Outsourcing & Offshoring of Services

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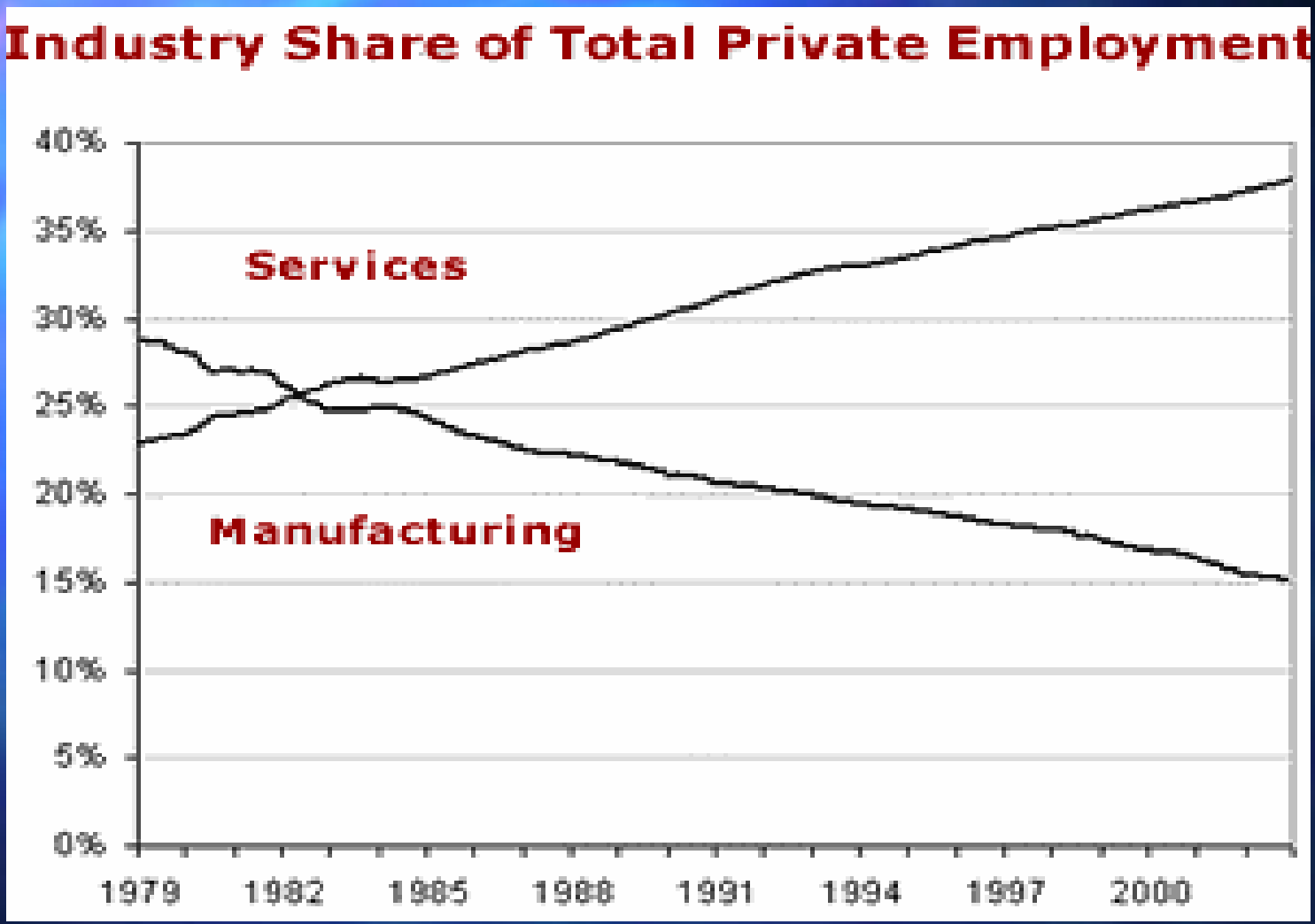
It is not just about call centers or software or R&D or x-ray analysis or medical transcription

It will affect the employment patterns in every industry studied by the centers and in multiple ways

Industry Share of Total Private Employment



Source: http://www.uaw.org/publications/jobs_pay/03/no1/jpe05.html

Employment in Some At-Risk Occupations, 2002

Total Employment in all Occupations	**127,523,760**
■ Bill and Account Collectors	407,280
■ Billing and Posting Clerks and Machine Operators	491,000
■ Bookkeeping, Accounting, and Auditing Clerks	1,728,730
■ Customer Service Representatives	1,854,750
■ Shipping, Receiving, and Traffic Clerks	792,470
■ Office Clerks, General	2,857,300
■ Claims Adjusters, Examiners, and Investigators	211,960
■ Accountants and Auditors	888,690
■ Financial, Budget, Management, and Credit Analysts	677,190
■ Loan Officers	218,470
■ Telemarketers	419,740
■ Drafters	204,940
■ Surveying and Mapping Technicians	55,670
■ Paralegals and Legal Assistants	193,300
■ Computer and Mathematical Science Occupations	2,772,620
TOTAL	13,495,640

Source: BLS

Destination for Relocated Business Services

- India is receiving the most
  - ✓ Ireland -- 10,000 (services for Europe)
  - ✓ Philippines -- 30,000 (December 2003)
  - ✓ China -- ?, relatively small
  - ✓ India -- 250,000 (growing >50%) + 480,000 in software growing at 20% (March 2004) [~65% from U.S.]

The Dialectic Between Technical Enabling Conditions and Business Drivers

Technical Enabling Conditions ⇄ Business Drivers

A learning-by-doing process where there have been failures

The Technical Enabling Conditions

- Separation of information from physical media
  - ✓So they need no longer be done in close proximity to customers
- Global availability of low-cost telecom bandwidth and computing power
- Y2K increased penetration of standardized SW packages, e.g., SAP, Oracle, PeopleSoft available globally [reduce asset specificity]

Business Drivers

- Pressure to bring down costs
- Rivalry -- rivals have done it so must follow
- Evangelists such as Jack Welch, Michael Dell, and Carly Fiorina
- Acceptance of reengineering and outsourcing various services
- Experience w/offshore software production in India

Key Benefits

- Capable labor available in large quantities in a wide number of categories
  - ✓ They are capable of process improvement
- Savings can be great --
  - ✓ Labor costs are approximately 25% of developed country
    - But can be even less for certain skilled activities
  - ✓ On a process 40% saving is possible
  - ✓ With reengineering, saving over two years of up to 80%
- High levels of entrepreneurship

Processes Moved by One Large Firm

Sales Admin

Revenue Accounting

Employee /Travel Reimbursements

Accounts Payable

Rebates

Warranty Accounting

Support Accounting

Accounts Receivable

Support Contracts

Channel Replenishment

Finance Processes

Non-Finance Processes

Vendor data management

Inventory Accounting

Master Data Maintenance

Intracompany Accounting

Treasury Accounting

Customer Response Center

Fixed Assets

Engineering

- Adaptec, AOL, Cisco, Google, Intel, Microsoft, Oracle, Qualcomm, SAP, and Veritas have large and growing engineering centers in India
  - ✓ GM Technical Centre - Bangalore - 260 persons and growing -- part of GM Global Engineering
  - ✓ GE John F. Welch Technology Centre -- 1,600 and growing
- Also outsource work to MNCs operating in developing nations and indigenous firms

A Job at Intel India

- CAD Engineer: Hardware Engineering is all about finding solutions. As a CAD (Computer Aided Design) Engineer with the Intel Hardware Engineering team, you'll work on teams designing, developing and implementing solutions. As part of Hardware Engineering at Intel, you'll have the opportunity to be involved from start to finish on the development of world-class innovations.

Responsibilities

As a CAD Engineer, you will be involved in developing new very large scale integration (VLSI) CAD tools and methodology solutions for design for testability (DFT) and test generation for high volume manufacturing of next generation microprocessor products. You will be responsible for development, deployment and maintenance of in-house fault simulation and test generation tools. This position will be based in Bangalore, India.

Qualifications

You must possess a Ph.D. or Master of Science degree in Electrical Engineering or Computer Engineering with five to ten years of related work experience. Additional qualifications include: Extensive knowledge of Digital Design and Design-for-test principles, digital circuit/fault simulation and automatic test pattern generation.

Good working knowledge in developing CAD tools using C++ in a UNIX*/Linux* environment. Excellent experience in a related people management role would be an added advantage.

http://appzone.intel.com/jobs/uRequisition.asp?Posting=34339 Accessed April 9, 2004

An Opportunity at Cisco India

Title: Software Engineer

Experience: 3-5 years experience with Unix and C.
Experience with Linux definitely a plus.
Experience with creating and running regression tests, writing test scripts, test harnesses with perl and C .
Knowledge of performance measurement techniques and benchmarking
Experience with one or more of the following protocols from a QA/ certification point of view:
NFS, CIFS, SMTP, IMAP, POP, NDMP, LDAP, Radius, Kerberos, DHCP, DNS, FTP.
Experience with certification and qualification of 3rd party applications

Description: Technical, Industry, Business and Cross-Functional Knowledge. Partnership. Solve Problems & Make Decisions. Demonstrate Leadership. Establish Plans. Think Globally. Dedication to Customer Success. Innovation and Learning. Acknowledged technical expert on project.

Education: Typically requires MSEE/CS combined with 5-7 years of related experience, or BSEE/CS combined with 7-10+ yrs related experience.

The Cost and Benefits for the U.S.

- **Benefits**
  - ✓ Lower cost services
  - ✓ Purchases of U.S. products
  - ✓ Greater efficiency
  - ✓ Better quality?
  - ✓ Indian middle class
    - New consumers?
- **Costs**
  - ✓ Job loss?
  - ✓ Downward pressure on wages?
  - ✓ Disrupted career ladders?
  - ✓ Tax losses?
  - ✓ Quality of service?

How Far Will It Go?

Implications

- Will be very rapid
  - ✓ GE expanded from 12,000 to 20,000 (2003-2004)
  - ✓ Dell had no employees about 2 1/2 years ago, now over 3,000 (call center, software coding, back office)
- The number of service activities amenable to offshoring are incalculable and can be expanded
  - ✓ 2nd and 3rd shift radiology at Mass General
  - ✓ Ph.D. statisticians (actuaries) General Electric
  - ✓ Intel design of a next generation Xeon processor

The firms are still learning -- The problems we hear about appear to be glitches rather than fundamental problems

Issues

- Will this be a reprise of manufacturing?
- How fast will it occur?
- In the firm there is a pyramid of talent -- how much of that is not place dependent?
  - ✓ For what is moveable, how much talent is available in lower cost locations?
  - ✓ If the middle of the pyramid relocates to India what happens to career paths in U.S.?
  - ✓ What will be new business model, if the reorganization of the pyramid is profound?>
  - ✓ What might the impact on U.S. educational institutions?

From Another Perspective What Is Not Moveable?

- In-person services (Reich 1990)
- Activities that require face-to-face interaction with customers, suppliers, designers, or production facilities
- Activities where knowledge is derived from intensive, iterative interaction with the market or environment, e.g., clusters
- Activities that geographically bound, e.g., Napa Valley