

Project Management and Economic Growth: A 21st Century Competitive Strategy for Technology-Based Industries

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Revised Draft

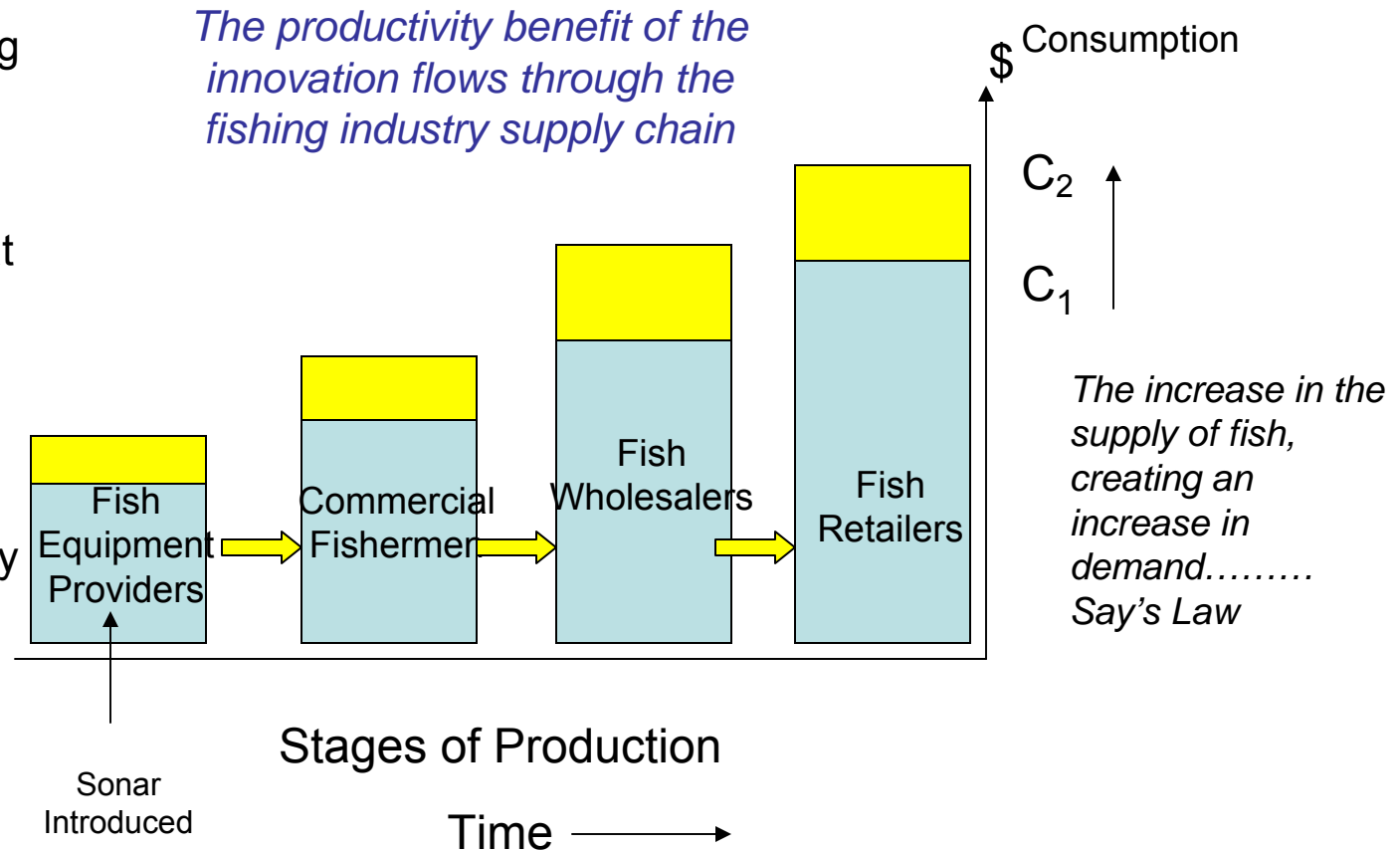
**It is Widely Understood That The Adoption of Innovation
by Consumers Has Been Key to the U.S. Economy**

**Yet Consumer Innovations are Driven By The Execution
of Projects Downstream in Industry Supply Chains**

For Example.....

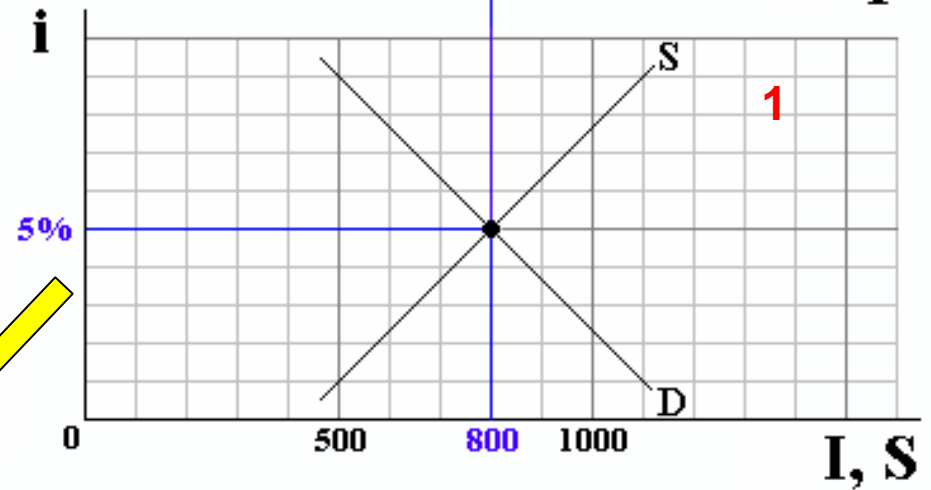
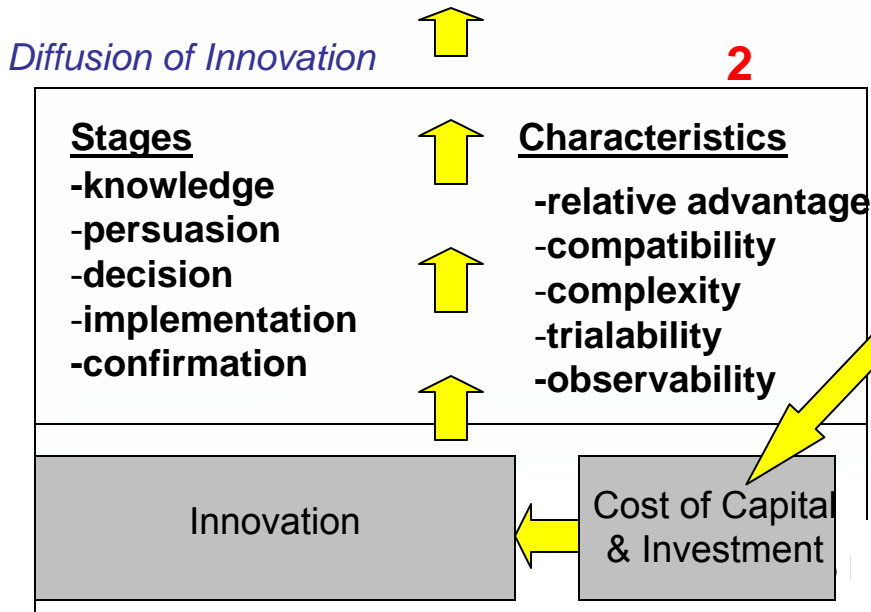
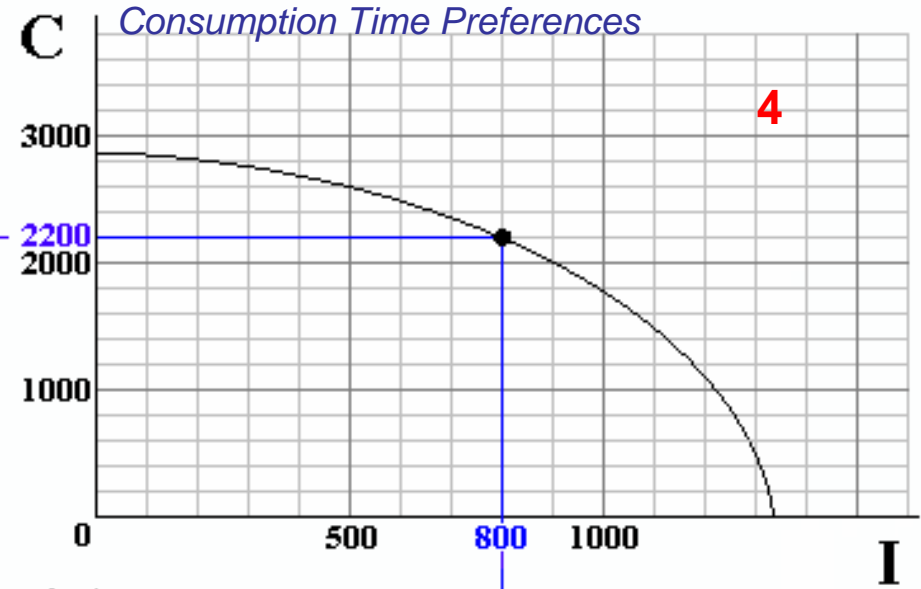
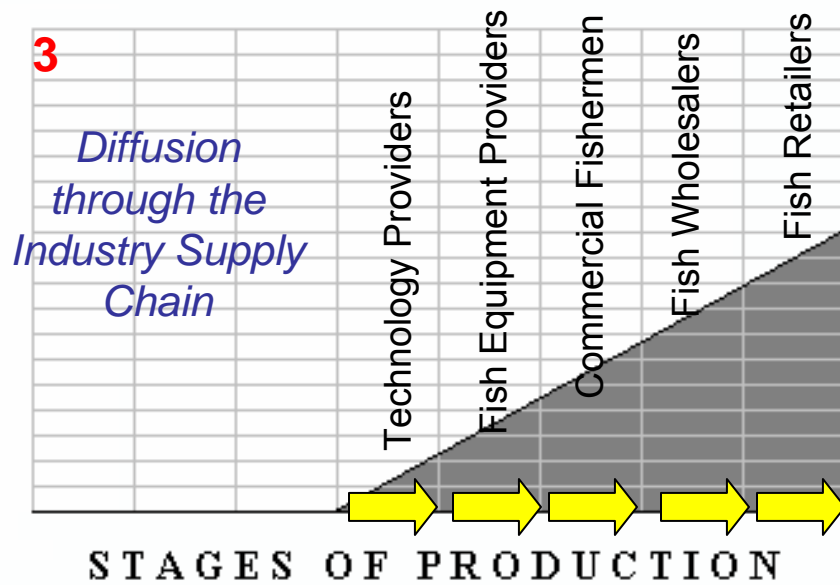
Consider the Impact of a Project Which Brings a New Technology into The Fishing Industry—e.g. Sonar

As fishermen adopt the new technology (switching from fishing nets only to fishing nets plus sonar), the innovation brings greater productivity in that more fish are caught per unit of time. Following Say's Law, Consumption increases which triggers economic expansion as more fish are produced by the given workforce of fishermen/fisherwomen. All participants in the supply chain command greater revenues/wages due to productivity increase.



Building on the Hayek/Garrison Macroeconomic Framework

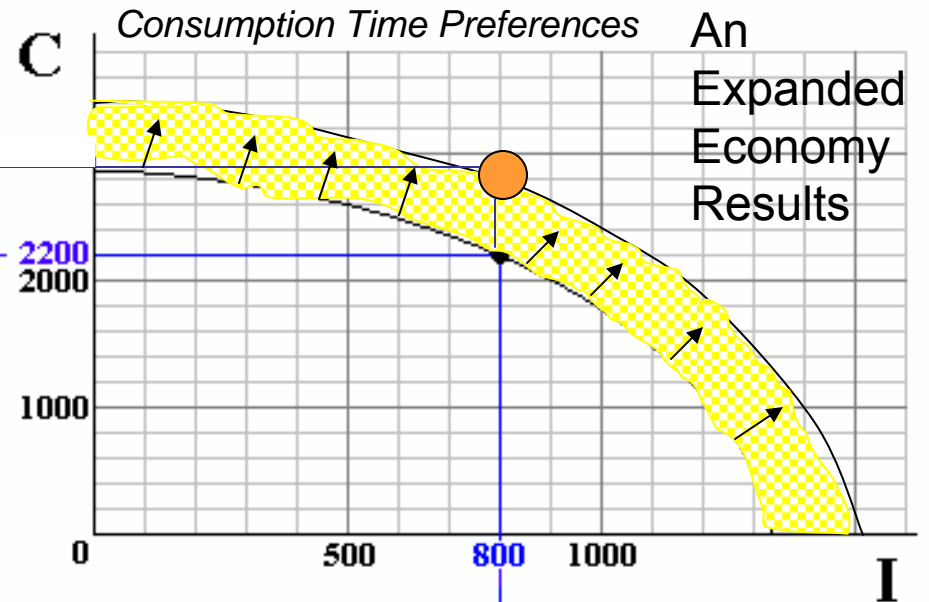
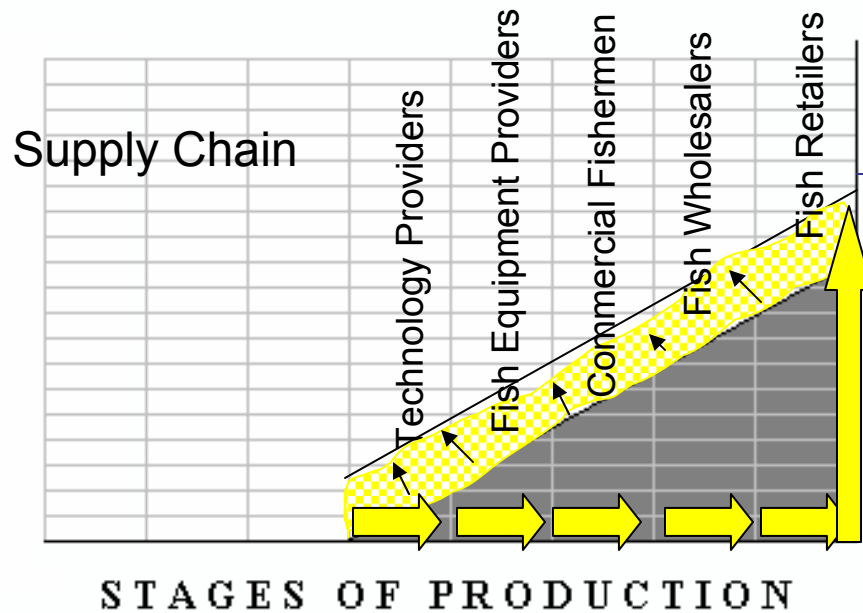
Let's View the Mechanics of Innovation in the Fishing Industry



Capital Market

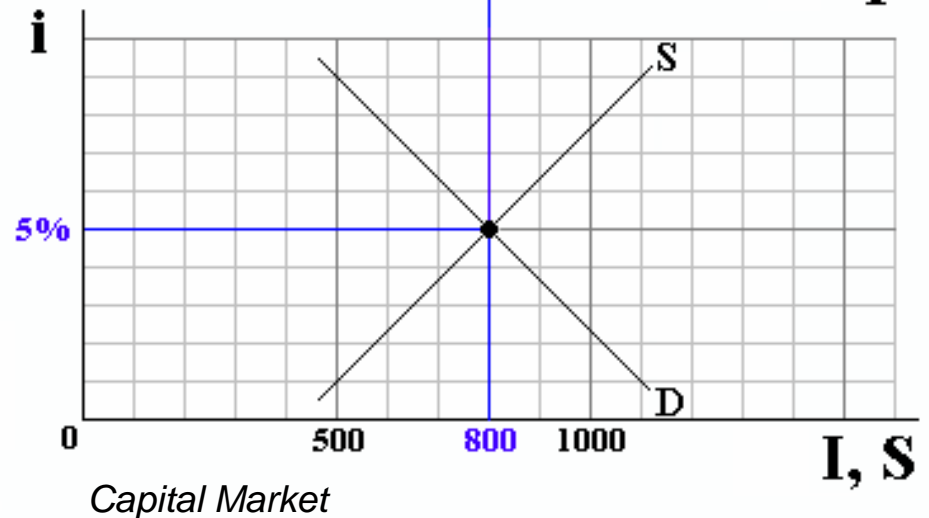
Note: charts on quadrants 1,3, and 4 are copyright Roger Garrison-Auburn University

Now Watch the Economy Grow From the Productivity Improvement in Fish Catching



Diffusion of Innovation

Stages	Characteristics
-knowledge -persuasion -decision -implementation -confirmation	-relative advantage -compatibility -complexity -trialability -observability
Innovation	Cost of Capital & Investment



Note: charts on quadrants 1,3, and 4 are copyright Roger Garrison-Auburn University

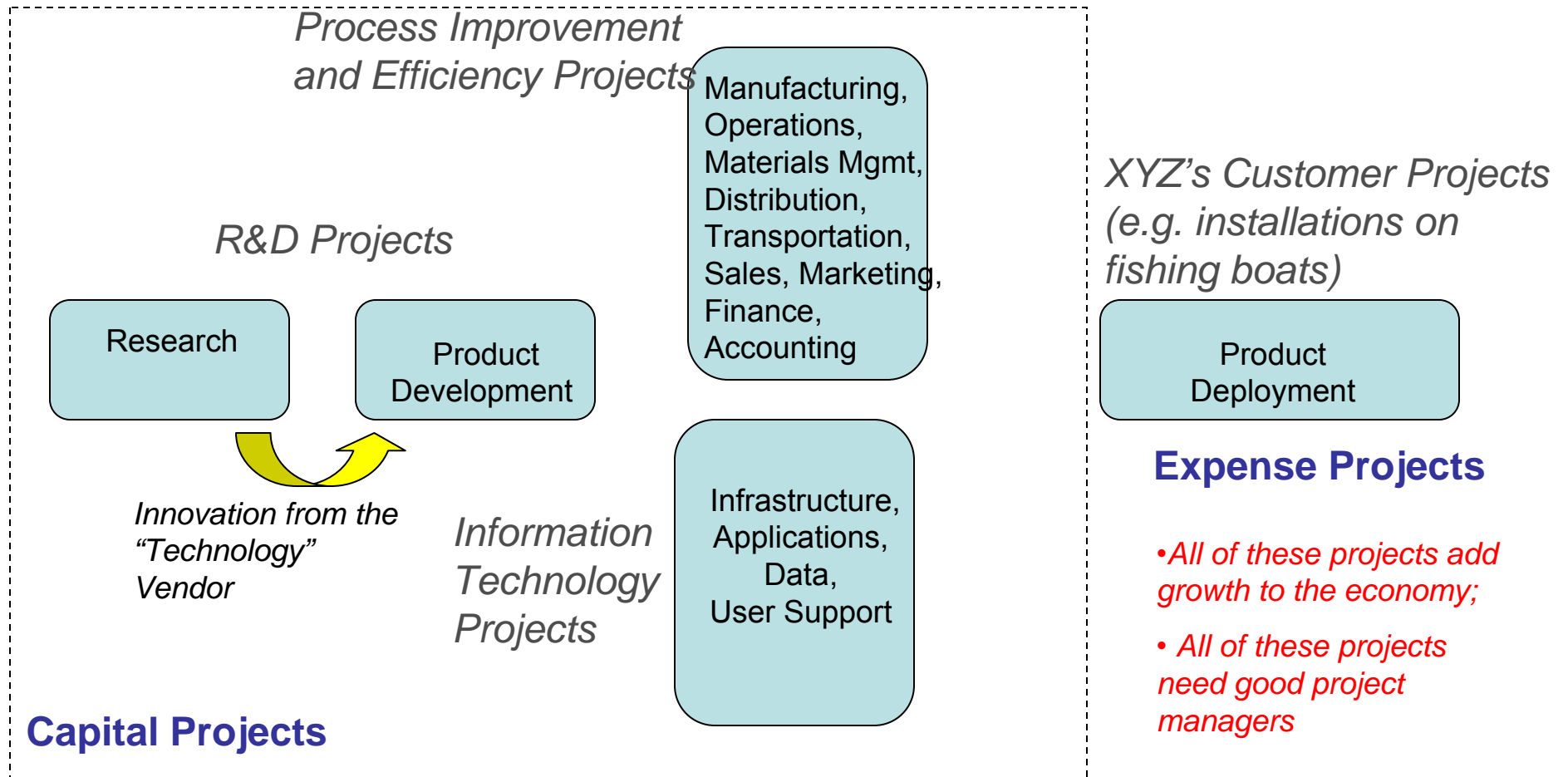
The U.S economy grows through the myriad capital projects being executed within the various supply chains of different industries. We have used the fishing industry as a small case in point. In reality, this same phenomenon occurs every day across every industry.

Project management is the skill/occupation that delivers these capital investments with less risk.

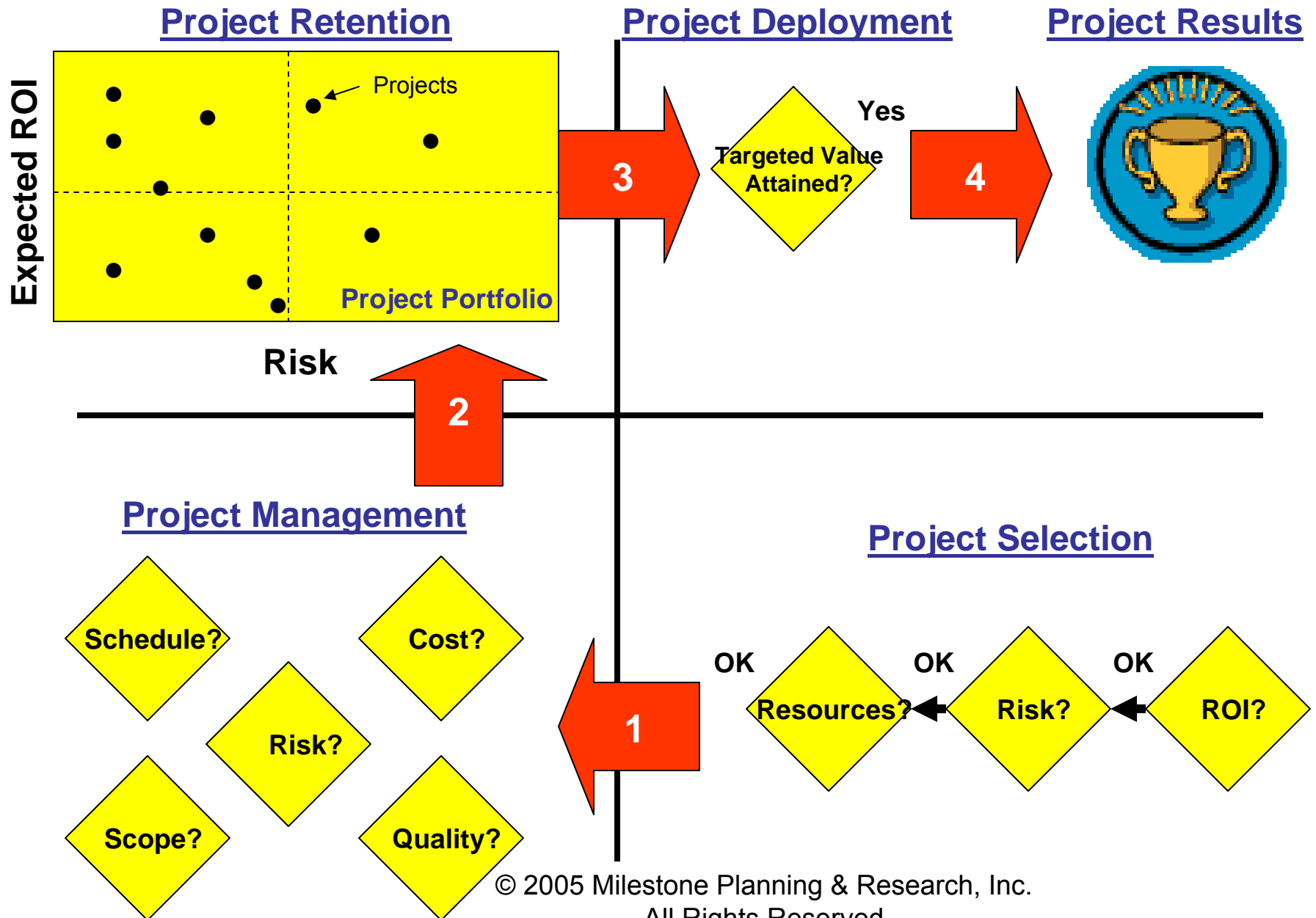
Now let's take a micro look at the kind of capital projects that might exist within our sample fishing equipment supplier company.....

A Micro Look at the Kinds of Projects Within Our Fishing Equipment Provider's Organization

XYZ Company –Fishing Equipment Provider



Our Fishing Equipment Provider Needs Employees to Manage All of Its Projects



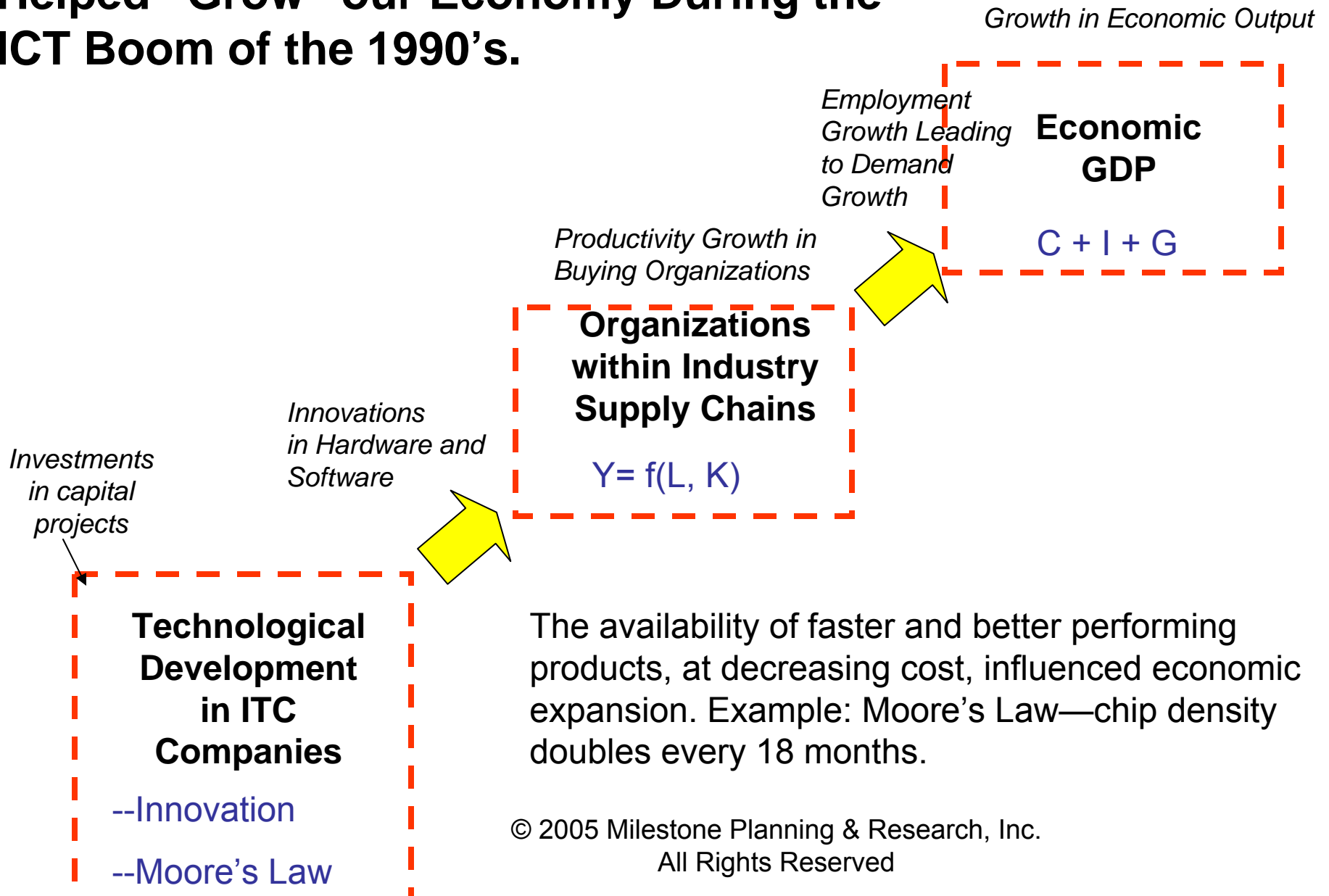
What Have We Learned So Far?

What we have shown is typical of what goes on within most medium-large sized organizations today.

Let's go further.....

Case study illustrating this principle....Information and
Communications Technology (ICT) during the 90's...a
Macro Analysis

Case in Point: How Technology Projects Helped “Grow” our Economy During the ICT Boom of the 1990’s.



The ICT Boom Followed Say's Law

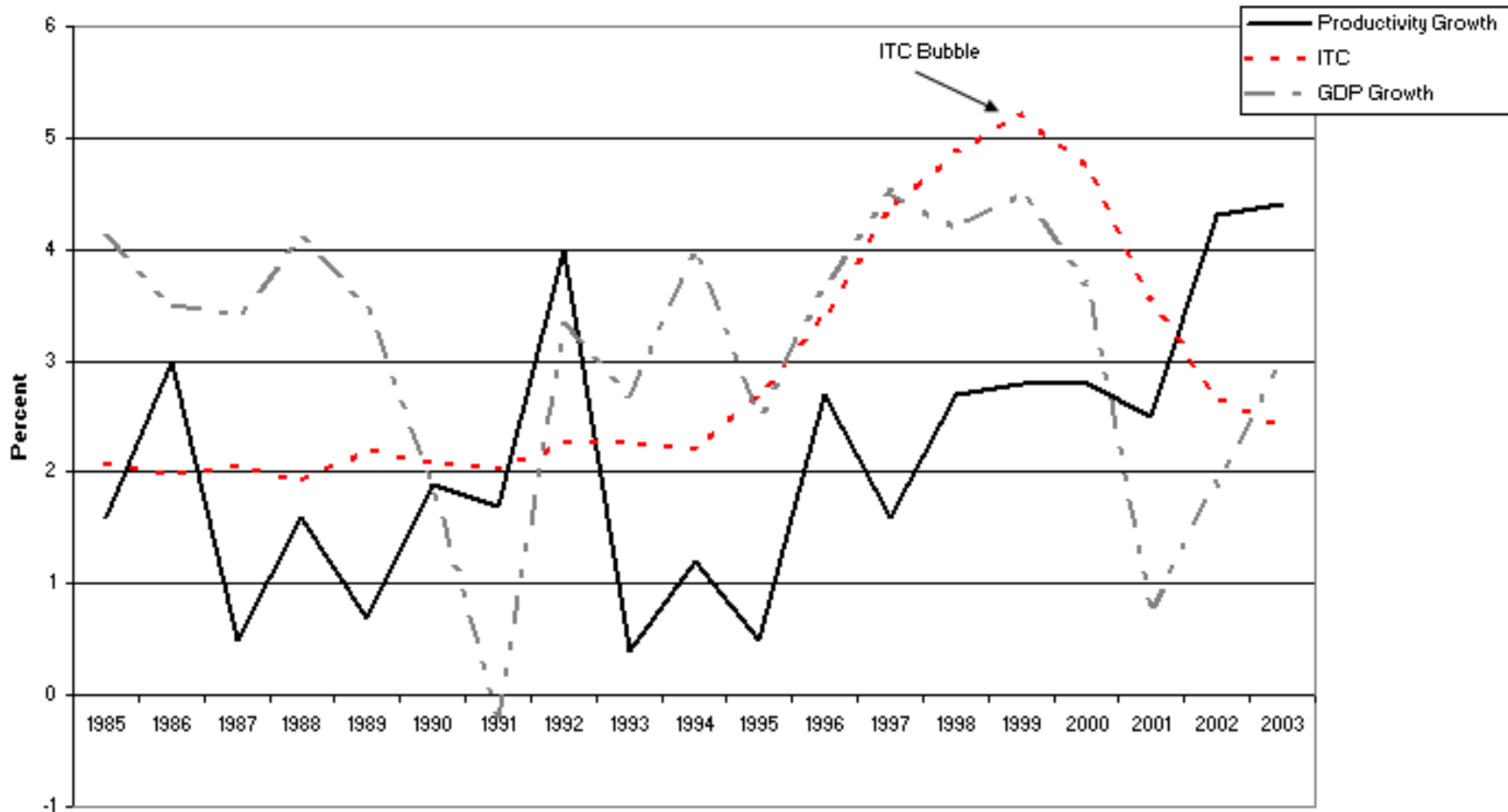
“Supply Creates Demand”

Many people believe that the basic problem of economics is "how to achieve sufficient demand to absorb available production". In fact, many public policies including protective tariffs and large-scale “spending programs” are based upon this principle. These kinds of ideas in the post-World War II world are usually identified with John Maynard Keynes. Keynes's "aim was simply to ensure a level of aggregate demand sufficient to enable market-clearing real wages to be established without price inflation". But Keynes had it backwards. It is the process of supplying the market that enables the creation of sufficient demand for a sustainable period.

As an example let's look at the economic growth effect caused by innovations in information and communications technology (ICT) which were driven by developments in computing hardware and software. The development of these innovations attained realization through the execution of “projects” that enabled the implementation of innovations which triggered demand growth.

U.S. Economic Indicators 1985-2003

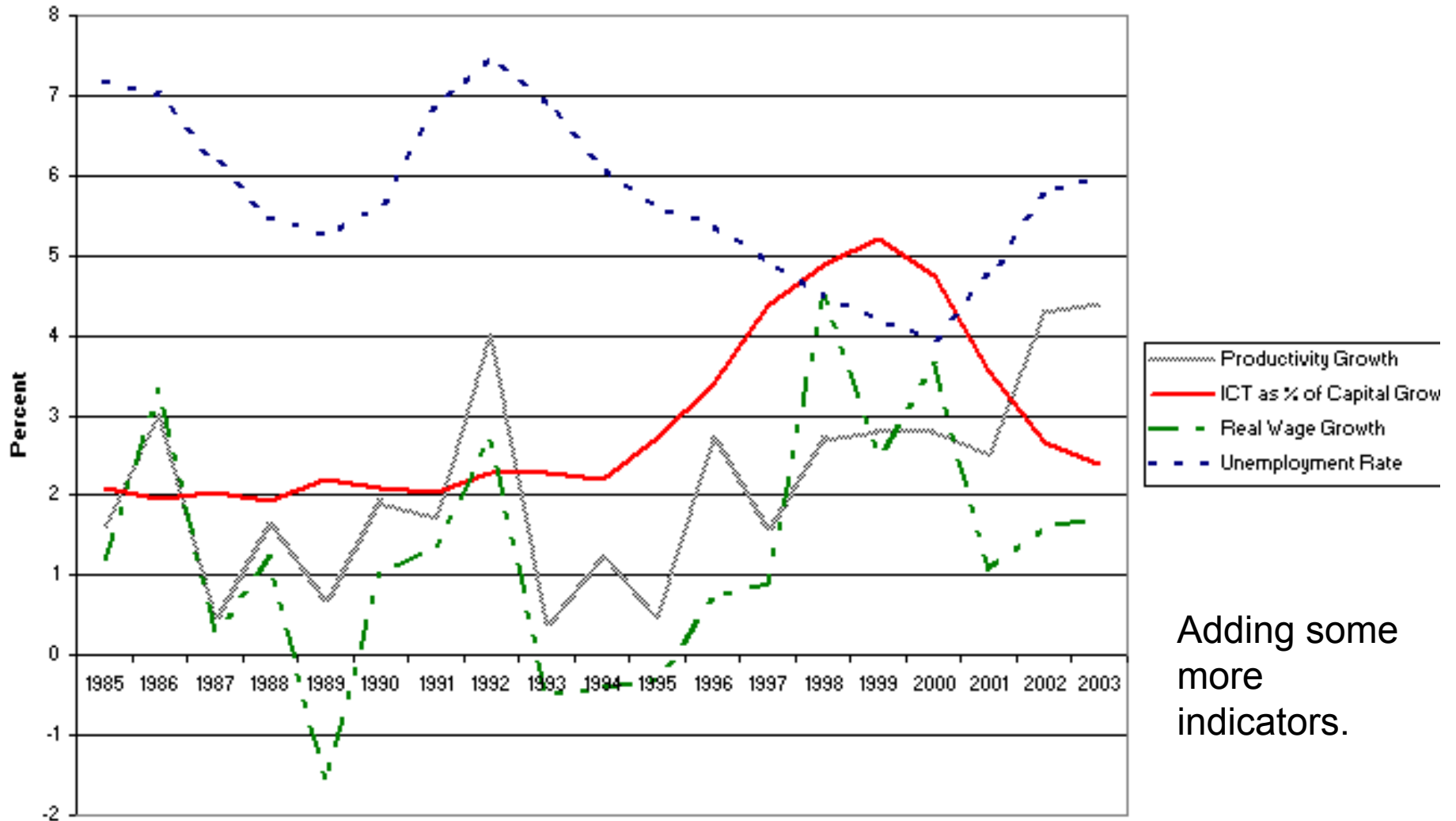
Productivity Growth, ITC Spending as a Percent of Capital Growth & Gross Domestic Product



Sources: OECD, BEA
and BLS

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Relevant Economic Performance Indicators 1985-2003 Highlighting ICT Boom Period



Adding some
more
indicators.

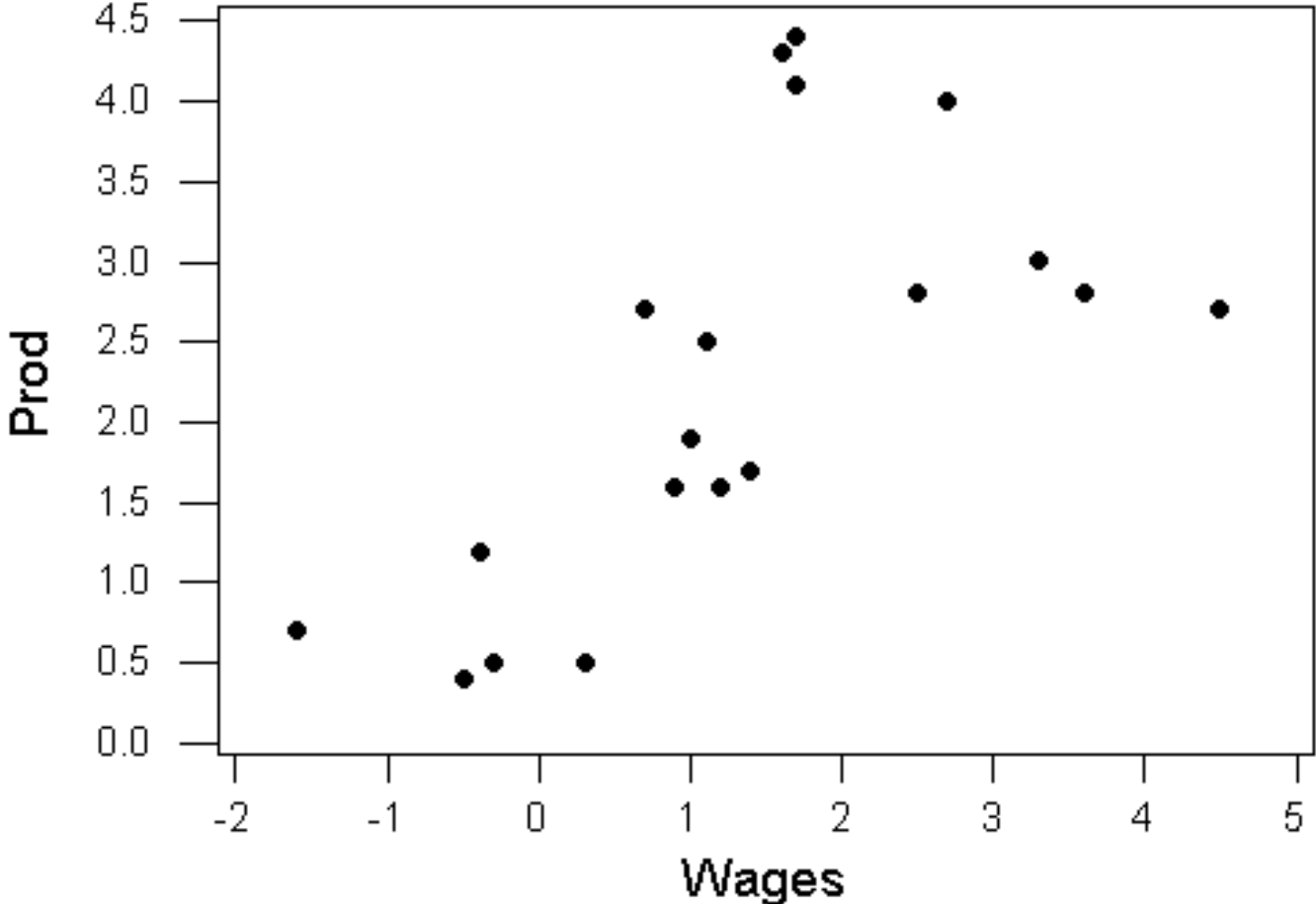
Sources: OECD, BEA
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Correlation Between Productivity and Wages-1985-2003

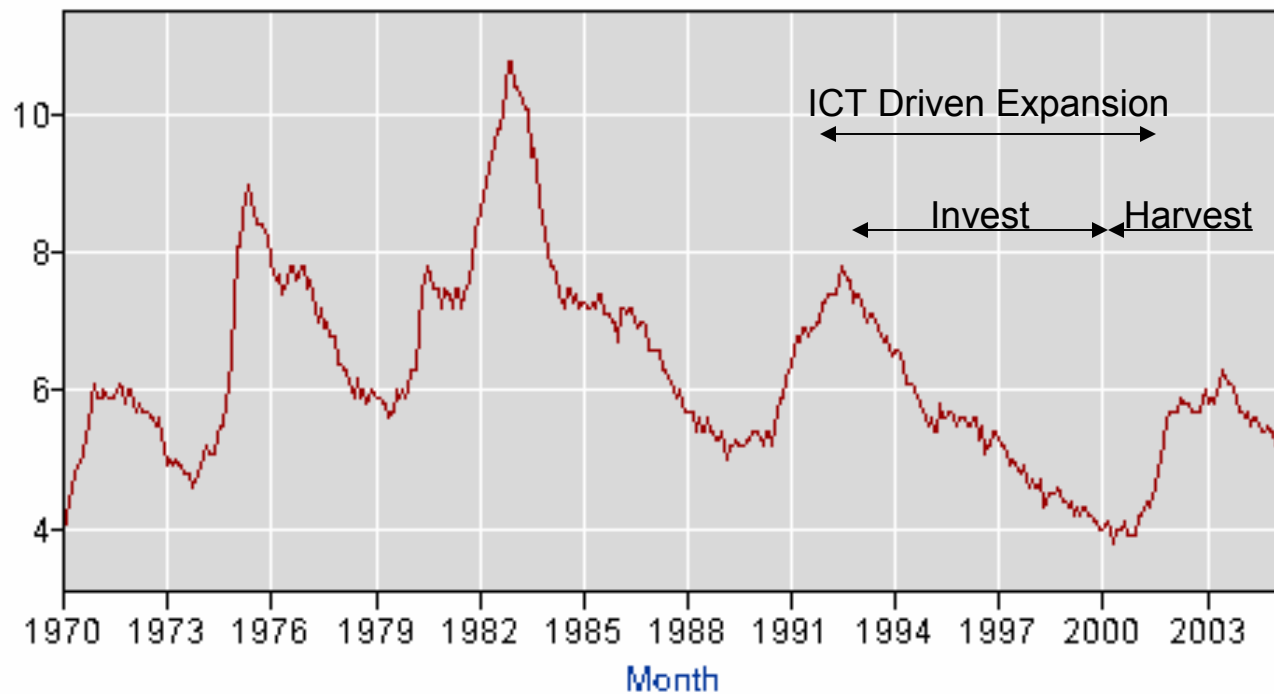
$r=0.62$

$p<.002$



Impact of ICT Driven Expansion on Unemployment Rate

Series Id: LNS14000000
Seasonal Adjusted
Series title: (Seas) Unemployment Rate
Labor force status: Unemployment rate
Type of data: Percent
Age: 16 years and over

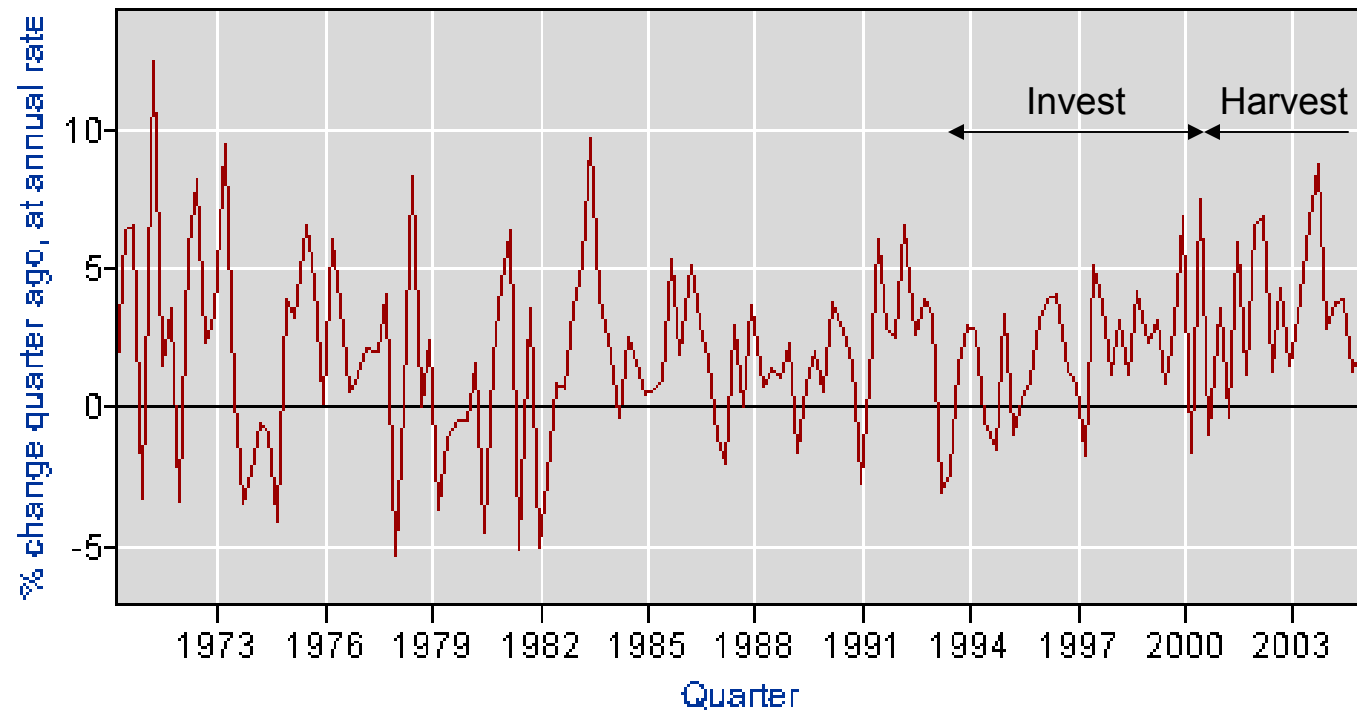


Source BLS

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Impact of ICT Driven Expansion on Productivity Growth

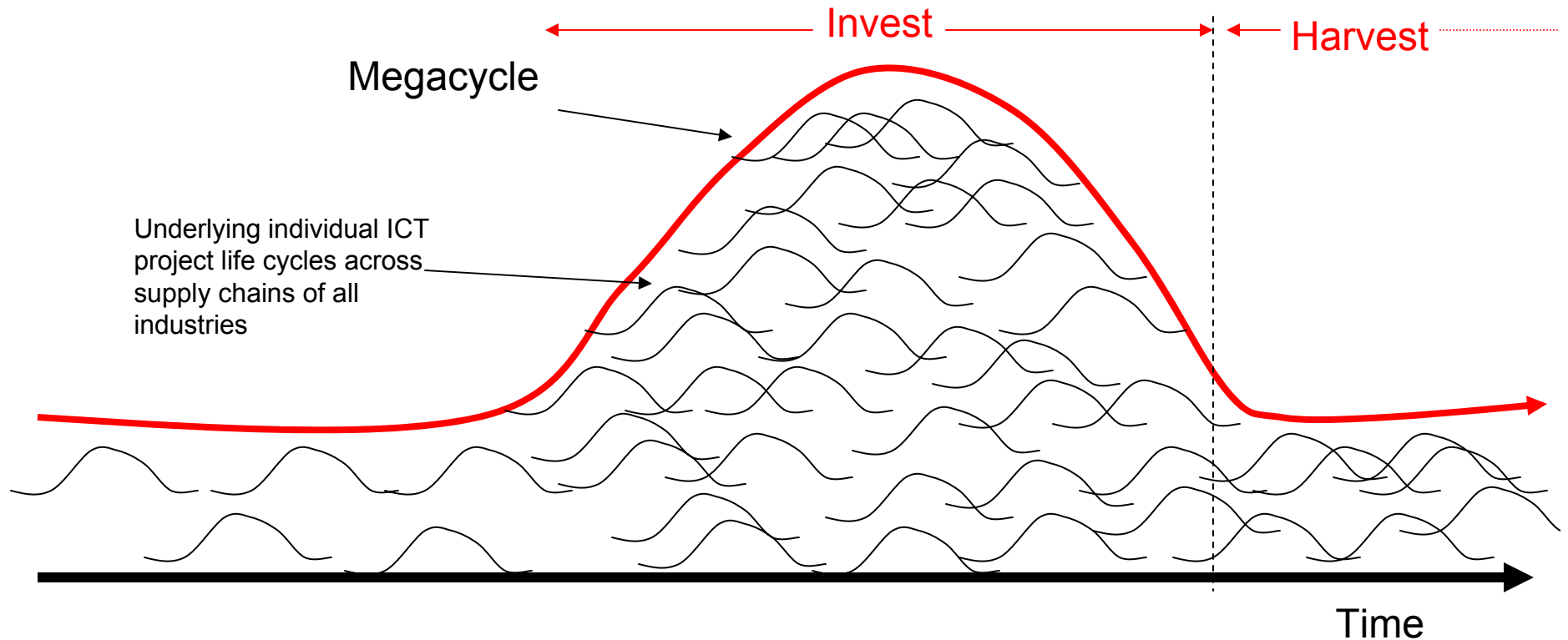
Series Id: PR885006092
Duration: % change quarter ago, at annual rate
Measure: Output Per Hour
Sector: Nonfarm Business



Source: BLS

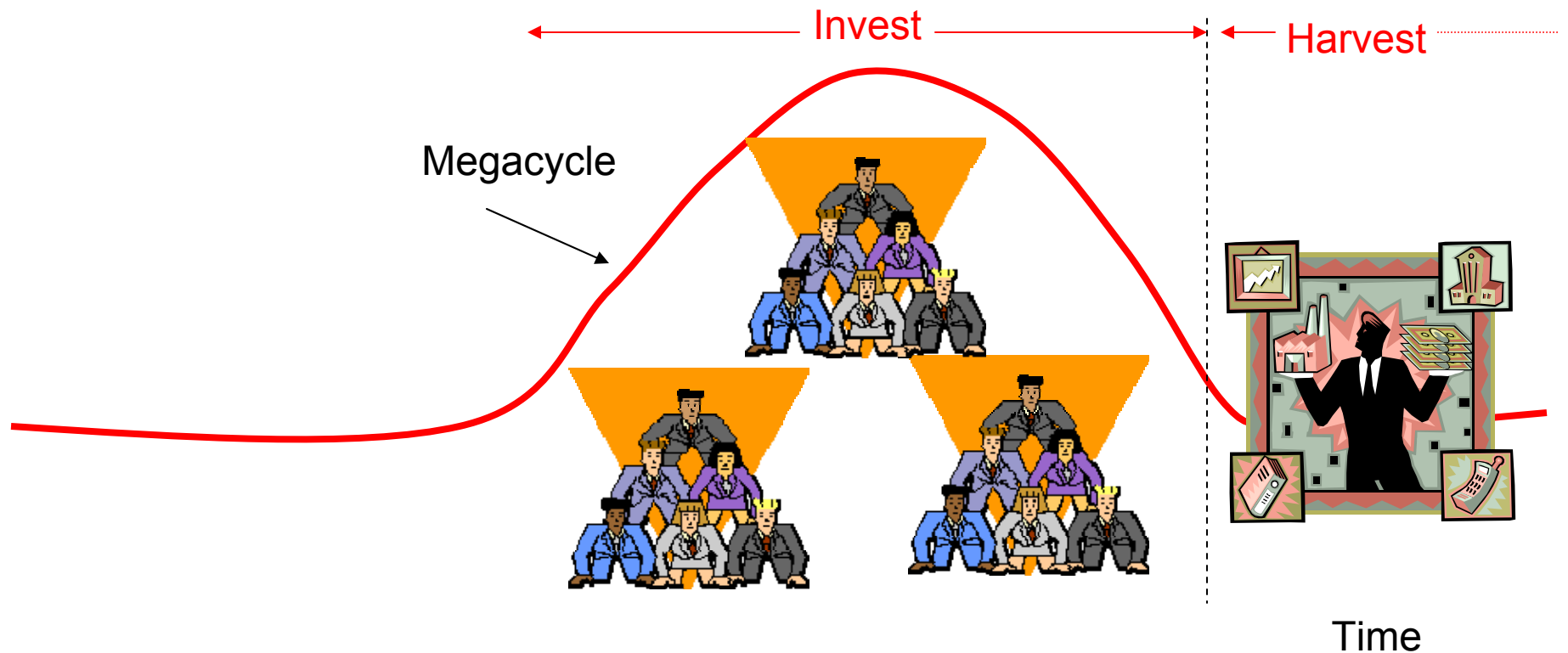
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What Can We Learn Regarding Project Management From the ICT Boom of the 90's?



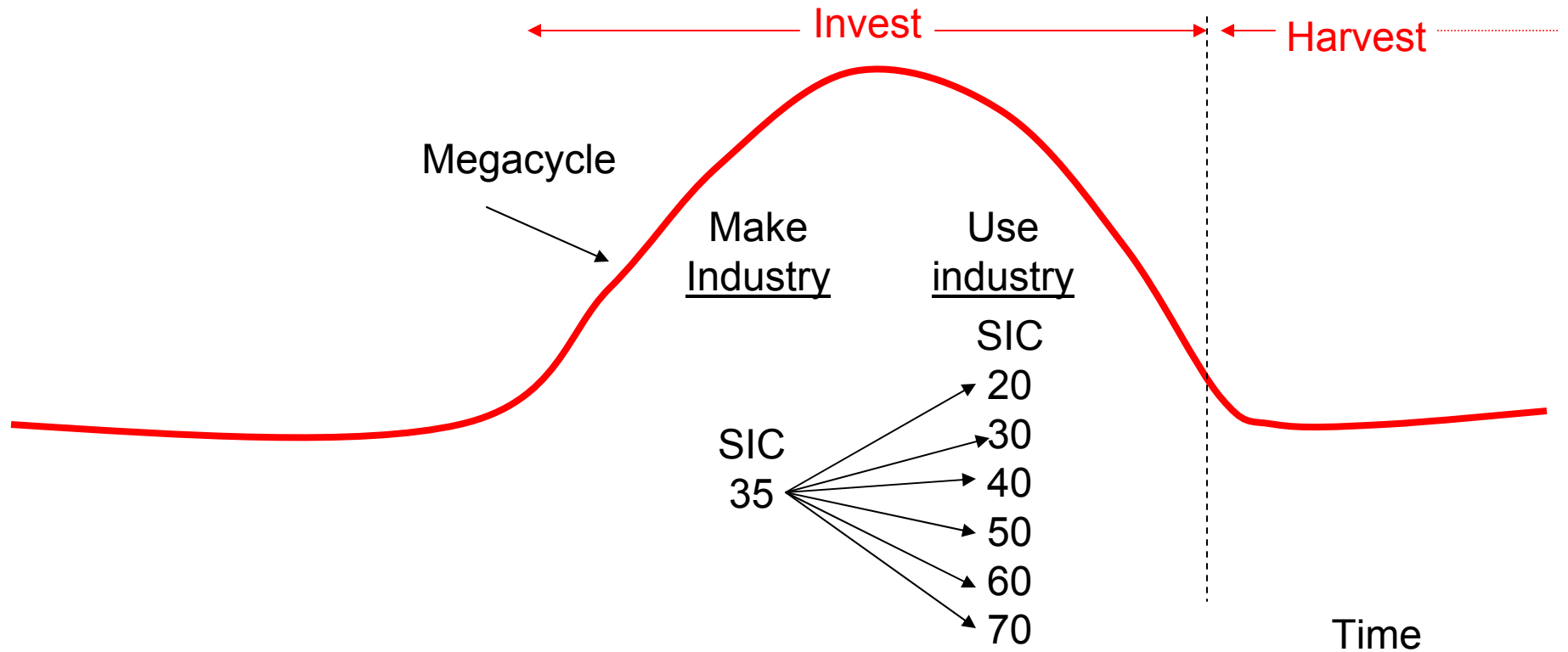
Point #1---The Boom was a megacycle consisting of the summation of a myriad of ICT projects throughout various industry supply chains along with consumer expenditures. The scale of the megacycle enables us to visualize and understand the important role that capital projects play in our economy. Projects like these go on every day with little fanfare but great importance. Their success depends upon good project management.

What Can We Learn Regarding Project Management From the ICT Boom of the 90's?



Point #2---During the Investment periods projects create demand for functional workers at high wages. After the investment periods, organizations tend to downsize and outsource. While less of a need exists for all roles during down periods, a demand remains for project managers to run “harvesting” projects.

What Can We Learn Regarding Project Management From the ICT Boom of the 90's?



Point #3---The ICT case study has demonstrated that the diffusion of technology-based innovations and projects goes across industries making project management a universal need.

Some Observations:

- The economy's growth is dependent upon the thousands of these kinds of projects and cycles that go on everyday with little fanfare.
- Given the global economy our future depends upon the speed and efficiency of execution of innovation and capital projects.
- Project management is not a panacea, but project management skills are critical to the success of these endeavors and these jobs are not easily outsourced.
- The U.S. can use project management as a source of competitive advantage.

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Demand for contract IT project managers increases

April 18, 2005

April 18,	Top IT Searches	#
Rank		
1	Project Management	38,961
2	Web Development	32,631
3	ERP and Packages	26,503
4	Analysis and Design	24,622
5	Networking	23,684
6	IT Management	18,758
7	System Admin	17,268

Why Has Project Management Remained More Resilient to Outsourcing During the Recent Bust Period?

Figure 2
Attributes of Jobs Outsourced

- No Face-to-Face Customer Servicing Requirement
- High Information Content
- Work Process is Telecommutable and Internet Enabled
- High Wage Differential with Similar Occupation in Destination Country
- Low Setup Barriers
- Low Social Networking Requirement

Table 2
Average Salaries of Programmers

Country	Salary Range
Poland and Hungary	\$4,800 to \$8,000
India	\$5,880 to \$11,000
Philippines	\$6,564
Malaysia	\$7,200
Russian Federation	\$5,000 to \$7,500
China	\$8,952
Canada	\$28,174
Ireland	\$23,000 to \$34,000
Israel	\$15,000 to \$38,000
USA	\$60,000 to \$80,000

Source: *CIO* magazine, November 2002, Smart Access Survey, Merrill Lynch.

Despite the high wage differential, the project management role is not well suited to Business Process Outsourcing (BPO). Project Management does not lend itself to commoditization. Project managers are those who manage the outsourcing vendors as well as internal staff.

Source: 2003 Institute of Business and Economic Research
Fisher Center for Real Estate & Urban Economics
(University of California, Berkeley)

Project Management Training

There is a strong need for a better mousetrap

There is a need for better methods of project manager skill development.

- Currently only about 100,000 workers are certified in project management (PMI); the need is probably 10X that amount. (John Aaron observation)
- Current Certifications are not competency based
- The OJEI method of project manager development works, and is getting traction in the market.