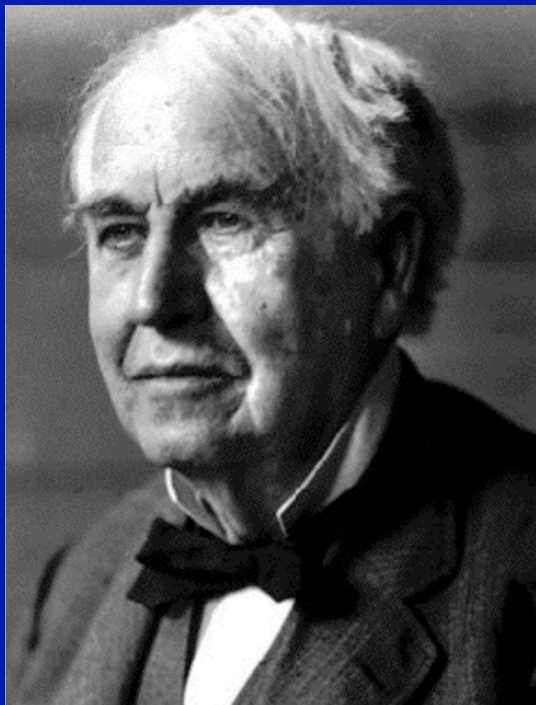
A first principle

“The supply of any business resource will gravitate toward its most economically efficient model”

General purpose technologies

- Used by all companies to do all sorts of things
- Potential for vast economies of scale if supply can be consolidated
 - Steam power: must be supplied locally
 - Electricity and IT: can be centralized
- Consolidation requires new technologies and fresh business models

A brief history of U.S. electricity supply

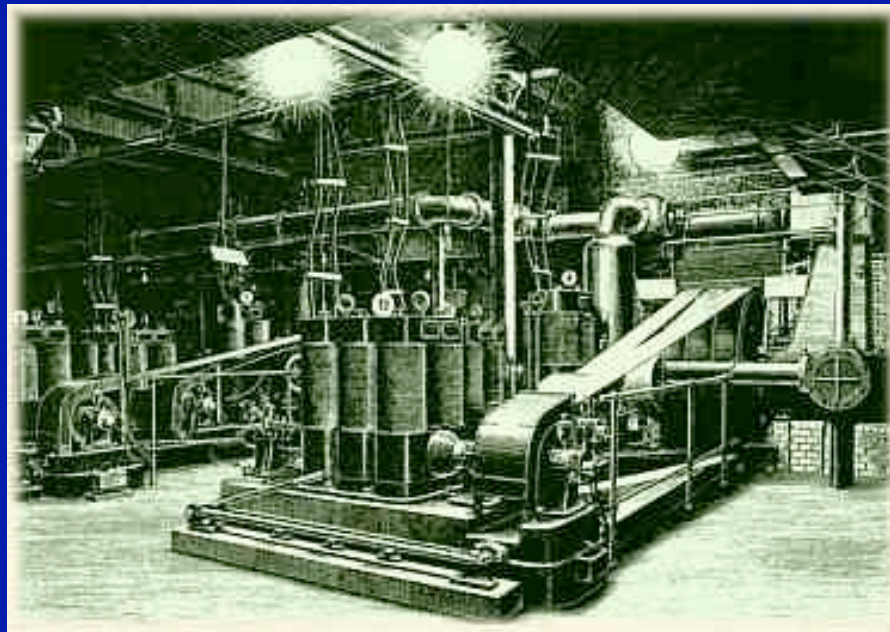


Technology



Business

In early 1900s, most factories
had private generators



First utilities were too small and unreliable to
supply power to manufacturers

Technological advances make central supply possible

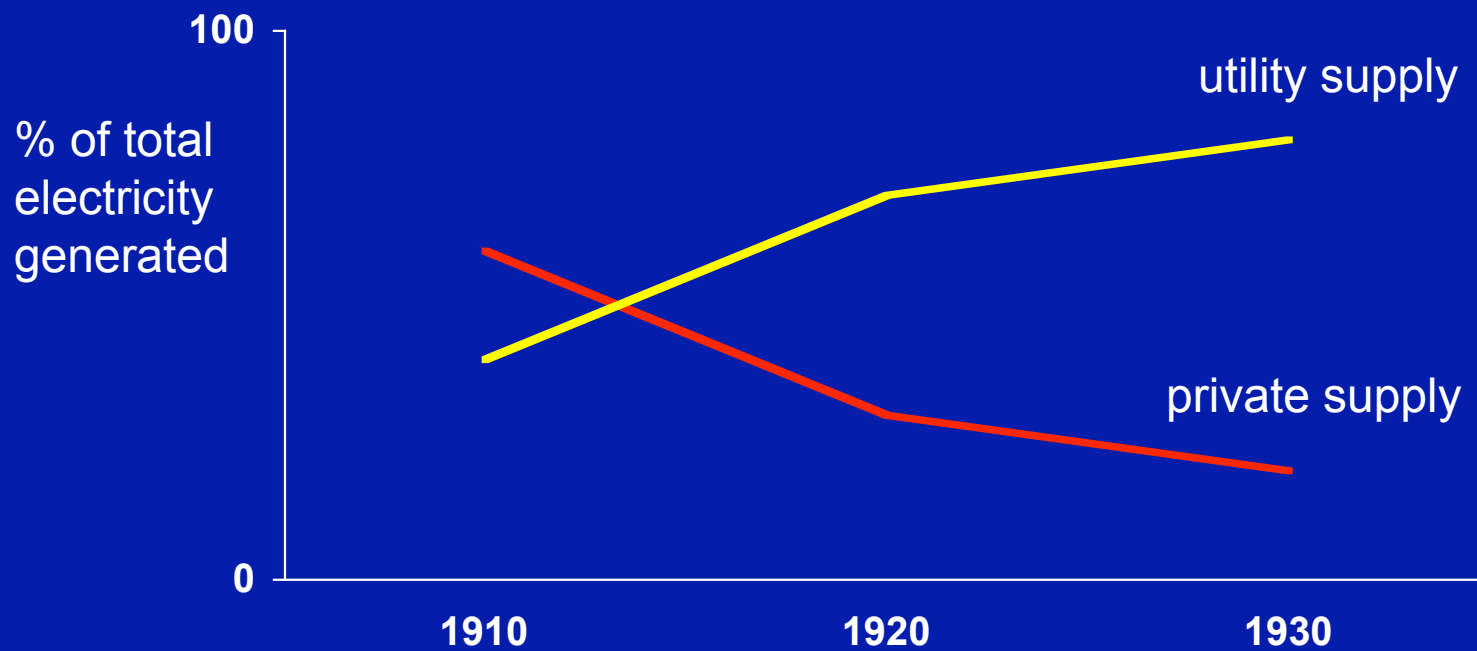
- Massive thermal turbines
- Alternating current (AC) network
- Higher capacity transmission lines
- Current converters
- AC electric motors
- Standardization of network and gear

Insull invents modern utility



- Installs large-scale dynamos
- Consolidates generating capacity
- Pioneers metering and variable pricing
- Markets to business owners
- Turns power supply from fixed asset to variable cost

Companies abandon their private generators



IT's next

Redundant “IT plants” bring overspending & inefficiency...

Hardware component

Capacity utilization

Servers

10 - 35%

PCs

5%

Storage

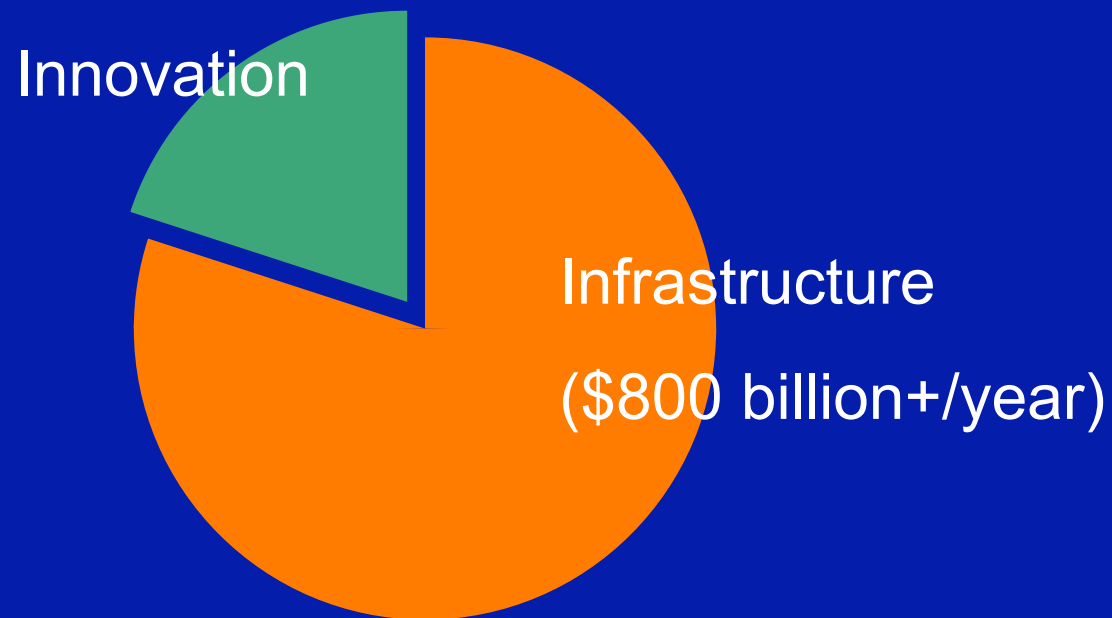
25 - 50%

erode availability & reliability...

And create diseconomies in software and labor

- Failure to capitalize on software's economies of scale
- Duplicate fees and maintenance costs
- Vendor lock-in; inflexibility
- Redundant staff: 60% of IT labor is routine support and maintenance
- Big drain on management time

The CIO squeeze



In nearly every company, 70% to 90% of IT takes the form of basic, undifferentiated infrastructure

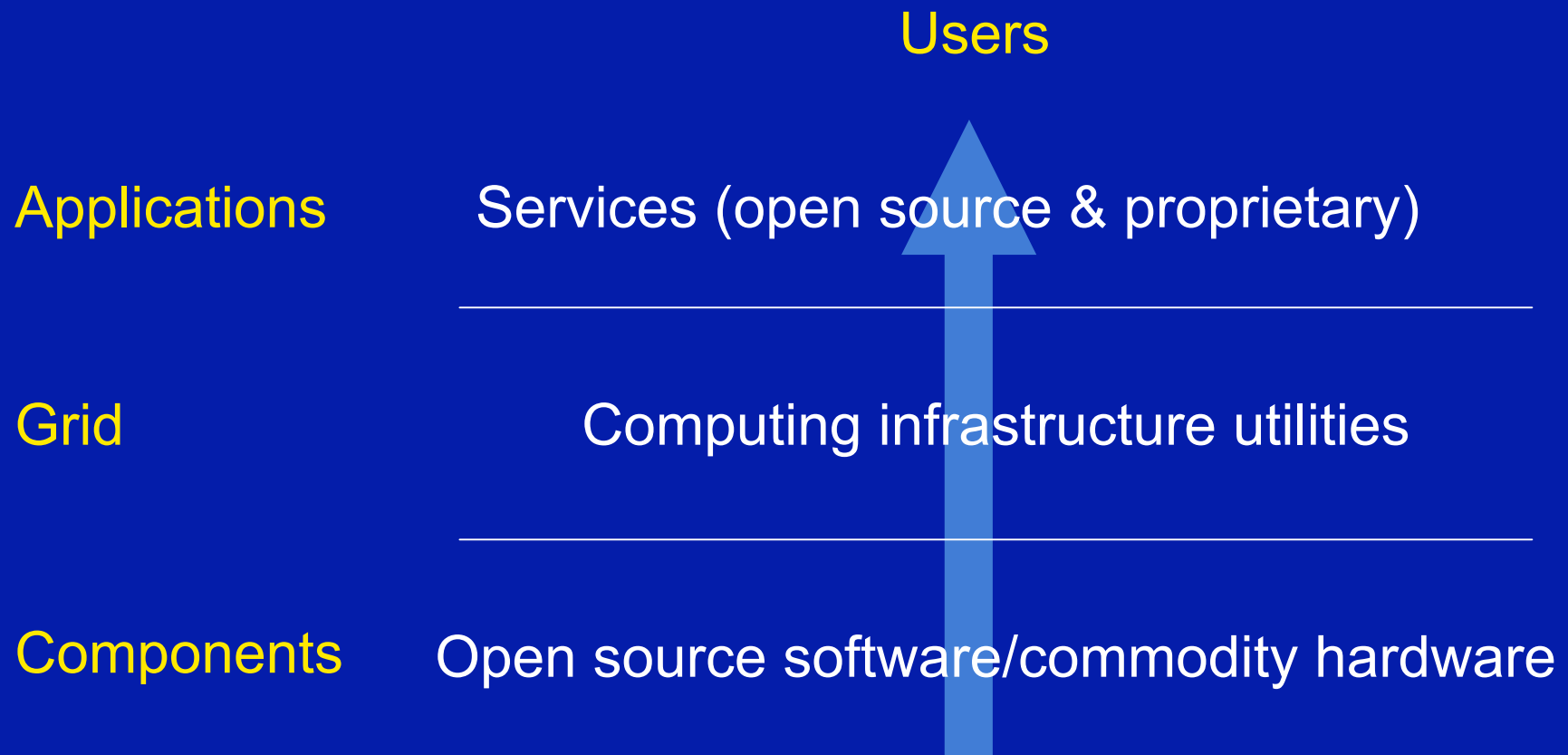
Technologies for utility supply are advancing . . .

- Open source software
 - Economies of scale in production
 - Flexibility in use
- Data-processing dynamos
- Fiber-optic data network
- New “current converters”
 - Virtualization
 - Grid computing
 - Web services
- IT automation

Wanted: the new “Insull”

- Pioneer large-scale utility model
- Move from piecemeal to integrated utility services
- Introduce metering and pricing innovations
- Overcome companies’ assumption that they should own IT assets

A model for IT's future



The role of open source

- Dominant role at “component” level:
 - Low cost
 - Flexible
 - Attractive to experts (who run central grids)
 - Brands/marketing don’t matter much
- Uncertain role at “application” level
 - User interfaces critical
 - Idiot-proof
 - Invisible code
 - Brands/marketing do matter

Are you socket-ready?



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