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ABSTRACT (REQUIRED)

Outsourcing and offshoring (sourcing) aspects of IS functions have been common organizational activities for decades. However, the landscape is evolving. Organizations are shifting from primarily single vendor-client sourcing relationships toward innovative multi-vendor relationships integrated into organizational strategic plans. Current students are tomorrow's leaders, and as such it is critical that IS programs teach cutting edge strategic sourcing concepts. We analyzed student perceptions of the pros and cons of sourcing and found that current students largely anchor to a limited number of concepts that may be outdated and not representative of today's competitive sourcing landscape. Current organizational trends in sourcing require a different skill set for IS managers than those required in the past. More must be done to inform students of current trends in order to prepare them for the skills needed to be effective in their future IS roles. A framework of required skills for future IS managers is offered.

Keywords (Required)

Outsourcing, offshoring, information systems education

INTRODUCTION

The ancient Greek philosopher Heraclitus is credited with the astute observation that "the only constant is change;" an apt description of the IS discipline. Innovation and growth in the strategic use of information technology by industry drives a constant demand for IS curriculum updates and improvement. As a result IS instructors must consistently develop new and effective methods for delivery of course content in order to achieve a profound impact on students. Over the years numerous learning models have been introduced to improve IS education, including; objectivism, constructivism, collaborativism, cognitive information processing, and socioculturism (Leidner, 1995). While the premise of these IS learning models are different, their goals are largely the same: to help students acquire the necessary knowledge and skills to be effective IS professionals. Our primary role as IS educators is to prepare students to be effective IS professionals; to prepare students for the changing landscape of roles in IS. Outsourcing and offshoring (collectively referred to here as outsourcing) are quickly emerging as sources for strategic innovation and competitive advantage in industry. Simultaneously, the vendor market is evolving, impacting the products and services available for organizations to incorporate into their strategic plans. These trends have resulted in a complex and uncharted competitive landscape. One certainty is that the demand for IS professionals with skills for effective management of emerging competitive IS sourcing contexts is on the rise. As IS educators we have a responsibility to ensure that these current outsourcing trends, and the impact on required skills for IS professionals, are incorporated into our course content.

In this article we address the question, "are current student perceptions related to sourcing in line with industry trends?" and investigate student perceptions of outsourcing relative to concepts that have been introduced in the academic and trade literature. We begin with a review of the outsourcing literature. Next, we describe our approach to data collection and qualitative analysis of student perceptions. The results of our analysis are offered, followed by a discussion of the implications of our findings. Finally we provide an initial framework of skills required for IS mangers in the future, and we suggest that the skill set should be considered when developing IS course content in order to prepare students for careers in IS management that will inevitably include outsourcing components.

BACKGROUND

Outsourcing is a common practice in today's competitive environment (Pring, 2010). However, over the past several decades there has been a shift in the focus of how and why companies outsource. In this section we review the outsourcing literature

with the aim of understanding the reasons why companies outsource and the challenges and concerns associated with outsourcing. Our investigation is guided by a few key questions related to our focus on preparing students for their future roles as IS professionals:

- What trends exist in the literature related to outsourcing?

- Are student perceptions of outsourcing aligned with trends identified in the literature?

- How do we help prepare IS students for a job market impacted by the emerging trends in outsourcing?

Three "phases" in the evolution of outsourcing emerged from our literature review process. As a result we have divided our review into three outsourcing categories, including; Early Views of Outsourcing (pre-1995), Maturation of Outsourcing (1995-2010), and Emerging Trends of Outsourcing (2011 -).

Early Views of Outsourcing (pre-1995)

Outsourcing emerged as an important organizational industry trend in the early nineties, primarily limited to large corporations like Eastman Kodak successfully outsourcing their IT infrastructure in 1989. Soon other Fortune 500 companies were farming out portions of their computing activities. Outsourcing practices continued to flourish as a mechanism for IS departments throughout the nineties and included outsourcing activities such as; applications development, utilization of data centers, systems integration, systems planning and design, telecommunications and network functions, and time-sharing (Loh & Venkatraman, 1992).

The major incentives for outsourcing IT functions in these early days were primarily cost reduction and access to greater technological skills. In the early nineties, the cost of acquiring and maintaining information technology was high. In addition, the proliferation of IS use in organizations was expected to rapidly increase; therefore realizing cost reduction through outsourcing provided a competitive advantage (Loh & Venkatraman, 1992). Because of economies-of-scale, vendors were able to perform some activities at a lower cost, with higher efficiency, than many organizations could achieve on their own (Takac, 1993). This opened the door for outsourcing as potential solution to effectively reduce cost. As a result, many organizations began to shift IS related activities to the vendor market.

Early views of outsourcing focused primarily on make-or-buy decisions. Organizations outsourced some IS functions allowing them to focus on core competencies (Lacity and Hirschheim, 1993). By outsourcing routine tasks to vendors, companies had greater flexibility and employees could focus on more strategic initiatives. In some cases, outsourcing came as a solution to downsizing times of economic downturns.

Our review of the literature revealed the most salient drawbacks of IS outsourcing during this early period included: (1) risk of giving control of network and data processing to an outside entity; (2) concern that the reduction of skilled staff and resources (in-house) would prevent the re-introduction of these functions later; (3) concern that the vendor staff would not have adequate domain (industry) knowledge; (4) dependence on vendors; (5) loss of confidentiality related to vendor conflicts of interest; (6) considerable cost of switching to outsourcing model (Takac, 1993; Gantz, 1990). During this era, IS emerged as a necessary source of the necessary agility and flexibility required in a rapidly changing environment. IS provided a competitive advantage and outsourcing was integrated as a potential solution to the increasing cost and complexity of purchasing and maintaining IS, enabling organizations to compete efficiently in the age of information.

Maturation of Outsourcing (1995-2010)

By the mid-1990s, it was evident that industry had widely adopted outsourcing practices. However, outsourcing for the sole purpose of cost cutting no longer provided the same competitive advantage. Organizations started to refine their outsourcing strategies accordingly. Grover, et al. (1996) indicated that emerging outsourcing trends were expanding to include: (1) an increase in functional outsourcing, (2) providers (vendors) taking on more responsibility and risk, and (3) client-vendor relationships becoming more like a partnership.

Organizations discovered that vendors could be more than a second set of hands for technical tasks. The focus turned to outsourcing arrangements as complex resources that required the management of both knowledge and innovation in vendor relationships. Quinn (1999) emphasized the importance of managing knowledge and innovation in outsourcing contexts and identified outsourcing advantages as the ability to obtain (1) higher value and more integrated services from vendors, (2) opportunity for innovation, and (3) value gains for shareholders. Disadvantages noted included (1) difficulty in measuring the monetary value of intellectual contributions and (2) concerns about losing internal skills resulting in dependence on providers.

By the early 2000s, hidden costs of outsourcing were being discussed. Researchers identified many hidden costs including (1) vendor search and contracting, (2) transitioning to a vendor, (3) managing the effort, and (4) transitioning after the outsourcing occurs (Barthelemy, 2001).

Security issues emerged as a concern as the vendor-client relationships became more complex. Desai and McGee (2010) offered related recommendations including: (1) given the large amount of client information stored at the vendor site, clients should test the provider systems for security vulnerabilities; and (2) clients should determine if functions that have been outsourced for the purpose of lowering costs have also improved efficiency. Another topic gaining attention was the development of a sourcing strategy. Mitchell (2010) suggested five components that need to be optimized for sourcing strategy, including: cost, speed, risk, quality, and flexibility.

The identification of trends, pros and cons, during this time period helped to position organizational activities in the evolution of outsourcing. During this time vendors were starting to take on additional responsibilities and risks. Vendor-client relationships began to emerge as partnerships. Beyond just technical tasks, knowledge and innovation became a consideration for outsourcing decisions. In addition, during this time period the recognition of hidden costs and security issues emerged.

More recently, integrating outsourcing into strategic development processes has come into vogue. While client organizations increase the frequency, complexity and sophistication of their outsourcing arrangements, new vendors have flooded the market. Client organizations have more strategic options in the vendor market, primarily the ability to create multi-vendor relationships. However, this shift increased security concerns as well as uncovered an increasing need for leadership methodologies for managing rapidly emerging outsourcing models.

Emerging Trends in Outsourcing (2011 and beyond)

The outsourcing market is changing; today's vendor market is a diverse and crowded competitive landscape. Over the past decade the market has been flooded with new vendors, resulting in "hypercompetition" which has driven down costs substantially (Pring, 2010). However, the historically singular focus on cost reduction has also had the negative impact of reducing innovation in the products and services offered by vendors. Heightened competition has resulted in consolidation of many companies, impacting the stability of many vendors, as well as the capabilities, products and services available in the vendor market (Pring, 2010). These changes are dramatically impacting innovation in the IS services market and are driving growth in new outsourcing options such as cloud computing and multi-vendor strategies (Pring, 2010). Firms are increasingly realizing a competitive advantage through the innovative selection and integration of outsourcing products and services into existing resource structures; as well as through new combinations of global multi-vendor relationships (Levina and Su, 2008; Wilson, 2010).

For decades IT assets have been fundamental to business. However, IT assets are expensive to design, build, maintain and purchase. Historically the vendor market has provided highly customized services, often weighted down by inflexible legacy applications (Cohen and Igou, 2010). Increasingly organizations are realizing that highly customized services are expensive and do not enable the agility required in today's rapidly changing and competitive market. Instead of highly customized products, organizations are looking for new innovative and agile ways to obtain the value that IT assets provide without the obligation of ownership (Cohen, 2010). The vendor market is responding with innovative in the form of cloud computing, which offers options to purchase software application services, IT-platforms as a service, and IT infrastructure as a service (Demirkan et al., 2010). Vendors are moving away from one-to-one applications and toward one-to-many solutions that emphasize reuse, standardization, and templates that reduce specialization to only 20% of the application (Pring, 2010). Innovation in cloud computing is increasingly moving into organizational strategies. It is estimated the companies will spend roughly $12 billion on IT services via the cloud (software, platforms, and infrastructure) in 2011 (Cohen, 2010).

Cloud computing refers to a shift from locally installed software and hardware to having the major components of software, processes and hardware residing on unseen computers, whereabouts unknown, scattered across continents (Hayes, 2008). It refers to both the applications delivered as a service over the Internet and the hardware and software that reside in the data centers that provide those services (Armbrust et al., 2010). Cloud computing has the potential to transform industry, making software even more attractive as a service and shaping the way that IT hardware is designed and purchased (Armbrust et al., 2010).

Cloud computing is driving the development, building, maintenance and purchasing of IT assets outside of the firm, and by default radically changing the future of the IS professional. As the cloud is writing, delivering, and managing code, the skill set required by IS professionals will change. IS professionals will need to be able to think about the big picture and integrate external services into existing investments. They will need to be process orchestrators, skilled at enterprise architecture, data management, process integrity, and adept at pulling together services purchased from multiple vendors. IS professionals will

need to be skillful at managing vendor relationships, integrating internal and external schedules, and processes. Finally the IS professional of tomorrow will need to be skilled at handling cultural and geographic differences.

Table 1 captures prominent pros and cons associated with the three phases of the evolution of outsourcing. Some themes that emerged during one time frame continued to be discussed in subsequent time frames. The discussion of the themes evolved as business and technological contexts of outsourcing changed.

Time Frame	Outsourcing Pros	Outsourcing Cons
Early (pre-1995) (Silos)	Cost reduction Access to greater technological skills and resources Focus on core business	Increasing level of dependencies on outsourcing vendors Risk of loss of control to a third party Loss of skills and resources Loss of confidentiality Risk of the vendor being bankrupt or target of a takeover Cost of converting to outsourcing Cultural differences
Middle (1995-2010) (Collaborative)	Optimize costs Focus on core business Flexibility Focus on development of strategic application/greater flexibility Downsizing in the economic downturns Better and more structured documentation and methodologies	Cultural differences Hidden costs Loss of control Security/Privacy
Emerging Trends (2011 - …)	Cost reduction Infinite computing resources Reduced upfront & fixed cost Economies of scale Increased flexibility Increased mobility Pay on short term or as needed basis Constant flow of information between all inter-organizational partners Ease of access Frees IT staff to focus on IT innovation and strategy Infinite scalability "Potential of "green power management" More choice Increased agility	Loss of control to 3rd party Security concerns Privacy protection Data integration difficulties More difficult to customize Forces reliance on platform types (LAMP, etc.) Latency/speed concerns Difficult to log data can result in compliance issues Dependent on Internet connection (political/infrastructure instability) Downtime/outages out of your control Bureaucracy and multi-vendor contract management Disaster Recovery Concerns Back-up issues Processes and Methods do not yet exist to management transition to cloud computing KM and Data Mining across multiple sources/platforms

Table 1 - Outsourcing Pros and Cons

METHODOLOGY

To discover student perceptions regarding outsourcing, and to determine if student perceptions are aligned with trends in the literature, we employed a two phase qualitative approach based on grounded theory (i.e., 1 - open or free coding, followed by 2 - axial coding) as suggested by (Strauss and Corbin 1998).

We collected data over three semesters from 2009-2010. A total of 77 undergraduate, sophomore-level, MIS students in a class at a University in the United States participated. Students were asked to read an introductory article on outsourcing and then subsequently conduct (independently) additional research on outsourcing. Students then participated in an online

discussion about the pros and cons of outsourcing. Each semester the discussion lasted approximately two weeks. Students were encouraged to frequently return to the discussion to follow-up and evaluate and respond to other student comments. In all, 130 comments were created and subsequently evaluated. Multiple ideas were often embedded in each comment.

The student comments were analyzed using open and axial coding as suggested by Strauss and Corbin (1998). During free coding, each student perception was interpreted and then assigned one or more codes that captured the main idea(s) conveyed. Later, during axial coding, these codes were reviewed and generalized. Two researchers coded a representative sample of the data (one fourth of the data). Researcher 1 identified 12 categories for pros and 10 categories for cons. Researcher 2 identified 10 categories for pros and 15 categories for cons. Researchers then compared categories and reconciled differences in terminology and similarities between categories to create a consolidated set of 11 pros and 14 cons.

All comments were then evaluated by a custom crowd sourcing mechanism custom developed for this research. The crowd sourcing mechanism utilized MechanicalTurk.com, a tool that has been developed to have *workers* perform *human intelligence tasks*. Each comment was evaluated by 5 different individuals who were asked to read the comment and then select one or more pros/cons of outsourcing as identified by the researchers. Participants were instructed that they would be compensated based on agreement of category selection with other participants. Filtering criteria was employed to limit the amount of erroneous data that was introduced by coding participants. Filtering criteria included minimum and maximum completion time thresholds and obvious patterns of violations (a systematic set of categories being marked). After filtering criteria was applied, categories were associated with comments where multiple participants identified the same category. Although we recognize that this approach may increase the error of coding comments and that in certain situations this would be of concern, we suggest that filtering criteria and selection criteria of codes is sufficient to identify general perceptions of students related to outsourcing.

RESULTS

Our analysis of the student's perceptions revealed that, in general, students anchored to only a few of the most frequently cited pros and cons. The most cited pros included a lower cost of goods and services/lower operational cost/cost savings, cheaper labor, access to expertise, the benefits to the outsourcing vendor's economy, and increased productivity. Less frequently cited were the strategic reasons for outsourcing, including; outsourcing as innovation, the ability to focus on the company's core competencies, increased capacity and scalability, around the clock operations, etc. Table 2 provides a listing of *Pro* categories and their frequency of being cited by students.

Theme	Description	Coverage
Lower cost of goods and services/ lower operational cost/cost savings	Outsourcing vendors may be able to produce the goods and services more cost effectively due to economies of scale	31%
Cheaper labor	Vendor firms have access to cheap labor in developing countries, thus leading to overall reduction in cost.	28%
Access to expertise	Vendors may have specific expertise that companies may not have and support internally	11%
Beneficial to outsourced economy	Outsourcing brings employment to the countries where vendors are located and thus boosts their economy.	9%
Increased productivity	Outsourcing can result in increased productivity	9%
Globalization/New trade relations	Outsourcing allows a country (US) to build new trade relations with others or allows business to take advantage of globalization	6%
Focus on core competencies	Outsourcing the routine tasks frees internal employees for more strategic work	5%
Competitive advantage	Firms view that outsourcing provides/enables a competitive advantage	4%
Avoid cost of keeping skills and technologies up to date	The responsibility of finding and managing skilled workers and updated technologies lies with the vendor	2%

Theme	Description	Coverage
Increase capacity / scalability	Demand based increase in workforce or other resources can be achieved as a result of outsourcing, without the outsourcing firm required to maintain staff.	2%
Round the clock operations	As a result of difference in time zones, outsourcing/offshoring may allow operating throughout the day	2%

Table 2 – Pros of Outsourcing – Student Perceptions

In To provide a sense of student perceptions of the pros of outsourcing, we share a few representative quotes:

"After doing additional research, I've found that one of the main reasons for outsourcing is cost and efficiency savings. A lot of time companies have certain areas that become out of control, management and cost wise, so a good outsourcing company can help to improve these aspects of the business." (Lower cost of goods and services/ lower operational cost/cost savings)

"In recent history companies began employing the outsourcing model to carry out functions such as payroll, billing and data entry. Those processes can be done more efficiently and more cost effective by other companies with specialized tools and facilities and trained personnel. One of the advantages of outsourcing is that it provides cheaper labor. Workers in less developed countries are paid less [than] workers in well developed countries. These workers in less developed countries are often not unionized well which helps with cost cutting." (Cheaper labor)

"Expertise - it is quite possible that you can find better technical expertise by outsourcing development of technically complex projects." (Access to expertise)

The most cited cons included the loss of jobs for the local economy, quality service and customer service problems, language and culture barriers, communication issues, and employee morale. Less frequently cited also tended to be strategic in nature including the loss of control, impact on company image/branding, and security reasons. Table 3 provides a listing of *Con* categories and their frequency of being cited by students.

Theme	Description	Coverage
Loss of jobs for local economy / Economic impacts – negative	Outsourcing reduces employment avenues within the local economy.	40%
Quality and customer service problems	There may be issues related to quality and customer service due to communication barriers with offshore vendors.	20%
Language and culture barriers	Language and culture barriers can cause difficulty in effective communication with the offshore vendors	19%
Communication issues (e.g., client to vendor)	The lack of communication among the outsourcing business and its vendors due to geographical and cultural separation	10%
Employee morale	Due to the fear of losing their job to outsourcing, employee morale may go down.	10%
Loss of control	Increasing dependence on vendors and the potential loss of authority caused by transferring the control of the process being outsourced to the vendors	8%
Hurts company image (e.g., exploitation of works, negative PR)	The public image of the company may be harmed by incidences like losing too many jobs to outsourcing or exploitation of workers by vendors	5%
Security	The risk of vendors opportunistically using the vital and strategic business information shared with them	4%

Theme	Description	Coverage
Hidden costs	The expected cost savings in outsourcing may not be realized due to several hidden costs including the time and effort of negotiation, communication and management involved in outsourcing.	3%
Loss of information	Potential loss of information due to poor knowledge transfer	3%
Loss of tax revenues	Loss of tax revenues by national, state and local governments owing to offshoring	2%
Workforce of outsource vendor changes	Workforce of outsource vendors may change due to their employees switching jobs frequently which may in turn affect the project adversely	1%

Table 3 – Cons of Outsourcing – Student Perceptions

The following are a few representative student quotes related to the cons of outsourcing:

"But what companies have to realize (the cons), is that they are slowly killing the market in their own country. For every one person you hire offshore, that's one job on shore taken away from someone who is just as qualified." (Loss of jobs for local economy)

"I'm sure I don't need to say that taking jobs from the US does nothing to lower the unemployment numbers. One negative that may not be so obvious is the effect offshoring has on future graduates and students who may be considering entering into the technology field." (Loss of jobs for local economy)

"Customers may not be handled in the way you want and management can make decisions that you do not approve of. If you want total control then do not outsource. Another disadvantage is that a company can lose customers. Some employees would rather speak to an American [than] someone overseas. If a company outsourced a function that used to be done on site, some customers will lose connection because the company no longer does it themselves." (Quality and customer service)

"Manpower - You cannot just set a requirements document on the table and expect that the project will get done within time and budget constraints, it is not uncommon to devote more personnel to managing off-shored projects and there is also a great probability of increased frustration and stress on architects and project managers as there may be language and communication barriers and time differences of 12 hours or more." (Hidden Costs; Communication issues)

DISCUSSION

From our literature review and our analysis of student comments, we found that most student comments are anchored on a few of the basic pros or cons of outsourcing that were identified in the early days of outsourcing (e.g., cheaper labor) or on categories and concepts that are at a more macro level (e.g., impact on the economy). Many of the pros and cons of recent trends of outsourcing were not mentioned and are apparently not on the radar of many students. In fact, many students are primarily concerned with the overall economic impacts of outsourcing (i.e., job loss in the US, job gains in developing countries, etc.). The students did not demonstrate a realization of the impact on the skills that will be required of them in their future as IS professionals. The appendix contains tables that illustrate the mismatch of student perceptions and recent trends of outsourcing.

In addition to teaching foundations and basic principles of MIS, we suggest that as IS educators we need to prepare our students for change, specifically changes in the roles of IS professionals that are directly impacted by IS outsourcing. We suggest that curricula need to focus on demonstrating outsourcing as a strategic reality that will impact students in their future roles as IS professionals. Further, students need to understand the various forms of outsourcing including the fact that one-to-many outsourcing (80% done as part of a framework and 20% customizable) is increasingly popular (Pring, 2010) over one-to-one outsourcing. Enterprise architecture courses need to be integrated into the curriculum and need to focus on managing a diverse portfolio of applications that may be largely cloud-oriented. Recent trends in outsourcing, along with advances in technology and other changes in the marketplace, impact the skills that IS professionals need to be effective in their roles. Students must be prepared for the changing nature of roles. We suggest that as IS educators we systematically

incorporate exercises, activities, and discussions around the skills required to enact these roles. Table 4 captures the impact of the recent trends of outsourcing on IS manager roles and the skills that support those roles.

Impact on IS Manager Roles	Required Skills for the IS Manager
Big Picture Thinking	Integrate multiple external services into existing IT infrastructure
Process Orchestrator	Skilled at enterprise architecture, process integration, workflow integration, data management, process integrity
Relationship Manager (Multi-vendor management)	Interpersonal skills, leadership skills, cultural and geographic competence (political, etc.) Skilled at service selection processes
Development Agility (programmers)	Embracing knew programming languages, platform knowledge, web standards, when creating enterprise architecture. Expertise in mobile technology Increased importance of understanding end-user needs and expectations
Legal, Regulatory and Compliance Management	Knowledgeable about legal compliance issues across national boundaries
Contract Management	Understanding of contract implications among multi-vendor relationships
Security Management	Ability to develop new security measures quickly across a variety of IT platforms, locations, etc.

Table 4 – IS Manager Skills

CONCLUSION

Companies outsource for a variety of reasons and the process of outsourcing is not without its challenges. Outsourcing is a reality for most companies. Over the past few decades, the nature of outsourcing itself has changed. Single source vendors are less common than multiple-vendor outsourcing solutions. The trend toward utilizing cloud computing will likely continue into the foreseeable future. From our research, we found that student perceptions related to outsourcing are misaligned with current trends. Many students anchor to a limited number of concepts that may not be representative of today's outsourcing landscape.

IS managers, and students who may one day become IS managers, must acquire knowledge about the changing landscape and also must acquire/refine skills to support big picture thinking, orchestration of processes, relationship management, development agility, legal, regulatory, and compliance management, contract management, and security management. From our discussions, too few schools have IS curricula that teach these concepts to the next generation.

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APPENDIX A

Theme	Early	Middle	Recent	Student Perceptions
Access to better processes (documentation, methodologies)		X		
Access to expertise	X	X		X
Avoid cost of keeping skills and technologies up to date				X
Beneficial to outsourced economy				X
Cheaper labor	X	X	X	X
Competitive advantage		X	X	X
Constant flow of information between inter-organizational partners			X	
Ease of Access			X	
Focus on core competencies	X	X	X	X
Globalization/New trade relations				X
Increase capacity / scalability		X	X	X
Increased agility			X	
Increased flexibility		X	X	
Increased mobility			X	
Increased productivity				X

Theme	Early	Middle	Recent	Student Perceptions
Lower cost of goods and services/ lower operational cost/cost savings - Economies of scale	X	X	X	X
Round the clock operations		X		X

Table A1 – Pros of Outsourcing – Comparison of Time Periods and Student Perceptions

Theme	Early	Middle	Recent	Student Perceptions
Communication issues (e.g., client to vendor)	X	X	X	X
Cost of converting to outsourcing	X	X		
Data integration difficulties			X	
Difficulty with KM and data mining across multiple sources/platforms			X	
Disaster recovery/backup concerns		X	X	
Economic impacts - negative				X
Employee morale				X
Forces reliance on specific platform/technologies			X	
Hidden costs		X		X
Hurts company image (e.g., exploitation of works, negative PR)				X
Increasing levels of dependency on outsourced vendors	X	X		
Language and culture barriers	X	X		X
Loss of control	X	X	X	X
Loss of information			X	X
Loss of jobs for local economy				X
Loss of skills and resources	X			
Loss of tax revenues				X
Multiple-vendor contract management			X	
Quality and customer service problems				X
Risk of vendor bankruptcy or takeover	X			
Security	X	X	X	X
Workforce of outsource vendor changes				X

Table A2 – Cons of Outsourcing – Comparison of Time Periods and Student Perceptions