The economics of outsourcing

A company's outsourcing/revenue ratio is a key indicator of its profitability. Chief information officers need to understand how outsourcing may change their view of information resources, Paul A. Strassmann argues

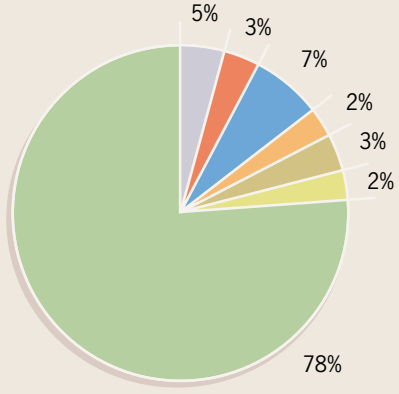
Outsourcing is often contrasted with attributes such as self-sufficiency, the ability to control and the capacity to manage, it is often labelled as a politically incorrect act, especially when it involves passing on work to lower-wage countries.

However, even under the most primitive conditions in the Dark Ages from the 5th to the 12th century, a material amount of trade was taking place to obtain essentials such as salt, metals, tools, weapons and cloth available elsewhere.

From the standpoint of a national economy all countries are outsourcers. The UK economy is already 26.6% outsourced, defined as the ratio of imports to the gross domestic product[1]. The UK has steadily decreased its outsourcing ratio from 30.1% in 2000 and it is now lower than the EU average of 33.9%, but higher than the US average of only 13.6%.

The wealth of a nation is created primarily by corporations. It would be therefore useful to examine the extent to which UK organisations create wealth internally – defined as 'value added' – as compared with costs aggregated from purchases from suppliers. When a UK corporation engages in outsourcing some of it will be in the form of imports, but a large share will reflect domestic purchases, so corporate outsourcing is likely to exceed national outsourcing.

FIGURE 1: Elements of costs for 738 UK corporations



1. Employee Compensation	5%
2. Direct Operating Expense	3%
3. Depreciation	7%
4. Interest + Other	2%
5. Income Taxes	3%
6. Income + Minority Interest	2%
7. Purchases	78%

I obtained data from 738 UK listed corporations that include employee compensation in their financial reports. The wages information is necessary for calculating a firm's value added, which is defined as employee compensation plus depreciation plus payment of interest plus non-operating income, plus taxes paid, plus minority interest, plus net income. Subtracting value added from revenues yields the worth of purchases (e.g. inputs outsourced to others). The arithmetic average ratios of revenue attributable to each cost element can be seen in Figure 1.

With total costs available for each firm we can then calculate the outsourcing/revenue ratios for use as a significant cost indicator for the following reasons:

- It focuses attention of CIOs from internal operations to the major contributors to costs.
- It highlights the importance of looking beyond the confines of a firm into the supply chain to seek opportunities for streamlining workflow through systems integration.
- It is useful in benchmarking a firm's cost structure as compared with competitors. Any large deviations in a firm's outsourcing ratio from competitors' may indicate a competitive disadvantage.

Table 1 (see p15) illustrates outsourcing ratios and is representative of the sample of UK firms in that the median value for the outsourcing ratio of the 738 firms (with total revenues of $1,124bn) was 83.8%[2]. The weighted average of the outsourcing ratio was 78.4%. This ratio is higher than the comparable US median value of only 68%, which can be explained because the US enjoys the world's largest domestic market for goods and services.

The outsourcing ratio is a telling index: the goods and services purchased externally may hold a key to the profitability of a firm. For instance, Tesco – with 61% greater profitability

than Sainsbury in 2002 – has consistently shown lower outsourcing ratios. As I have noted in a recent study the suspicion that higher outsourcing ratios – favoured by economists – are not necessarily productive of higher profits[3].

Neither the size of the firm nor the sector in which it operates will determine the outsourcing ratio. The extent to which a firm outsources reflects its unique characteristics and is not an inherent reflection of its market position, profits, capital structure, employment skills or competitive position. This leads to the following laws of information economics[4]:

- The outsourcing ratio is unrelated to shareholder returns.
- The outsourcing ratio is not a characteristic of an economic sector.
- The outsourcing ratio is not related to the revenues of a firm.
- Outsourcing ratios reflect reliance on imports as sources of supply.

From a CIO's perspective, purchases make up most of a company's costs, so a sole preoccupation with the efficiency of IT would be almost certainly misplaced. Though the IT costs per capita are very large when compared with compensation per capita, in the context of overall economics the total costs of IT amount to only a small fraction of revenues. For the information executive to view a firm's total costs from the standpoint of information economics, the inclusion of outsourcing costs in all analyses becomes mandatory.

The inclusion of outsourcing influences how one views a firm's information resources: consider the value-chain of a $40 (retail price) Logitech computer mouse.

Logitech is a Swiss/American multinational firm with headquarters in California. The mouse is assembled in China. The factory production costs are $3, of which about $1 is spent on information overhead, or transaction costs[5]. The estimated cost of IT support for production operations is relatively low, only 4 cents.

Globally produced parts, shown as factory purchases, costing $14, account for most of the manufactured costs of the mouse. The logistics to get all of the components into the assembly plant consumes an estimated $3.50. It will then take approximately 25 cents in IT costs to support the inbound and outbound flow materials, many procured from suppliers in Europe and the USA.

This leaves the Logitech corporate organisation with $8 for sales, marketing, research & development plus profit or an estimated $6 for information management, which includes the corporate IT budget of 54 cents.

The mouse is then distributed through an information-intensive wholesale and retailing marketing chain costing $15, which includes the distributors' and retailers' profits. Two-thirds of distribution and retailing costs, or $10, are classified as information costs, sometimes described as the transaction expenses for selling, marketing, promotion, billing, administration and personnel management plus all associated taxes and insurance. This element of the value chain is highly information-

TABLE 1: Outsourcing ratios for selected UK firms

Company Name	Sector	Revenue	Value-Added	Outsourcing	Outsourcing Ratio
Centrica PLC	Gas & other Serv combined	21,508	2,276	19,231	89%
Scottish Power PLC	Electric Services	8,622	3,167	5,456	63%
Scottish & Southern Energy	Electric Services	6,647	1,815	4,831	73%
Vodaphone Group PLC	Radiotelephone	49,662	18,905	30,757	62%
BT Group PLC	Radiotelephone	30,618	24,616	6,002	20%
Dimension Data Hldgs PLC	CMP Prgming, Data Process	2,015	21	1,994	99%
Misys PLC	CMP Integrated Sys Design	1,657	433	1,224	74%
Kidde PLC	Communications Equip, Nec	1,322	323	998	76%
Wolseley PLC	Hardwr, Plumb, Heat	13,441	1,423	12,018	89%
British Airways PLC	Air Transport, Scheduled	12,570	2,935	9,635	77%
Rolls-Royce Group PLC	Aircraft Engine, Engine Parts	9,229	1,519	7,711	84%
BP PLC	Petroleum Refining	232,571	31,660	200,911	86%
Wood Group (John) PLC	Oil & Gas Field Services, Nec	1,433	288	1,145	80%
Hunting PLC	Petroleum Refining	1,429	83	1,346	94%
GlaxoSmithKline PLC	Pharmaceutical Preparations	35,055	19,431	15,624	45%
Astrazeneca PLC	Pharmaceutical Preparations	18,849	10,316	8,533	45%
Amersham PLC	In Vitro, In Vivo Diagnostics	2,567	527	2,040	79%
Tesco PLC	Grocery Stores	43,060	4,650	38,410	89%
Sainsbury (J) PLC	Grocery Stores	28,497	2,479	26,018	91%
Alliance Unichem PLC	Drugs and Proprietary-whsl	14,387	620	13,766	96%
ICHmperial Chem Inds PLC	Chemicals & Allied Products	9,202	2,063	7,140	78%
Johnson Matthey PLC	Sec Smelt, Refin Nonfer Metal	7,069	1,061	6,009	85%
BOC Group PLC	Indl Inorganic chemicals	6,079	1,718	4,361	72%

TABLE 2: The value chain defines the scope of information economics

Elements of Value Chain	Cost inputs	Information Costs	IT Costs
Factory Production Costs	$3	$1	$0.04
Factory Purchases	$14	$4	$0.25
Management Costs and Profits	$8	$6	$0.54
Distributors and Retailers	$15	$10	$0.70
Totals	**$40**	**$21**	**$1.53**
% of Retail Price	100.0%	51.0%	3.8%

intensive and consumes as much as 7% of information costs, or 70 cents. It is noteworthy here to comment on how misleading revenue-based statistics can be when the CIO or the retailer attempts to benchmark their IT expenses. Using conventional percentage of revenue ratios the retailer would claim IT spend of only 1.75% of revenue, which will gloss over the fact that the IT budget supports only $10 of costs.

CIOs would be well advised to construct value-chain tables, such as shown in Table 2. CIOs are likely to restrict their roles to only sections of the value-chain, yet understanding both the upstream as well as down-stream information economics will greatly improve their appreciation of where to invest IT with the greatest overall effectiveness: there is a strong link between retail prices, information costs and IT costs.

Effective IT spending is presumed to lower the costs of information in the value chain and is expected to reduce the costs of inputs. How such linkage is deployed on the global scale is then the essence of what is now labeled as the globalisation of world trade. Therefore, depending on the view from where the Logitech value chain is analysed the definition of outsourcing will vary.

The factory manager views the value of outputs as $17 (e.g. $3 for factory production costs plus $14 for factory purchases). From this standpoint the percentage of outsourcing is $17 – $3. This then yields an outsourcing ratio of $14/$3, or a very high dependency on suppliers of 467%.

Logitech corporate management has a different point of view on outsourcing. Logitech sells the mouse for $25 (or $40 retail price minus the distributor's and retailer's mark-up of $15). The value added by Logitech is $8 for management and profits. Therefore outsourcing, as seen from the management standpoint is $25 – $8, so $17. This then yields an outsourcing ratio of $17 / $8, or 213% dependency on suppliers.

Such highly leveraged value chains are an open invitation to competitors. It would not take much capital or innovation for a competitor to find a comparable source capable of manufacturing copies of Logitech technologies. The distributors and retailers are already in place, at no cost to a potential Logitech competitor. If a competitor can assemble an engineering and marketing team for less than $6 per mouse they could offer lower prices and better features while mounting a rapid attack on Logitech's market share.

An analysis of the ready availability of outsourcing capacity, at very little capital cost, would view the market place as an opportunity to innovate and then gain market share by offering an equivalent, but lower-priced product. Theoretically, the competitor could manage and market an advanced model of a mouse by directly controlling the entire value chain for at least $20.50 through global systems integration of logistics and engineering. Assuming that an Internet-marketed as well as a technically superior product could also command a retail price of $40, the amount of outsourcing necessary to support the new competitor would be $40 – $20.50. This then yields an outsourcing ratio of $19.50 / $20.50, or only a 95% dependency on suppliers.

The above comparisons have far-reaching implications, as seen from the standpoint of a CIO:

- The economic power of a globally inter-operable value chain that is centrally managed for coordinated information management opens opportunities for new competitors to enter into the market place.
- The competitor who can manage a globally flexible logistic chain can achieve competitive superiority through information superiority at a relatively low cost as long as product and services innovation is present.
- The corporate CIO – whether located at the factory, logistic, administrative or distribution levels of the value-chain – must be on a continuous lookout for competitive threats that do not arise from incremental gains in efficiency, but from rearrangement in the coordination of information transactions.

For example, if the CIO of Logitech has only an oversight of every penny of corporate IT spending, this would

TABLE 3: The importance of information and IT depends on an executive's perspective

Executive Perspectives	Information Costs	Value Outputs	Information/ Value	IT/Value
CTO	$0.54	$6.00	9.0%	9.0%
CIO	$6.00	$25.00	24.0%	3.3%
CEO	$10.50	$25.00	42.0%	2.2%
Competitor	$20.50	$40.00	51.3%	1.4%

account at best for only 54 cents. In a conventional outsourcing contract for only IT services the deal could aim for shaving immediately as much as 5 cents from corporate information costs of $6. From a purely technical standpoint such a tactical move could be worthwhile. However, this still begs the question what ought to be the role of a CIO in a multinational organisation.

Does the scope of the job cover 54 cents for IT (which I define as the CTO perspective); $6 for corporate information management (which I define as the CIO perspective); $10.50 for the logistic pipeline stretching from China to the Logitech warehouses in the US (which I define as the inward-looking CEO perspective); or $20.50 for the total information costs that matter when competing against aggressive suppliers?

An analysis of the ready availability of outsourcing capacity, at very little capital cost, would view the market place as an opportunity

Depending on whether the perspective is to deliver 5 cents in operating cost reductions at the headquarters or to transform the $20.50 to improve profits through competitive initiatives, the outsourcing decisions would have to be different. My own take is that before you chase 5 cents worth of gains from outsourcing operations you better make sure that this will not jeopardise the capacity to improve on the $20.50.

In computer magazines I see frequent discussions about the alleged subordinate roles of the CIO in the corporate hierarchy. Computer professionals have a tendency to aspire to higher status than they feel they are receiving. If they contructed an economic profile as seen from different organisational perspectives, such as illustrated in Table 3, it would assist everyone in understanding the status of computer people in measurable terms.

Ultimately, that is the most important way corporate influence and power are valued and rewarded. I subscribe to the truism that "what you see depends on where you sit". If an ambitious computer professional wishes to rise in the corporate order the first step upwards would necessitate a re-calibration of perspectives from a narrow view of only IT to an examination of total information costs and the total value of outputs for delivering goods and services to the customer ■

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ACTION POINTS

- When costs are dominated by outsourcing, do not concentrate on the importance of IT.
- What matters are the total information costs in the value chain and how they enhance commercial viability.
- Find how to reduce total costs of ownership as seen from the consumer's point of view.
- There will be always a competitor who will pursue the strategy of global integration of logistics, engineering, marketing and quality support to deliver better value to the consumer.

FOOTNOTES

[1] From International Monetary Fund, World Economic Outlook Database, 2004 data.

[2] Data from Standard & Poor's Global Database of March 15, 2004. Data in US dollars and represents 2003 financial statements except in instances when only 2002 data were available.

[3] Strassmann, P.A., Outsourcing is Still for Losers, Computerworld, February 2, 2004, http://www.strassmann.com/pubs/cw/outsourcing-still.shtml

[4] The relationship between outsourcing ratios and corresponding values of ROE and Revenue were tested for statistical correlation. Regression coefficients of 0.05 were taken as indicators of no correlation.

[5] Wall Street Journal, January 30, 2004. The data provided are for the "Wanda" model.

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