

Using Organizational Control Mechanisms to Enhance Procurement Efficiency: How GlaxoSmithKline Improved the Effectiveness of E-Procurement

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Like many organizations, GlaxoSmithKline (GSK) implemented e-sourcing tools only to find that the realized savings fell below predicted levels due to an abundance of noncompliant purchases (purchases made outside contractual arrangements). GSK estimates that it loses between \$80 and \$120 million dollars of procurement savings because of noncompliance. GSK changed its information and compliance systems and obtained various benefits. Its implementation of compliance techniques improved purchase compliance by 50 percent in some areas of GSK. Companies can use a three-phase process for solving problems of noncompliance: (1) gathering data, (2) identifying causes of noncompliance, and (3) designing conformance mechanisms. Organizational control mechanisms misaligned with supply chain strategy caused friction.

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GlaxoSmithKline plc (GSK), an international pharmaceutical company, uses organizational control mechanisms, including information, incentive, and compliance systems to increase its savings from using e-sourcing tools. After centralizing its procurement function and implementing operations-research-oriented tools to optimize and streamline its purchasing process, GSK discovered that it could save additional millions of purchasing dollars by focusing managerial attention on areas of noncompliant purchase (when suppliers and GSK employees fail to comply with the terms and conditions of procurement contracts). Noncompliance may occur for reasons internal to the purchaser or for reasons attributed to a supplier. Through careful study of noncompliance problems, we found that most noncompliance problems resulted from a lack of alignment between

the new procurement structure and the organization's control mechanisms. The firm could mitigate these problems by changing its control mechanisms, for example, by enhancing information systems and aligning incentives. GSK's experience emphasizes that organizations that change their processes must also change their control mechanisms. To improve their purchasing and supply chain performance, organizations must pay attention to compliance, personal incentives, and information flow. In several instances, GSK's implementation of advanced e-sourcing tools would lose effectiveness without its careful attention to organizational control systems.

On average, companies spend 48 percent of every sales dollar on procuring goods and services used in operations (Center for Advanced Procurement Studies 2004). To decrease the landed cost of products

and services (the total delivered cost) and to streamline transactions with suppliers, many companies use e-sourcing tools that facilitate communication, increase competition between suppliers, and minimize the need for costly, face-to-face negotiations. Requests for information, proposals, and bids all flow through e-sourcing tools. Such tools enable organizations to hold Internet auctions (e-auctions) and reverse auctions (e-RAs). In 2003, companies negotiated an estimated \$392,428 million of goods and services through e-sourcing solutions, with the total expected to rise to \$738,213 million by 2005 (Aberdeen Group 2002). In a cross-industry report dated August 2004, the Center for Advanced Procurement Studies reported that, on average, 17 percent of all purchases are made through e-procurement and three percent through e-auctions.

Companies that adopt e-sourcing tools report efficiency gains of 50 percent (that is, a 50-percent reduction in the time spent sourcing goods and services) (Aberdeen Group 2004). In a study by the Center for Advanced Procurement Studies, A.T. Kearney, and the Wacht Group, Friedman et al. (2001) concluded that companies can obtain 73 percent of all potential savings in purchasing by organizing the sourcing process efficiently using e-sourcing tools.

Although the implementation of innovative e-sourcing tools results in negotiated savings and projected cost reductions, often these results are not fully realized due to internal and external noncompliance. In a study examining external compliance in a select sample, the Aberdeen Group (2003) found that firms could save an additional seven percent if suppliers would comply with existing contracts. In our study, based on a broad definition of compliance that includes compliance by suppliers and compliance by the purchasing company, we estimated that 20 to 30 percent of unrealized savings are due to noncompliance. Many factors cause companies to lose savings, including employees continuing to order from established suppliers rather than from newly contracted, preferred suppliers. Compliance problems, both internal and external to the procuring organization, plague many organizations and damage the effectiveness of improved procurement contracts. Negotiated improvements in contracted costs may never translate into improved company earnings

if the organization cannot motivate employees to ensure compliance.

Companies often centralize the procurement function and implement electronic sourcing tools concurrently. In our study, we assumed that the structure of the procurement organization was exogenous and focused on how to achieve compliance with the newly negotiated contracts. We did not analyze the costs and benefits of using electronic sourcing tools or centralizing the procurement function.

We conducted dozens of detailed structured interviews with procurement executives and managers at GSK, specifically those in charge of negotiating contracts for lab supplies and hotel stays. We then observed the practices instituted at GSK and analyzed GSK procurement data to investigate compliance and incentive issues, the control mechanisms it uses to improve internal and external compliance, and the improvement in compliance it obtained between 2002 and 2004.

Procurement at GlaxoSmithKline

In 2003, GSK was the second largest pharmaceutical company in the world with sales of \$30.78 billion. Its stature in the industry was a function of the 2000 merger between Glaxo Wellcome and SmithKlineBeecham that resulted in the formation of GlaxoSmithKline. At the time of the merger, GSK implemented a global centralized procurement organization that could rapidly deploy systems and processes worldwide. GSK also implemented a suite of e-procurement tools to minimize purchase spending and to facilitate negotiations with suppliers. The suite included online ordering systems, content aggregators, and internally developed decision-support tools. GSK used the Emptoris negotiation suite to implement reverse auctions, to send requests for information, to collect sealed bids, to analyze complex bids, and to optimize sourcing decisions. GSK negotiates 90 percent of its annual spending online relative to an industry average estimated between zero to 15 percent. To facilitate increased use of online negotiations, GSK installed electronic sourcing technology centers in its three corporate business centers in Philadelphia, Pennsylvania; Brentford, England; and Research Triangle Park, North Carolina.

GSK estimates that its use of e-sourcing techniques saves 10 percent beyond the savings achieved through traditional negotiations. In other words, if traditional negotiations lead to savings of eight percent, e-sourcing will result in savings of 18 percent. Unfortunately, GSK was not realizing the full savings it negotiated because of compliance issues. For example, the company negotiated global hotel contracts, but, given its current control systems, it could not require employees on the other side of the world to book their stays in preferred hotels for the appropriate price. The company purchased direct materials, indirect materials, and services of approximately \$11 billion, comprising 40 to 45 percent of total company costs. Of total purchases, GSK spends approximately \$3 billion per year on direct products and services (for example, raw materials used in the production of a drug) and \$8 billion per year on indirect, non-strategic products and services (for example, travel-related costs). Because of the high level of regulation within the pharmaceutical industry, the strong controls on direct products within GSK, and the fact that most direct products come from only one approved supplier, compliance for direct-product contracts is virtually 100 percent.

Unfortunately, compliance on indirect-product purchases is not as high. During 2003, GSK saved \$400 million in procuring indirect-products and services. GSK estimates that it could have saved another 20 to 30 percent (between \$80 and \$120 million) for indirect products if it had had full compliance; that is, for every \$1 of projected savings, noncompliance caused approximately 20 to 30 cents to be left on the table. These losses made compliance with negotiated contracts a top priority at GSK.

To demonstrate the importance of compliance, we highlight two examples of GSK's sourcing and procurement activities, the related compliance and incentive issues, and the mechanisms GSK established to improve compliance throughout the organization. During 2003, GSK conducted a large reverse auction for hotel rooms around the world. The 90-day project covered \$80 million of spending. The procurement team contracted for 419,920 room-nights in 39 countries, covering 1,226 hotels. Overall, it estimated savings of five to 35 percent per market. In the second example, during the third quarter of 2002, GSK changed its procurement process for

lab and research supplies. It implemented an Ariba online ordering system and simultaneously installed SciQuest's Spend Director. The SciQuest site aggregated content from 72 supplier catalogs or 80 percent of GSK's spending for lab and research supplies. The supplier catalogues hosted in the aggregated Spend Director marketplace contain over 2.1 million items or 90 percent-plus of the content researchers require. GSK's move to this solution and methodology saved approximately \$2.0 million in the first 12 months.

Once it had installed e-sourcing systems, GSK focused on internal and external compliance. The incentive scheme of GSK's procurement organization drove its attention to compliance. GSK rewarded the procurement organization on realized savings, not the potential negotiated savings of e-sourcing tools. For example, it rewarded the procurement team when an employee purchased an item at the negotiated rate rather than when a procurement employee negotiated the rate. With this incentive, the purchasing organization took the lead in implementing information and control systems to improve compliance throughout the organization. As a philosophy, GSK does not penalize employees for making noncompliant purchases (for example, purchasing from non-preferred suppliers). Rather, it tries to create an environment in which compliance is a priority and is easy to achieve. The company's overall compliance improved as the purchasing organization posted relevant and comprehensive content on the company intranet, increased the user friendliness of the electronic tools, customized user-training sessions, and integrated various online tools. GSK's primary goal was to increase the compliance by influencing the company culture. We believe that the process used to improve purchase compliance is best organized in three phases: (1) gathering data to identify key areas of noncompliance, (2) identifying causes of noncompliance, and (3) designing mechanisms and control systems to ensure compliance.

Phase 1: Gather Data to Identify Key Areas of Noncompliance

To drive purchase compliance, one must first understand where the problems of noncompliance lie. Many companies do not have readily available the data they

need to analyze the compliance of purchases against contracted rates and suppliers at an item level. At GSK, we began this task by defining purchase compliance. For an item to be fully compliant, it must be an approved item purchased from a contracted supplier at the contracted price using the approved purchasing process. Acquiring data to assess compliance at this level of granularity is not trivial and typically requires merging multiple databases and many hours of work. For example, at GSK, computer staff from Purchasing has to merge contract data with purchasing and spending data from Ariba, SciQuest Spend Director, and SpendTrak.

Because of the time, resources, and expense of this process, companies may define levels of compliance and work methodically towards total compliance by addressing the largest area of noncompliance first. They may use pilot studies to figure out how to define compliance in a way that facilitates the task of gathering data. For example, a company could analyze a single purchase category to further understand the types and extent of noncompliance. Emptoris conducted a pilot study of office supplies at an anonymous organization (Figure 1). Of the total \$14 million purchases in this category, only \$3.5 million met the strict definition of fully compliant purchases and the remainder was divided into three areas

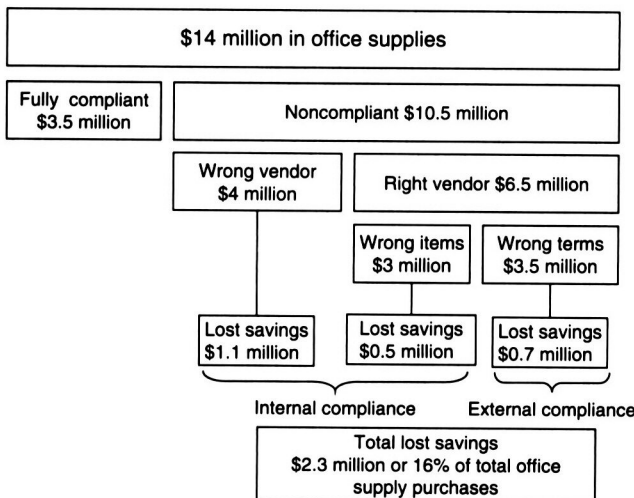


Figure 1: We partitioned the \$14 million in spending on office supplies into compliant and noncompliant purchases and further divide the non-compliant purchases to assess the impact of each type of noncompliance.

of noncompliant spending: \$4 million consisted of items purchased from the wrong vendor, on which the purchasing organization lost \$1.1 million of potential savings; \$3 million consisted of the wrong items purchased from a contracted vendor, on which the purchasing organization missed about \$0.5 million in potential savings; \$3.5 million consisted of the right products purchased from contracted vendors, but at the wrong price. The purchasing organization missed \$0.7 million in potential savings on these purchases.

For this non-GSK example, 69.6 percent of the costs of noncompliance in the office—supply category ((\$1.1 million wrong vendor + \$0.5 million wrong items)/\$2.3 million total noncompliance) are considered internal compliance problems or problems originating within the company. The remainder of the problem is external and relates to a supplier not conforming to contracted rates. Based on similar analyses, GSK defined the first level of compliance as purchasing from contracted suppliers using approved purchasing processes. With this simple definition, GSK could gather data to address most of the internal noncompliance issues, which cause most of the savings lost from noncompliance.

In 1997, GSK developed a system, SpendTrak, to report global spending across business units by category of purchase and, in 2001, enhanced it to track compliance with preferred contracts throughout the organization. With the data the system gathered, the procurement team could analyze the percentage of spending going to preferred suppliers and the percentage going to nonpreferred suppliers and then calculate the cost of noncompliance by category, region, or division (Table 1). GSK was able to identify product and service categories with high noncompliance and determine the causes.

GSK is trying to obtain data of deeper granularity for many divisions. Unfortunately, SpendTrak does not analyze data at the item level, just at the supplier level. Thus, it classes any purchase from a preferred supplier as compliant regardless of whether the supplier is preferred for that product. To obtain and analyze specific, line-item data, GSK plans to migrate to Emptoris’s ExpenseMap (spend analytics solution). This system will aggregate information from GSK’s various databases and analyze spending at the item level, facilitating the analysis of the reasons for non-compliance and identifying the main offenders.

Sourcing category-Level 3	Nonpreferred	Preferred	Total	Percent compliance
A	29,400,937	47,939,593	77,340,530	62
B	340,353	6,450,920	6,791,273	95
C	813,625	2,094,690	2,908,315	72
D	187,533		187,533	0
E		3,349,812	3,349,812	100
F	6,802,382	13,394,084	20,196,466	66
G	256,102	3,248,096	3,504,198	93
H	20,867	96,997	117,864	82
I	60,060		60,060	0
J	229,959	6,344,636	6,574,595	97
K	138,759		138,759	0
L	76,468	3,164,182	3,240,650	98
M	151,996		151,996	0
N	95,552	667,334	762,886	87
O	113,300		113,300	0
P	365		365	0
Q	5,448		5,448	0
R	71,981		71,981	0
S	6,202,228	20,488,700	26,690,928	77
T	98,296	81,655	179,951	45
U	13,924,761	21,044,531	34,969,292	60
V	10,296	519,131	529,427	98
W	274,709		274,709	0
X	1,295,503	5,161	1,300,664	0
Y	10,903		10,903	0
Z	196,713	1,641,750	1,838,463	89
AA	219,552		219,552	0
BB	9,349	61,747	71,096	87
CC	108,933		108,933	0
DD	2,386,573	1,055,357	3,441,930	31
EE	9,187	1,658,971	1,668,158	99
FF	4,697,075	13,616,092	18,313,167	74
GG	66,117	5,941,961	6,008,078	99
HH	1,378,269	42,507,006	43,885,275	97
II	232	1,815,980	1,816,212	100
JJ		2,121,980	2,121,980	100
KK	1,943	942,192	944,135	100
LL	505,452	7,144,556	7,650,008	93
MM	2,788,101	2,236,635	5,024,736	45
NN		2,369,980	2,369,980	100
OO	77,925	1,241,946	1,319,871	94
PP	346,049	1,386,574	1,732,623	80
QQ	515,127	20,928	536,055	4
RR	579,913	66,161	646,074	10
SS	558,813	640,057	1,198,870	53
TT	600,475	26,191,801	26,792,276	98
UU	2,672,478	9,130,045	11,802,523	77
VV	706,823		706,823	0
WW	78,447	204,229	282,676	72
Total	79,085,929	250,885,470	329,971,399	76

Table 1: This report analyzes one division's compliance by category of spending. Each category represents a type of product purchased by this division.



Phase 2: Identify the Causes of Noncompliance

GSK identified five major causes of internal non-compliance for indirect goods and services: (1) use of nonpreferred suppliers because GSK personnel wanted to maintain relationships with established but unapproved suppliers, (2) orders with unidentified suppliers, (3) products not well suited for use, (4) new-purchase situations, and (5) lack of information. Procurement managers classified all non-compliant purchases into one of these five categories (Figure 2). Cases of internal noncompliance in some major categories arise at the interface between the new centralized e-procurement purchasing processes and the business units using the output of centralized e-procurement. For example, miscommunication between operating units and central procurement resulted in the purchase of a product that was inappropriate for the intended purpose. We also questioned whether some situations, such as new-purchase situations, should be classified as noncompliant. GSK managers felt that by strict definition such purchases are noncompliant because a buyer did not buy an approved product through the approved process. Classifying such purchases as noncompliant moti-

vated GSK to get new purchases into the formal purchasing process. The classification serves GSK as a guide and helps it to focus on areas for further investigation; the classification does not lead directly to remedial actions.

GSK employees have established relationships with local suppliers. Motivating them to create new relationships is difficult. For example, scientists in the lab are accustomed to working with specific chemicals, solvents, and filters. Because they are familiar with particular manufacturers and their products, they may be reluctant to change suppliers. Alternatively, employees who travel frequently to and from various locations may fall into the habit of staying in the same hotel, trip after trip, rather than trying a different hotel. Situations in which employees want to maintain relationships with unapproved suppliers account for over 17 percent of noncompliance in the lab-supply category and less than 15 percent of noncompliance in the hotel category. These situations occur when GSK awards new suppliers contracts over incumbent suppliers (on average about 20 percent of the time). Familiarity, inertia, and unwillingness to change all contribute to this type of noncompliance.

In some situations, the procurement group has not yet negotiated a centralized contract with a preferred supplier. Unidentified suppliers cause 17 percent of noncompliance in lab supplies and less than seven percent in hotels. This cause of noncompliance is a function of GSK's rate of adoption of new e-procurement tools. For example, GSK first consolidated indirect purchasing in catalogue-based materials and then moved on to purchases related to services and overhead. Its adoption of tools is still ongoing for some spending categories; over time, noncompliance because of unidentified suppliers should decline in all categories.

In some cases, the users of the products disagree with the product specifications in the request for proposal and therefore with the specifications of the preferred supplier. For example, a scientist may fear that switching suppliers for chemicals will cause small changes in purity levels that will materially affect lab experiments. This situation can result from miscommunication or lack of communication between

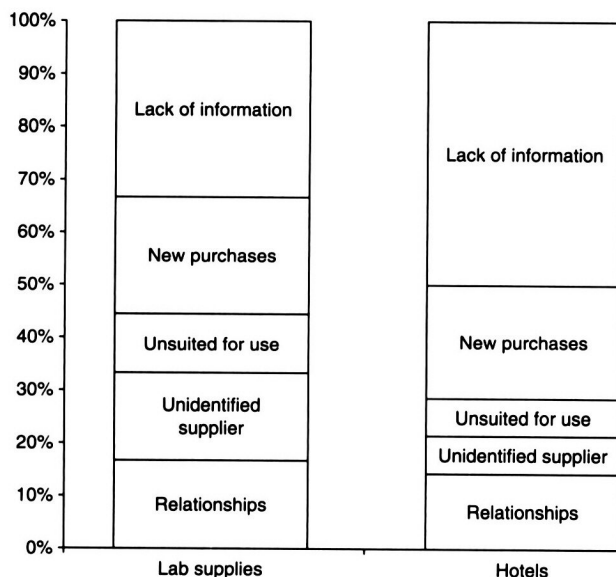


Figure 2: This chart shows the extent of each type of noncompliant purchase in lab supplies and hotels.

product users and procurement managers about product specifications (problems with internal communication). In such situations, users typically make emergency purchases from nonapproved suppliers. The unsuited-for-use class accounts for less than 11 percent of noncompliance in lab supplies and less than seven percent in hotels. Such situations often occur when GSK first uses suppliers or when product specifications are extremely complicated and difficult to communicate precisely.

Often, a division needs a product or ingredient quickly that it has not previously used and for which GSK has not designated a preferred supplier. New-purchase situations account for 22 percent of noncompliance in lab supplies and less than 21 percent in hotels. The division (or employee) bypasses the centralized purchasing process, contracting with the supplier on its own. By separating new-purchase situations from unidentified supplier situations, GSK can analyze future demand for a product and determine whether it should seek a preferred supplier.

Finally, the GSK centralized procurement team negotiates preferred contracts, but the scientists and other employees use the products and services daily. Given the size and complexity of GSK, the procurement department may lack the ability to effectively communicate contract details to group purchasing managers and travelers. Lack of information, the primary cause of noncompliance, accounts for approximately 33 percent of noncompliance in lab supplies and 50 percent in hotels. Lack of information is not a problem for direct materials for which GSK has thoroughly documented, rigorous procedures and policies, a small supply base, and regulated materials and services. However, communicating company policies and contract details is difficult for indirect materials and services, which many people within GSK purchase. For example, any GSK employee can make travel arrangements.

Analyses of the five causes of noncompliance in each area of spending helped GSK to design organizational control systems to ensure compliance. It gave priority to the areas of greatest concern.

External Compliance

GSK had fewer problems with external compliance than with internal compliance. External compliance

problems take three forms: (1) unavailability of a product or service, (2) charging a price different from the contract price, and (3) delivering a product that does not meet the contracted specifications. At GSK, external noncompliance concerning price or specifications occurs infrequently and causes minor losses. Freight suppliers sometimes add accessorial charges beyond the agreed terms. In another case, a large building-materials manufacturer noticed that a preferred contractor's charges seemed high. Managers checked the invoices and found that the contractor was adding 10 percent to subcontractors' charges and adding a nine percent general and administrative charge. Neither of these charges had been agreed upon. The controller is currently negotiating with the contractor for a \$12,000 rebate. Although external compliance is not as severe a problem as internal noncompliance, GSK must ensure suppliers' full compliance to obtain the full benefits from sophisticated sourcing programs.

To improve supplier compliance, GSK must first collect and analyze the pertinent data and identify abuses. It needs data at the item level to compare actual unit prices with contracted unit prices. The simultaneous installation of ExpenseMap and a module that tracks contract information will help GSK to validate prices online. GSK's contracts incorporate a clause that details penalties for noncompliance. Finally, GSK is beginning to help suppliers use its e-sourcing tools, which should reduce the price pressures they undergo with reverse auctions and encourage their compliance.

Phase 3: Design Mechanisms, Systems, and Incentives to Ensure Compliance

Organizations differ in structure and culture and therefore in the main drivers of noncompliance. Consequently, each organization must establish different control mechanisms to solve noncompliance problems. As organizations increase in size, complexity, and staff, they have more difficulty tracking and enforcing compliance. In general, small companies find it easier to track purchases and achieve compliance with negotiated contracts. However, they have more difficulty than large organizations in negotiating low rates with suppliers. Large companies face

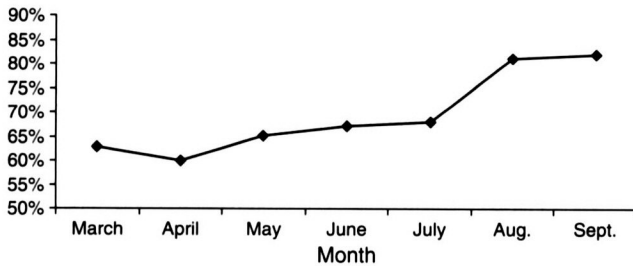


Figure 3: The degree of corporate compliance between March and September 2004 increased, illustrating the improvement that occurred throughout the year.

the opposite problem; they can negotiate lower costs but find it harder to enforce procurement contracts and achieve compliance. GSK is increasing internal compliance by installing organizational control mechanisms, including information, control, and compliance systems. (The compliance systems will also help it to track external noncompliance.) Improvement has come quickly. From March 2004 to September 2004, overall corporate compliance increased from 63 percent to 82 percent (Figure 3). This improvement has been seen even in far-reaching international pieces of the organization. International compliance has increased from 54 percent to 77 percent for the same period.

Company Structure and Culture

Before formulating and implementing control systems, organizations must ensure alignment between structure, culture, and new control systems. At GSK, alignment began at the top of the organization with mandates from senior management that compliance was of utmost importance. The mandates were followed by centralization of procurement. The mandate combined with centralization allowed GSK to accelerate its deployment of systems and processes. The procurement department adopted a central systems-technology platform and installed it worldwide. At first, GSK's centralized adoption of technology increased operational units' fear that they were losing control of the procurement process. Employees felt that new technology platforms would lack integrity and functionality. GSK employees collaborated to select technology and software that were easy to use. In the end, GSK's top managers believe that

using a centralized approach instead of a decentralized approach increased overall savings by 25 percent. Since it centralized purchasing in 2001, GSK has saved over \$2.0 billion on purchased goods and services.

Information Systems

GSK managers realized that one of the primary drivers of noncompliance was the lack of accurate information circulated throughout the organization regarding preferred suppliers, changes in preferred suppliers, and contract rates. If they could make the contracting information easily available to employees across the organization, compliance would surely improve. GSK created a Web site called the Orange Pages. GSK now uses the Orange Pages to aggregate content, communicate procurement information throughout the organization, advertise new and altered contracts, detail the negotiated rates, and provide links to purchasing systems and agents. Employees who need office supplies, for example, can access the Orange Pages and submit queries for the specific items (for example, ballpoint pens). The Orange Pages highlight the current preferred supplier, related contact information, and negotiated rates. Thus, obtaining current procurement information is easy and quick. In the summer of 2003, GSK rolled out the Orange Pages with greeters at work, posters throughout the offices, and an intranet home page announcement. Within three months, the Orange Pages had grown to over 3,000 individual searches per month, improving GSK's compliance dramatically in 2004.

Use of Internal and External Purchasing Systems and Agents

Simply providing more information often was not enough to ensure compliance. For example, the information system alone may not stop a scientist from ordering lab glassware from the local vendor with whom he has an established relationship.

GSK installed an online ordering system for lab supplies in July 2002 and simultaneously contracted with SciQuest, an external purchasing agent and content provider. GSK asked its employees to visit SciQuest's Spend Director site, which it had customized to reflect GSK's current contracts, to procure lab supplies. A user seeking to purchase gloves

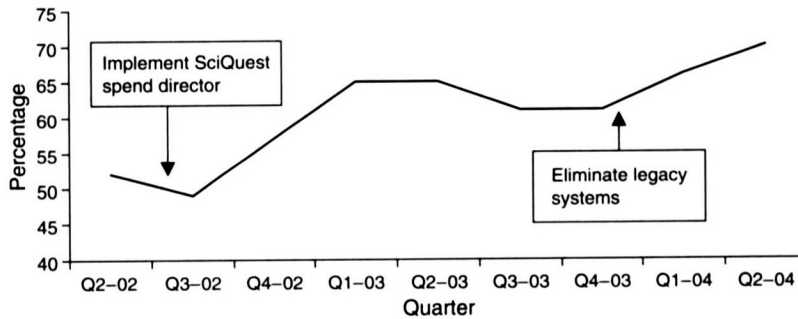


Figure 4: The percentage of lab supply purchases made with preferred suppliers increased between the second quarter of 2002 and the second quarter of 2004. Compliant purchases increased substantially over this time period. GSK implemented SciQuest Spend Director at the end of the second quarter of 2002 and eliminated the legacy systems during the third quarter of 2003.

will find only the preferred suppliers listed. After users fill their shopping carts, the carts are transferred back to the GSK purchasing system for final approval. Currently, GSK assumes that all purchases through SciQuest are compliant in that the supplies are being purchased from a preferred supplier using the company’s preferred process. Within six months after GSK installed these ordering tools, compliance in lab supplies had increased from approximately 49 percent to approximately 66 percent; after GSK discontinued the legacy purchasing systems in the fourth quarter of 2003, compliance jumped to 71 percent (Figure 4). GSK hopes to further refine the system to analyze product information and ensure that employees purchase each product from the preferred supplier for that item.

GSK also contracted with an external purchasing agent for air and hotel travel. Business Travel International (BTI) works with GSK’s procurement organization to rate and track hotel quality and performance in the various markets. GSK directs the strategy and process, and BTI implements the process. Travelers may call BTI directly or book travel through the GSK intranet, which directs employees to preferred hotels. BTI analyzes travel data and reports compliance and savings quarterly. Although GSK had previously used auctions to negotiate with hotels, the combination of the electronic sourcing tools and BTI led to an additional four percent or \$3.2 million in realized savings and a compliance rate in 2003 of 61 percent. Compliance increased by 14.7 percent between the periods January through June 2003 and January through June

2004 (Figure 5). The improvement equates to an additional \$3,531,600 or 15,696 room nights.

Accountability and Incentives

Finally, companies must ensure that employees throughout the organization are motivated by internal incentives to comply with global procurement contracting. GSK rewards procurement employees based on the savings they achieve rather than on the savings negotiated. The procurement manager’s job, therefore, does not end when the supplier signs a contract; rather, he or she must inform employees about currently preferred suppliers, analyze compliance reports regularly, and create innovative ways to discourage noncompliance. Consequently, the procurement department has been the major force behind the compliance systems and information systems implemented, such as Orange Pages, SciQuest, and

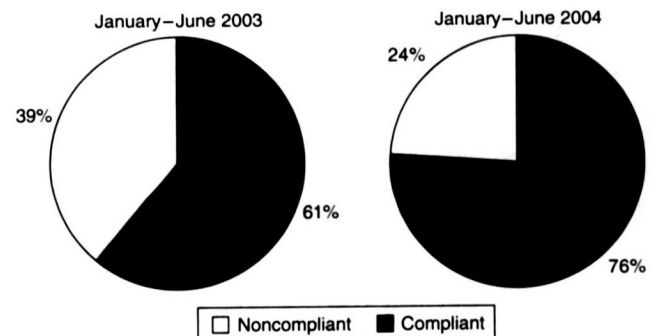


Figure 5: These pie charts show the breakout between compliant and non-compliant global hotel purchases between January and June in 2003 and for the same time period in 2004.

BTI. When more granular compliance data is made available through the fully implemented ExpenseMap tool, the procurement managers, and ultimately budget holders, will have more information with which to track and enforce compliance.

Although GSK has no formal mechanism for determining budget holders' responsibility for procurement noncompliance, the current economic environment has caused GSK to reduce many budgets. These reductions give budget holders added incentives to get more for their money, and therefore to buy from preferred suppliers. Also, the incentives must be such that budget holders feel conflicted or penalized by global contracting. A common situation arises where a budget holder is offered a lower price by a local supplier. While using this supplier may be best for the local budget holder, deviating from the global contract may be detrimental to the organization as a whole. The budget holder should not be penalized for buying from a preferred supplier at a higher price. The company can make up the price differential and charge the budget holder for only the lower price. Establishing a transfer-pricing scheme that highlights the benefits of global contracting to the organization will further induce employees to follow company procedure.

Companies other than GSK are beginning to establish controls and incentives to ensure compliance. For example, one company has established stringent policies against noncompliance. Employees who fail to use preferred suppliers initially receive a formal warning and are reported to the CFO. Second-time violators are assessed a \$10,000 charge to their cost center. By tying group and personal compensation to achievement of plans and goals set jointly by procurement and the business-unit leaders, the company aligns employees with the procurement strategy and induces them to follow preferred contracting.

Linking compliance with procurement contracts with incentives and compensation motivates employees to comply with the contracts. To be used in compensation, a performance measure should be sensitive to the employee's actions, controllable by the employee, accurate, and finally, informative about the employees' effort (Holmstrom 1979, Banker and Datar 1989). To link compliance and incentives, the company must ensure that internal data and reporting are timely and accurate. If preferred suppliers are

not properly flagged in the system, employees may be penalized despite their ordering from an acceptable supplier. Furthermore, the company should understand the underlying cause. Some exceptions are not within employee control; by understanding the reasons for noncompliance, the company can determine whether the employee ignored the contract or acted in response to unforeseen and uncontrollable circumstances. For example, in several instances, employees stayed in nonpreferred hotels because the preferred hotels in the region had no rooms available because of a convention or special event. In its compliance reports, GSK's procurement organization should document the reasons employees were noncompliant.

When using formal incentive programs, it is often difficult to distinguish between controllable actions and circumstances beyond the employee's control. For example, because procurement employees' compensation is based on realized savings, they take an expanded view of their responsibilities and track negotiated contracts until employees make the actual purchases. It may be unfair, however, to hold a procurement manager in the UK responsible for the actions of an employee on the other side of the world. GSK must consider its goals of compliance (for which realized savings seem to be the best measure) and the risks it places on employees when the actions in the incentive contract may be out of an employee's control.

Conclusions

To date, researchers have not thoroughly studied procurement in general and specifically the compliance and control issues associated with procurement contracting. In their current research, they focus on the theory and application of auctions and the match between product characteristics and the procurement mechanism used (Pyke and Johnson 2004). In their theoretical work on procurement incentives, Baiman et al. (2000) analyzed the consequences of external compliance, such as product quality. In their future work, researchers should focus on internal compliance issues and an empirical examination of the frameworks theorists prescribe. Specifically, based on our observations at GSK and our

observations at other companies, it is apparent that organizations must align organizational control systems, such as incentive, information, and compliance systems, with their procurement strategies to realize projected results. Researchers should study, both analytically and empirically, the relative effectiveness of various control mechanisms across organizations and their relationship to product and organization demographics. In many cases, GSK uses self-service buying tools to improve compliance. Does the effectiveness of these types of tools vary with types of purchase?

By examining compliance issues, we obtain a new view of suppliers. Questions arise as to the influence of new e-sourcing tools on the supplier base. For example, do reverse auctions attract the best suppliers? Are compliance problems with suppliers related to use of e-sourcing tools? GSK encouraged and would assist suppliers to implement reverse auctions with their suppliers. When GSK pushes procurement savings up the supply chain, how does the organization allocate additional savings among its trading partners?

Implications for Managers

The case of GSK emphasizes the key roles that information, incentive, and compliance systems play in a company's reaching the full cost savings to be derived from e-procurement technology. GSK lost 20 to 30 cents for each dollar of noncompliant purchase; a substantial amount when totaled for all procurement contracts. While they can save enormous amounts with compliance techniques, managers must be aware of the investment in resources and human capital their implementation requires. A well-thought-out and well-executed electronic sourcing and electronic procurement solution fully utilized by a large corporation typically achieves a one-year payback. Once they commit themselves to improving procurement and compliance, managers must ensure that employees are aligned with the procurement strategy. They must offer incentives that will induce their compliance with negotiated contracts and that highlight compliance as a priority. Few companies, including GSK, use financial incentives or compensation to motivate compliance, partly because it is hard to

measure compliance accurately. As GSK gathers more granular and reliable data, it may choose to use incentives.

GSK found that investing in compliance improvement is worthwhile until it reached 85 to 90 percent compliance. Further improvement efforts need to be focused and carefully justified. By increasing compliance, companies realize contracted savings. However, managers must compare the marginal costs of tracking and enforcing compliance with the marginal benefit they realize from enforcing compliance, especially for low-value, low-quantity, or specialized products.

Effective procurement depends on implementing organizational control mechanisms as well as sophisticated e-sourcing systems.

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