

## Security issues in outsourcing of IT processes

### Overview

A large number of private and public corporations, governmental agencies and other institutions deal with personal information, like social security number, bank accounts, and so on. An even larger number deals with corporate-specific information, from employee files to new project development plans, new product budgets, research results, merger and acquisition information for future events, and other documents that would hurt the corporation if destroyed or made public. There's also the military-tactical sector to be considered (usually top secret data). Except for this last category, all other information is usually either processed at the company level or outsourced to another country in order to save costs.

Logically, there's an increasing trend of protecting this sensitive information against various events, like data destruction or information theft just to mention a couple of the existing threats<sup>1</sup>. For the first one, different storage media have been developed over time. For the last one, the debate over what should be done to better protect personal data is far from being over. It addresses the network security, the protection of data transfers, the software vulnerabilities on any given network, as well as the human factor. As for outsourcing,

### Outsourcing

IT outsourcing is the process of contracting a third party for managing an IT process or system outside the institution that uses it (*Outsourcing definitions*). There are two main ways of outsourcing: **offshoring** (outsourcing to another country, usually in order to take advantage of lower costs) and **nearshoring** (where the company or institution outsources to a contiguous or same continent country, typically to make use of cultural similarities and time zones).

There is a variety of IT services that can be outsourced (*Outsourcing definitions*):

- mainframe management
- database and/or remote systems administration
- security management (*Cisco Systems whitepaper*)
  - access control services
  - intrusion detection systems
  - firewalls and antivirus protection

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<sup>1</sup> See *Computer Security Threats*.

- encryption
- content filtering
- website design and hosting
- application hosting
- software development and maintenance.

When deciding towards outsourcing, a company usually does so because IT management (or any of the above mentioned services) is not a core competency – which in turn means that by outsourcing it the company can obtain a competitive advantage by using the vendor’s competencies (possibly enhanced by complementarities that are offered)<sup>2</sup> and save on overall cost. There is, however, the always present issue of security. If the vendor (the company that provides IT services for the outsourcing entity) doesn’t protect the outsourcer’s interests and information, the latter has most to suffer than the former – above all, there is a reputational (*D. Daniel*) risk.

By the end of 2009, the global market for shared services and outsourcing is expected grow to \$1.43 billion, compared to \$930 billion in 2006 (*R. King*). As for IT outsourcing alone, in 2006 companies spent about \$233 billion, which is more than a quarter of the total amount spent on outsourcing in general.

### **Advantages of outsourcing IT**

A company’s management would typically consider outsourcing all or part of the IT department in order to put the company in a more advantageous position.

- One of the advantages of outsourcing is the ***reduction in cost***. These are an outcome of establishing economies of scale on the vendor side that could not be matched by small and medium-sized institutions. In addition, the result of the salaries paid to vendors’ work force being typically lower than the ones in the country of origin of the outsourcer typically lowers total costs.

- A side effect of the efficiency obtained is the ***improved time*** from the beginning of a project until it is launched in the market. This can easily be exemplified in the case of introducing new services and products, where it would take a relatively longer time for building the infrastructure needed for supporting the new product lines, for instance, and where the experience and speed of a specialized vendor would enhance the outsourcer’s ability to innovate.

- Outsourcing offers a ***focus on core competencies*** and thus ***competitive advantage*** for the client, by taking advantage of the experience of the vendor instead of training an in-house IT department and increasing the operational burden for companies that do not have information technology as their main focus (*S. Ortiz jr.*). Companies that operate with strong IT departments can use their resources on developing and improving processes to support their corporate strategy, while outsourcing the strictly operational applications.

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<sup>2</sup> For a case study on how vendors as service providers in outsourcing relations accomplish their core competencies and are able to provide complementarities in order to become more attractive refer to (*N. Levina – Cost advantages in IT outsourcing*)

▪Another advantage consists of a ***better security coverage and service***. Through an SLA<sup>3</sup>, for instance, the parts involved can agree on a 24 hour extended coverage, when the outsourcer itself would not have been able to provide that without increasing the costs to an unwanted level (this is also referred to as *cost avoidance* – *NaviSite whitepaper*). Also, since the vendors are highly specialized, compared to the outsourcer's own IT employees that are limiting their experience to a narrow spectrum of security incidents, they may be able to notice new threats faster.

### **Security issues and other threats concerning IT outsourcing**

▪Through outsourcing in general, a company ***transfers and/or shares part of the risk*** with the third parties. This argument makes the transition between opportunities and threats, since the transfer of risk widely depends on legislation in the countries involved. This is the point where an SLA proves its force or the lack of it: under different judicial systems, the conditions on the contract may not be enough to make the service provider liable for any damage or loss of information that may have occurred<sup>4</sup>. In other words, if the service provider fails to fulfill the contractual duties, the outsourcing company may be able to get something from a law suit in the vendor's country, but is still held accountable (*J. Leigh*) in its own country for breaches that took place, if they break the law in the respective country (the outsourcer's).

▪One of the main threats is the ***loss of control*** over the outsourced operations. This brings with it the necessity of allocating managers to the outsourced relationship. One step further<sup>5</sup> would be to set a rather rigid frame for the outsourcing agreement, with clear-cut checks and balances, and also organize training sessions for the employees of the service provider. Indeed, this practice would help towards establishing a higher security level, but on the other hand it would significantly contribute to the overall costs.

▪In some cases, the vendor is either not willing to or can not change and easily adapt processes to better fit the company that is outsourcing. This ***lack of flexibility*** is a notable disadvantage of the outsourcing process, and can be partially addressed through the initial SLA, or even before that: when making the decision as to where to outsource, by eliminating from the beginning the destination where the information available points toward inflexibility in the work practices.

▪There is also an ***impact on human resources*** and ***assessment of security issues*** given the status of the vendor's employees, as the outsourcer experiences a loss of direct control over who is hired to work on its IT functions. Depending to the vendor's cultural context, this may lead to differences in categorizing information into private and public and thus creating a real threshold over what needs to be protected from breaches.

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<sup>3</sup> A service level agreement (SLA) is a contract between an IT services provider and a customer that specifies – at the beginning of the outsourcing relationship and in measurable terms – what services the vendor will furnish (*CIO's ABC*).

<sup>4</sup> The *Information Security Survey 2007* (Informationweek Research & Accenture, July 2007) finds that almost half of the US companies believe that security vendors should be held legally and financially liable for security vulnerabilities in the products and services they offer (*Outsourcing definitions*), indifferent of the country of practice.

<sup>5</sup> As recommended in *S. Ortiz, jr.*

▪IT outsourcing can determine a **relocation of IT equipment** from a safe and known environment to an unknown one (*D. Twing*), thus further creating risks for the company.

▪In addition, possible security risks come with the opening of the company towards a third party providing services that often involve **sensitive information** (exposure of critical data, intellectual property such as patented processes or source codes).

▪The complexity of the security process determines an **increased vulnerability** to data breaches, especially under outsourcing agreements (*A. Coro*). The reason is that most outsourcers do not take the time to understand all the details involved and thus are more likely to make mistakes in either choosing the vendor or in determining the SLA.

▪From the same reasons mentioned above, the **compliance with internal regulations** may be harder to meet through outsourcing, especially if the service provider is not sufficiently aware of the legislation regarding IT in the country of origin of the outsourcer. As far as liability goes, even if the service takes place in the vendor's country, the outsourcer is still the one that has to comply with the law (*J. Leigh*).

▪More of a general threat, not IT outsourcing specific but nevertheless important in the decision process for outsourcing is represented by the **currency risk**. Financially, the changing exchange rates can make an initial cheap contract become quite expensive – especially, in the case of the United States for instance, in the light of the diminishing purchasing power of the dollar during 2007.

### **Factors that influence the outsourcing decision and location**

▪The **linguistic skills and education** of the country towards which a company is outsourcing its IT functions should be a factor to take into account. If the vendor's employees are fluent in the outsourcer's language, then there are fewer problems likely to arise from misunderstandings about what is desired from the service provider. These factors are softened though by the **cultural affinity** between the supplier and the outsourcing customer, which has a less quantifiable effect but still adds to overall productivity<sup>6</sup>.

▪A high **level of skilled work force** (*S. Pruitt*) tends to provide a better performance, since the vendor's employees are more knowledgeable and prepared for addressing possible issues in the outsourced project.

▪Differences in **time zones** between the two countries show an influence in the availability of the service provider; in fact, this is one of the arguments towards choosing Central and Eastern European countries instead of the further away Asian service providers and vendors.

▪The **economic and politic environment** could strongly influence the stability of the relationship between the two parties involved in the contract. In general, any possible disruptions in the normal work flow (caused by national movements or merely local strikes) increase costs (down time, loss of productivity, even relocation eventually if the situation does not resolve timely).

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<sup>6</sup> A more detailed explanation of the factors, from a nearshoring perspective, can be found in *D. Bradbury*.

▪Another element to research is the *quality of infrastructure* in the provider country, since frequent power outages, for instance, can lead to data loss to only mention the most obvious effect.

▪One of the main elements most companies look for, though, is the *price of labor* in the area where the vendor is situated (*R. King*); the lower this is, the more attractive the respective country is for outsourcing destinations, all else equal.

It is in the balancing of all these factors above that the decision becomes difficult. Related to this conclusion, most companies consider outsourcing part of their IT processes mainly because this would provide a reduction in costs. Experts (*CIO's ABC*) consider though that lower costs constitute only the initial reason for considering outsourcing. After researching offshoring and nearshoring options, companies typically realize the low price sought should be balanced by other considerations, some of them mentioned above – thus, the cost of outsourcing in general and of labor in particular should *not* be, and typically *is not*, the top decision criteria.

### **Overview of existing articles/whitepapers/studies concerning IT outsourcing**

There has been a decent amount of hype concerning IT outsourcing in the past decade. As outsourcing in general extended and IT outsourcing expanding as well, there are three trends observed:

- overstating results
- overstating threats
- offering solutions from a consultant point of view

There is an incredible number of whitepapers and articles in the area of outsourcing in general, and IT outsourcing in particular. At a closer look, though, most of them refer to the same elements over and over again. There are papers quantifying the benefits as cost savings and increased flexibility for small and medium companies. Other papers point out the risks associated with outsourcing; these risks are sometimes theorized them to such extent that it would be hard for any IT manager to check and apply all of them.

As for a possible classification by provenience, the articles in *current newspapers* show a preference for mathematical precision by struggling to cite studies and calculate numbers to quantify risk and current development trends. The *white papers* generally tend to theorize optimal relations, mainly from the point of view of vendors or consultants that also present their version of the best attainable solution. In articles from *specialized IT publications* there has been a consistent stress on warning about risks, but also on warning about warning too much against IT outsourcing, to the point where the threats appear much grater than the benefits. Finally, *governmental and officially sponsored research papers* show a combination of these trends, with significantly less of a preference for numbers.