

OFFSHORING IN ORANGE COUNTY: LEADER, FOLLOWER, OR MIRROR OF NATIONAL TRENDS?

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The U.S. has lost 2.3 million jobs over the last three years. Most of these jobs have been in manufacturing, but a growing proportion are also in services such as product design and development, software development, IT services, R&D, business process outsourcing (BPO) and call centers—activities that we refer to as knowledge work.

Forrester Research has estimated that 3.3 million such knowledge jobs will go offshore by 2015 (Forrester, 2002). We do not know the number of jobs that have gone offshore in OC, but we do know that OC firms are participating in this national trend. In fact, the trend is global as countries in Europe, Latin America and the Far East/Asia are also experiencing offshoring of both production and knowledge work.

Despite the large projections by Forrester and others, the proportion of firms actually doing offshoring is not large. A survey by the Institute for Supply Management conducted for the Department of Commerce found that 35% of companies offshore the production of goods or the performance of services of any kind in 2003 (ISM, 2004). Using this benchmark, OC firms appear to be on target with national trends rather than leaders or followers. For example, 20% of OC firms had offshored some activities by early 2004, and an additional 3% plan to do so by the end of 2004. Thus, nearly one quarter of OC firms will be offshoring by the end of this year. As will be seen, OC reflects national offshoring trends in other regards as well.

What is Offshoring and Who Does It?

There are four ways in which production or knowledge work can be sourced as shown in the figure below. The first is to do the work internally and onshore in the U.S. The second option is to move the activity offshore but keep it in-house by setting up an offshore subsidiary. The third option is to keep the activity onshore but to outsource it. The fourth option is to outsource the activity to a supplier who does the work offshore.

	Onshore	Offshore
Internal	1. Internal onshore	2. Offshore subsidiary
Outsourced	3. Onshore outsourcing	4. Offshore outsourcing

Our analysis focuses on offshoring through an overseas subsidiary or through outsourcing to a supplier who does the work offshore, such as a contract manufacturer or a services outsourcer. The analysis is the first to be conducted at the local level in the United States.

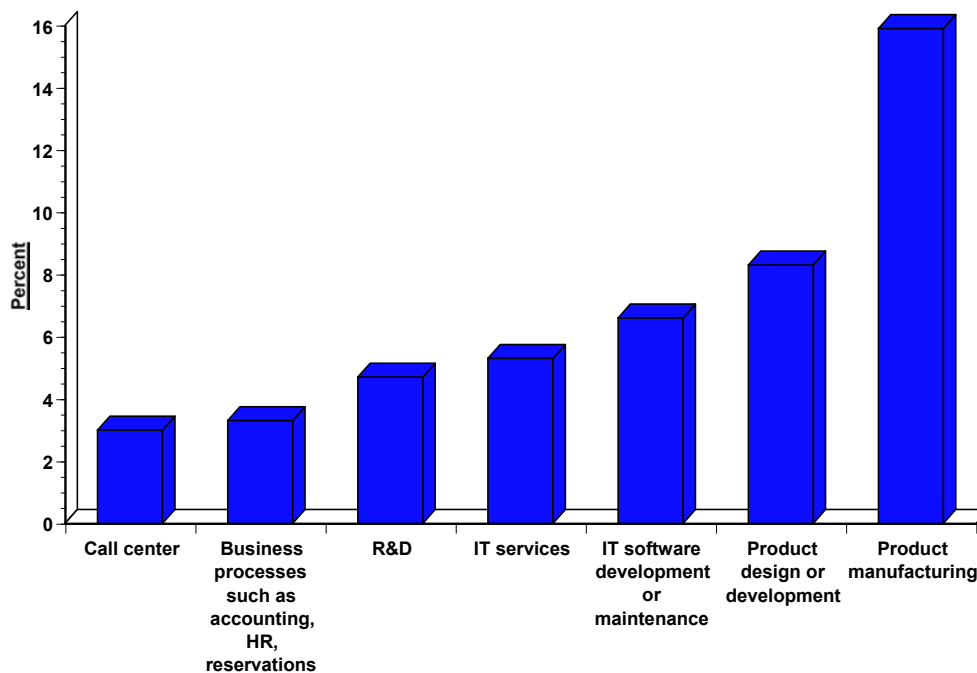
Twenty percent (61) of 301 firms surveyed in Orange County are engaged in some kind of offshore activity. Over one-half (52%) of the firms are in manufacturing, 23% in wholesale or retail trade, 20% in business and professional services and 5% in finance, insurance or real estate sectors. Over one half (54%) are small firms and 46% are large. Most companies (79%) are already international companies in the sense that they have sales, operations or both sales and operations outside the U.S. But 21% have no previous international experience. They are going offshore for the first time, either through establishing their own subsidiary or by outsourcing to another company such as a contract manufacturer or a services outsourcer. In all other regards, the OC firms doing offshoring are similar to the rest of OC firms. That is, their expectations about financial performance, sales, hiring, expansion and OC as a place to do business are the same as the other firms in the survey.

What’s being Offshored?

The activity being offshored by most OC firms is product manufacturing, with 16% of the firms moving this activity. Manufacturing is followed by product design or development at 8%. Whereas production activities have been moving offshore for decades, the movement of service activities offshore is relatively new, starting with the run-up to the year 2000 and the Internet boom, and continuing to grow in the aftermath of the US economic downturn. OC firms are offshoring a variety of service activities including:

- Software development or maintenance (7%)
- IT services (5.5%)
- R&D activities (5%)
- BPO or business process outsourcing (3.5%)
- Call center activities (3%)

PERCENT OF ORANGE COUNTY FIRMS OFFSHORING ACTIVITIES OUTSIDE THE U.S., 2004

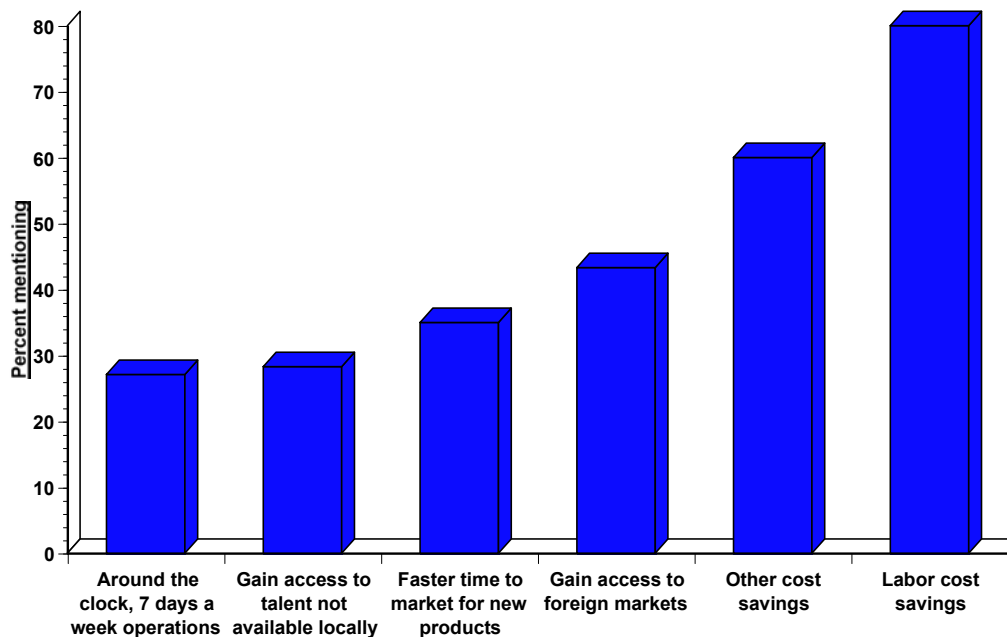


Reasons for offshoring

The primary reason for offshoring is cost, especially labor cost savings which was cited as a primary benefit by 80% of the firms. Other cost savings relating to land, physical facilities, taxes and environmental regulations were cited by 60% of the firms.

Locating activities offshore to gain access to foreign markets such as China was the second key reason--cited by 40% of the firms. Other less significant factors were to: achieve faster time to market for new products by having offshore teams working when their US counterparts go home; gain access to talent not available locally; and support 24x7 (around the clock, 7 days a week) operations such as call centers for customer service and support.

**PRIMARY BENEFITS FOR ORANGE COUNTY
FIRMS OFFSHORING OUTSIDE THE U.S., 2004**

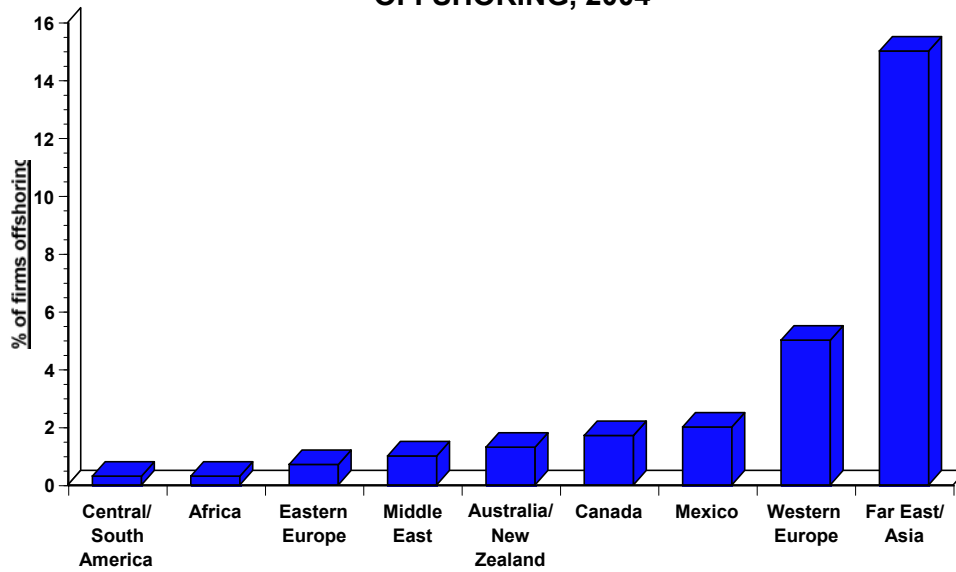


Where firms are offshoring

The primary destination for offshoring activities is the Far East/Asia, with 15% of OC firms indicating this destination. The next most frequent destination is Western Europe at 5%. Less than 1% of the firms are moving activities offshore to Eastern Europe, which suggests that the European activities are more about reaching markets than about moving production of products or services for lower labor costs.

After Western Europe, less than 2% of the firms indicate they are moving activities to Mexico, Canada, Australia/New Zealand, Middle East, Eastern Europe, Africa or Central/South America. It is interesting to note that about 2% of the firms have moved activities to Canada and Mexico, possibly linked to NAFTA—the North American Free Trade Agreement.

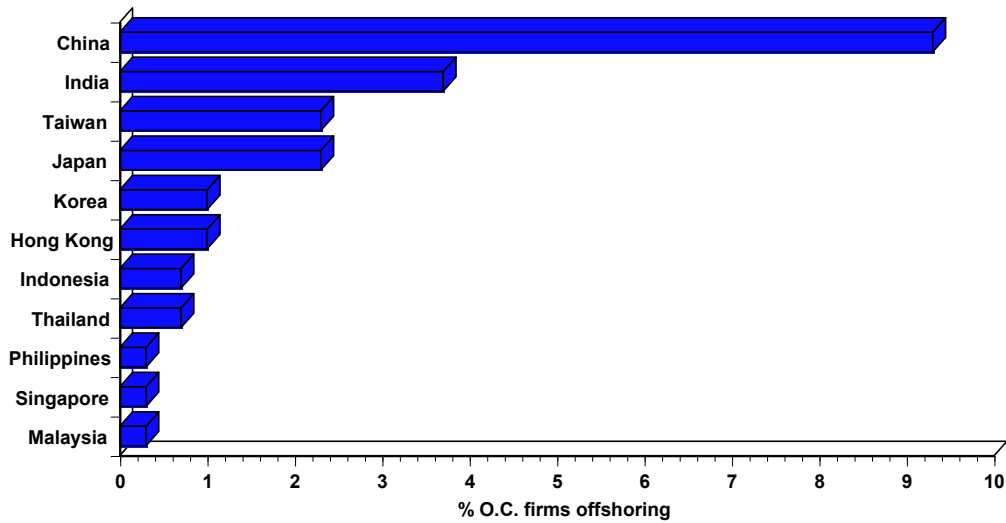
WHERE ORANGE COUNTY FIRMS ARE OFFSHORING, 2004



China vs. India as offshoring location

Within the Far East/Asia, China is by far the leading location for offshoring by OC firms, suggesting that most of the offshoring is for product manufacturing or for design and development activities related to production. Nearly 10% of OC firms indicate they are offshoring to China whereas less than 4% indicate they are offshoring to India.

FAR EAST/ASIA LOCATIONS FOR OFFSHORING BY O.C. FIRMS, 2004



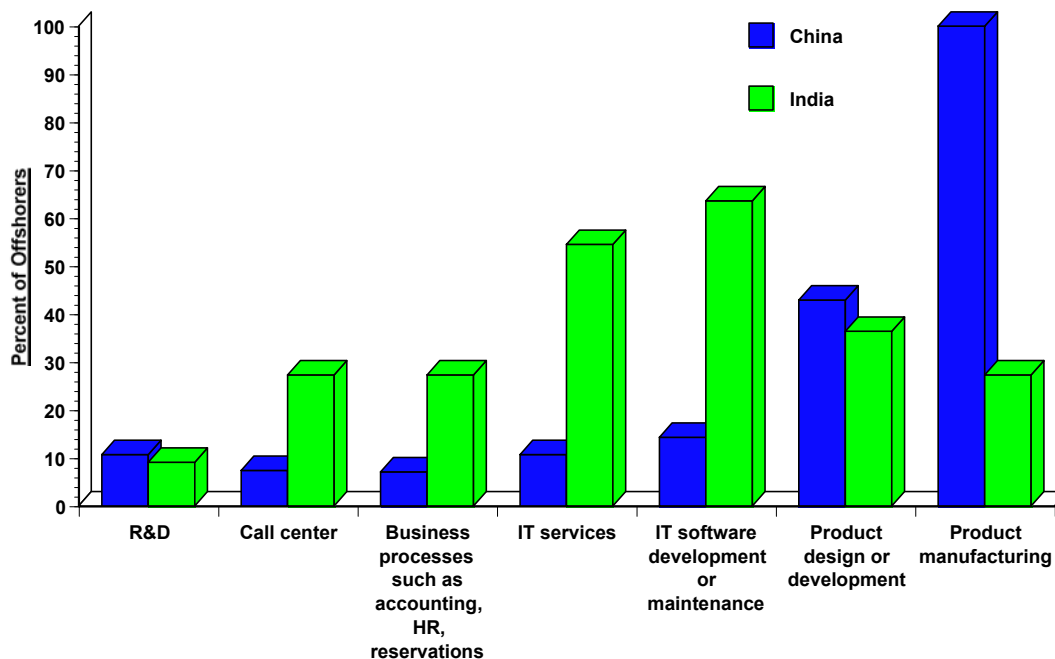
Pattern of Offshoring to China vs. India

What is also clear is that the pattern of offshoring to China and India is dramatically different. As suggested above, offshoring to China is mainly related to product manufacturing whereas offshoring to India is mainly related to provision of services. The figure below indicates that the pattern is strong and dramatic.

Of the firms offshoring to China, 100% are doing so for product manufacturing and 40% are doing so for product design or development. The movement is motivated by market opportunities in China, the opportunity to serve the Asia-Pacific market from China, and low cost production in China.

In contrast, of firms offshoring to India, more than 50% are offshoring IT software development and maintenance, or IT services. Around 40% are offshoring product design or development. Given the dominance of software development and maintenance activity in India, it is likely that product design and development is for software rather than for physical products. The motivation here is primarily low cost production of services, both IT-related and more general business processes such as accounting, human resources and customer support.

PATTERN OF OFFSHORING AMONG THOSE GOING TO CHINA AND INDIA, 2004



Does Moving Production Offshore “Pull” Other Activities too, or are these Shifts Independent?

Although primarily a service activity, product design and development is closely related to manufacturing. Some argue therefore that these activities are being pulled offshore by their link to manufacturing. In industry subsectors such as PC notebook design, for example, this is clearly the case with engineering activities for post-production support, but not yet for other design and development activities. Post-production support for notebook computers is being done at overseas manufacturing sites where the expertise exists. A study by CRITO and the PC Industry Center at UCI clearly indicates that this is the case for IBM, Dell, HP, Gateway and other notebook computer makers (Dedrick and Kraemer, 2004). However, this is not the case for all firms in the computer or electronics industry as illustrated by the example of OC’s Printronix (Kleist, 2004; Schmidt, 2003).

Printronix has outsourced manufacturing to Singapore but keeps most product design and development and post-production support in OC. The reason is that the company is small, the product complex, and support must be provided over 5-10 years (vs. 3-5 years maximum for notebooks). The only way that such expertise can be maintained is to do so centrally at the company’s headquarters where the product designers have existed for over 20 years and can share tacit knowledge face to face. Printronix maintains about a half-dozen local manufacturing engineers in Singapore as well as a software group of about 13 people to customize products for Asia. Printronix also has about 109 design and development staff in OC, and a group of about 8 software people in its Netherlands plant.

The firm had some manufacturing located in Singapore as well as Holland early on, but a decision was made in the late nineties to move most manufacturing to Singapore. The move was driven by competitive pressures to drive down cost as well as the fact that line printer technology was very mature and line printers a declining market. Therefore, there was tremendous pressure to keep prices low. Printronix still manufactures certain printer components in Irvine using computer-controlled machinery. Worldwide logistics today enable a printer to be configured to order and shipped within 24 hours from the Singapore, Irvine, or Holland plants, which also provide customer support for their market areas. The choice of Singapore for a manufacturing location involved several factors:

- Printronix had developed capabilities in Singapore from five years’ experience in manufacturing and engineering there.
- Labor cost was lower than in the U.S., although labor was a small part of total cost.
- Pioneer status with the Singapore government meant Printronix paid no taxes.
- There was a tax advantage in moving goods from Singapore to Europe.
- The worker population was educated and speaks English, which was important because there was a lot of information transfer that had to occur, especially among professionals and administrative staff.
- The government was stable and friendly to U.S. companies.
- It is an ideal location for expanding sales in growing Asia markets.

The significance of the PC Company and Printronix examples is that the answer to whether moving production offshore pulls design and development activities along with them is complex. In the case of the PC companies, design stayed in the U.S., but development moved offshore to Japan and Taiwan in the nineties. Now some development activities are moving to China following the earlier movement of production. In the case of Printronix, design and development have stayed in the U.S. even though all manufacturing has moved to Singapore. Thus, the movement of production offshore does not necessarily result in design and development going offshore. It very much depends on the nature of the industry sector, specific products within the sector, the history of the company and the characteristics and policies of the host country. Therefore, it is dangerous to generalize about what is a very complex matter which is poorly understood as yet.

Is Orange County Different?

While there is no comparable survey of offshoring in the U.S., there is plenty of evidence in academic studies and the national media to indicate that Orange County mirrors the overall national trends. That is, some areas around Detroit, Michigan or Columbus, Ohio might be seeing more offshoring of manufacturing jobs and other areas such as Silicon Valley might be seeing more offshoring of services jobs, but Orange County more nearly mirrors the national pattern. That pattern is one of modest offshoring, more offshoring of manufacturing than services activities, offshoring for cost advantages first and market opportunity second, more offshoring of manufacturing to China and of services to India, and modest growth of offshoring in the future.

Broader Implications

While OC mirrors national trends in many ways, the data also might have broader implications. The first is that despite the large projections of offshoring by industry forecasters, the proportion of firms actually doing offshoring is not large. And it might even be smaller when considered as a portion of total corporate jobs or budgets.

The second is that the pattern of offshoring is clear and dramatic. It is one of more offshoring of manufacturing than services activities, and more offshoring of manufacturing to China and of services to India. Firms offshore to China for product manufacturing and product design or development. The motivation is market opportunities in China, the opportunity to serve the Asia-Pacific market from China, and low cost production in China. Firms offshore to India for software development and maintenance or IT services. The motivation is low cost production of services. This suggests that what might be gained from intensive study of these two giants could be rather different than that from study of than minor players such as Israel, the Philippines, or Russia to name a few.

The third is that moving production of products or provision of services offshore does not necessarily result in design and development being pulled along. It depends more on the nature of the product or service, and the firm's strategy. Our understanding of these factors is primitive.

About this report

This report is part of the research being conducted by Professor Kenneth Kraemer and Jason Dedrick on the globalization of knowledge work at the Personal Computing Industry Center (PCIC) of the Graduate School of Management at UCI (www.crito.uci.edu). Data for this report came from the 18th. Orange County Annual Executive Survey led by Professor Dennis Aigner of the Graduate School of Management.

About the OCES Survey

The target population for the 2004 Orange County Executive Survey is chief executive officers, chief regional executives, or designated heads of Orange County firms. A database of the county's firms has been maintained and updated both prior to and following each annual survey. The current database contains a total of 4,114 firms in Orange County for the 6 SIC divisions used for this survey (1,663 large firms and 2,451 small firms). Two samples were drawn in order to ensure representation of both large and small firms. The first sample is a stratified random sample of the largest (100 employees or more) Orange County businesses in manufacturing, wholesale and retail trade; finance, insurance and real estate; business services, and professional services. A second sample of businesses under 100 employees was drawn based on the same stratification of industries.

The executives were initially contacted by mail with a letter describing the survey. Approximately one week after the letters were mailed, an interview coordinator called the executive's secretary to arrange an appointment for a telephone interview. The telephone interviews took, on average, 30 minutes to complete. Interviews were conducted by trained interviewers. Data collection was conducted from January 20, 2004 to February 27, 2004. The survey results as well as additional information about the survey is contained in The 2004 Orange County Executive Survey Report available from the UCI Graduate School of Management (2004).

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