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Teaching Case

Managing the move to the cloud – analyzing the risks and opportunities of cloud-based accounting information systems

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Abstract

The accounting industry is being disrupted by the introduction of cloud-based accounting information systems (AIS) that allow for a more efficient allocation of work between the accountant and the client company. In cloud-based AIS, the accountant and the client company as well as third parties such as auditors can simultaneously work on the data in real time. This, in turn, enables a much more granular division of work between the parties. This teaching case considers Kluuvin Apteekki, a small pharmacy business whose owner faces critical management decisions on how to embrace this new opportunity to move to the cloud. Students are guided to evaluate the advantages and drawbacks of cloud computing in the specific context of accounting services. Also, the owner must make a set of critical decisions concerning which tasks to outsource. The accounting process comprises of several tasks and sub-tasks, adding to the complexity of the decision making problem. The main learning outcome of the case is related to the development of the skills and competencies needed in creating a strong business case for implementing IT-enabled business processes.
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Introduction

It is 6 pm on Saturday and Kluuvin Apteekki, a pharmacy in downtown Helsinki has closed an hour ago. Kluuvin Apteekki's sole owner and chief pharmacist Pia Moksi is sitting in her small office at the back of the pharmacy. Other employees have already left home and Pia has just finalized the closing routine; the weekend is finally here. Even though it has been a very long week, Pia is not in a hurry to leave. This is one of the rare moments when she has some time to reflect on what has been going on in the pharmacy during the week and think about the future. She noticed already a while ago that, in the last couple of years, moments like this have become a rare luxury.

Managing a pharmacy in the highly competitive environment of the Finnish capital was never an easy task. However, as business grew, the amount of administrative work related to the business, especially accounting tasks, became a significant burden. As she performed all the financial administration tasks herself in-house, the increased workload started to eat away at her valuable time, which should be spent on more important tasks in the management of the business.

In the past, Pia had encountered advertisements by different service providers, offering cloud-based accounting services. Recently, she attended the Pharmacy Days event where she heard more success stories on new ways of arranging financial administration from her colleagues in the industry. All that got Pia thinking, was it time also for her to give accounting services a try, and outsource the process. 'But how to do it?' A quick survey of her entrepreneur friends and a Google search for available service providers revealed a seemingly unlimited number of options, all with their pros and cons. 'How do cloud-based services work?', 'Which cloud system should I choose?', 'How should I reorganize pharmacy's accounting?', 'How do I choose a credible service provider?', 'What if it goes all wrong?'. There seemed to be more questions than answers, and very little time to think about them. All these questions in mind, Pia turns to you for guidance.

Setting the scene: Kluuvin apteekki and its accounting process

Kluuvin Apteekki is a privately owned pharmacy located in the heart of Helsinki city. The company employs 16 people, which includes seven full-time workers: two certified pharmacists (higher degree), three pharmacists, two technicians, as well as nine part-time employees: two pharmacists, a beautician, two technicians and four pharmacist trainees (see Figure 1). The turnover of the company last year was around €2.2 million.

Kluuvin Apteekki was established four years ago and has been growing ever since. In addition to the main pharmacy in the city centre, Kluuvin Apteekki recently opened another small pharmacy in the district of Merihaka (Figure 2), which employs one of the certified pharmacists and contributes €419 thousand to the turnover.

The pharmacy business in Helsinki is very competitive and at the same time, highly regulated by the state. Prescription drug sales and marketing are tightly controlled, and so are the other aspects of the business, such as the location of the pharmacies, their density in particular areas as well as the number of stores each company can own simultaneously. All this leaves limited space for creating competitive advantage. Thus, Kluuvin Apteekki always tried to stand out by offering exceptional customer service and by organizing clever sales campaigns for items not regulated by state (e.g. beauty and personal-care products). In addition, Pia has paid special attention to administrative efficiency to keep operation costs down.

Accounting process in Kluuvin Apteekki

The overall accounting process in Kluuvin Apteekki consists of five main groups of tasks: *sales, purchases, payments, reporting and payroll.* Each of these groups consist of three–six tasks that need to be completed, which add up to 22 accounting tasks in total. Table 1 provides a concise description of each group. The list of all tasks is presented in Table A1, Appendix.

Even though the tasks are essentially the same across different companies, there is no silver bullet for accounting related problems as the complexity of each task can vary greatly from company to company (see Figure 3 for an illustration of the generic accounting process in a Finnish SME). Each accounting task has its own specifics, and depending on the company context, it may require a different amount of information, workload, or expertise. For example, for a company with one or two permanent employees, the processing of the payroll can be a non-issue, as the process would be mostly the same every month. However, for a company employing tens or even hundreds of part-time workers with fluctuating work shifts and high employee turnover, the process can become very complex.

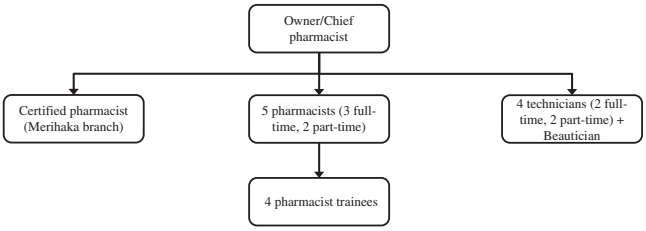

Figure 1 Organizational structure at Kluuvin Apteekki.

Pia Moksi is no stranger to the pharmacy administration with experience of nearly 20 years; first as a pharmacist and an administrator of a pharmacy in a small town in Eastern Finland for 15 years and then the last four years as the owner of Kluuvin Apteekki. She knows the ins and outs of the business. Therefore, at the start, she made a decision to do all of the accounting tasks herself in Kluuvin Apteekki. This made a lot of sense as Pia has a rich experience of dealing with pharmacy accounting under her belt as well as tens of hours spent on self-education, accounting courses, and seminars. Transferring all this expertise to an employee seemed like a huge task with an uncertain outcome.

Pia uses a number of information systems in order to deal with the tasks. In addition to the widely used Microsoft Excel, Pia has acquired software specialized for pharmacies in Finland to manage product, client and supplier registers, and to keep track of invoices. Even though Pia is familiar with electronic banking, the effort to digitize the invoicing process has not been successful. Last year, all of the 630 outgoing sales invoices were sent in paper by traditional mail, and out of the 840 received purchase invoices, 92% were received as paper, 5% were as email attachments and only 3% as structured e-invoices.[1] The reason is that Kluuvin Apteekki is a small player on the market, with very little influence on either suppliers or buyers to persuade them to switch to e-invoicing. Big suppliers usually enforce their mode of invoicing to smaller buyers, as well as their own information systems to process them. The pharmacy business is regulated and there are very few suppliers to deal with, thus Kluuvin Apteekki does not always have an alternative. On the positive side, the suppliers remain unchanged throughout the years, making the processing of their invoices relatively easy, once the invoicing method is adopted.

Payroll processing in Kluuvin Apteekki is quite complex as nine out of the 16 employees work part-time. On average, part-time employees work three six-hour shifts per week. However, this varies somewhat depending on the workload and availability of workers. Therefore, Pia has to record hours performed by workers every day. State legislation and collective agreements in the pharmacy industry also oblige employers to keep track of things like overtime work, public holidays, evening hours, and employee experience. These need to be factored in when paying salaries. Irregularities such as sick and maternity leaves add to the administrative burden, as they have to be processed accordingly. The payroll is also very sensitive to inaccuracies, as it deals directly with the employees' pay checks. Unpaid hours or missing overtime pay may cause tensions very quickly and, therefore, would require swift action to minimize the damage to employee morale.

On one hand, tasks related to reporting are less frequent than any other process in accounting. On the other hand, they are the most difficult and complex to process. Books need to be closed in the end of each financial period and everything has to be checked thoroughly. Errors in the reporting process might have far-reaching consequences and, therefore, Pia considers them to be associated with high risk. For example, calculations have to be done carefully in order to deduce the right amount of tax to be paid. Errors in annual reports may also lead to heavy fines from the tax authorities. Apart from the mathematical precision and attention to detail, reporting requires good knowledge of the tax regulations and a vision related to the financials of the company, as those allow the

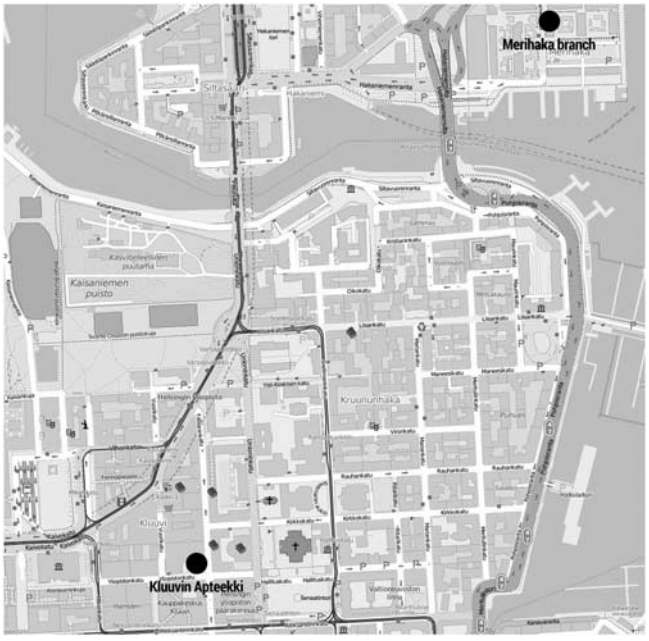

Figure 2 Kluuvin Apteekki locations in Helsinki. © OpenStreetMap contributors.
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company to efficiently invest its income to the development of the business and minimize the amount of the taxes paid. Moreover, tax regulations change from year to year and, therefore, Pia thinks that the person doing to the reporting process needs to be trained yearly to keep up to date on these changes in tax legislation.

Accounting services in Finland

The market of outsourcing financial administration is highly competitive in Finland. At the moment, more than 4000 independent accounting companies offer their services, and there are more than 150 information systems that help companies to accomplish the task. A few of those systems are cloud-based accounting information systems (AIS), a new breed of systems that offer the whole service and all functionalities over the Internet. Many cloud-based AIS also connect their system with third party digital services from banks and authorities, making it easy to conduct transactions and government reports electronically. The software providers usually operate through the accounting companies that sell the software forward to their customers bundled together with the accounting services (see Figure 4). For this reason, the software providers accentuate the features that allow for simultaneous work on the data by multiple parties (such as the accountant, the client company, and the auditor), paving the way for more efficient outsourcing arrangements. While such a set-up enables the client company to smoothly move from one accountant to another if needed (provided they work with the same cloud system), client companies become highly dependent on the of cloud service provider.

Cloud computing

For some time, Pia has been considering to reorganize her accounting process. While searching for information on alternatives, she came across the concept of cloud-based AIS, which, at the same time, intrigued and puzzled her. According to the local vendors of cloud-based AIS, their systems made accounting easier by greatly automating the process, integrating all the company data into one service, and allowing its users to receive the information in real time. What is more, these cloud-based accounting information systems also allowed their users to outsource accounting processes in a flexible manner. 'Because everything is on the Internet, it is all very flexible. You can freely choose the tasks you want to outsource and, at the same time, maintain control over the process, thanks to the real-time features provided by the system,' the representative of the accounting company tried to comfort Pia, noticing a skepticism in her look.

All this sounded very attractive, but Pia did not want to take anything at face value. So she decided to find out more. She read some research papers on cloud and they informed Pia that cloud computing refers to the information technology service model, where hardware and software services are delivered on-demand to customers across distributed IT resources and network in a self-service fashion, independent of the device and location (Motahari-Nezhad *et al.*, 2009; Marston *et al.*, 2011). Also, she learned that cloud has three service models. First, Software-as-a-Service (SaaS) model provides on-demand, ready-to-use software over the network to the user, familiar examples being consumer products such as Dropbox and Google Docs. Second, Platform-as-a-Service offers users a capability to deploy their own software or third party software compatible with the cloud provider's environment. Third, Infrastructure-as-a-Service provides only fundamental resources, such as computational power, networking and storage (Figure 5).

In addition to the service models, Pia discovered that cloud has different deployment models. A private cloud is a secure solution that assumes that the implementation of all layers of cloud (infrastructure, platform and software) stays within the company IT. While this solution offers high levels of control over the service, security, and privacy of the data, it is also expensive as the company takes all the responsibility of implementation and maintenance. A public cloud model, on the other hand, assumes that services are deployed and maintained by the cloud provider within its own infrastructure. This solution requires relatively little investment and offers full benefits of scalability, as the provider usually possesses powerful IT resources that are able to accommodate the fluctuating demand of customers. Caveats of a public cloud include issues with security and privacy, as customer data moves to the servers of the cloud provider. Users of a public cloud also become highly reliant on the provider. For example, if a public cloud-based service went offline, it could potentially paralyze the business of a customer, the latter being powerless to do anything about it. There is also the middle option of a hybrid cloud model, which combines parts of a private and a public cloud. The idea of a hybrid cloud is to provide control on crucial parts of the process, while allowing public cloud services to deal with routine and computing intensive tasks. However, a hybrid cloud model also has its own downsides, manifesting in the complexity of the service arrangements and contracting. It also requires a significant effort to set appropriate policies to avoid security breaches and leaks of data between the public and private part of the cloud service.

Table 1 Groups of accounting tasks at Kluuvin Apteekki

Group of tasks	*Description*
Sales	Sales represent a detailed itemization of sales made, presented in date sequence. It may also contain credits issued that reduce the amount of sales (e.g. for products returned by customers). The information in a sales ledger can be quite detailed, including such items as the sale date, invoice number, customer name, items sold, sale amounts, freight charged, sales taxes, value-added tax, and so on.
Purchases	The purchase ledger is a sub-ledger in which all purchases made by Kluuvin Apteekki are recorded. The purchase ledger shows which purchases have been paid for and which purchases remain outstanding. A typical transaction entered into the purchase ledger will record an account payable, followed at a later date by a payment transaction that eliminates the account payable.
Payments	Payments refer to all monetary transactions between Kluuvin Apteekki and third parties for the goods or services that are purchased by the company or additional fees and payments due.
Reporting	Accounting reports are referred to as periodic statements, which show the financial position of a firm at a given time or over a stated period, resulting from its business transactions and operations.
Payroll	Payroll refers to the amount paid to employees for services they provided during a certain period of time and is crucial to the companies as payroll and payroll taxes can significantly affect the net income of the company.

The main value of cloud computing for businesses derives from offering resources in an economical, scalable and flexible manner, which are affordable and attractive to IT customers and investors (Motahari-Nezhad *et al.*, 2009). It can be argued that the promising business benefits of the cloud resulted in high expectations.

Again, all this sounded interesting and promising if sometimes unclear and confusing. As a result of her research, she identified three systems that seemed to be worth considering (see Table 2). Pia evaluated three systems highlighting the important dimensions, such as user interface, integration capabilities, modularity, and price.

The great promises, presented by cloud vendors, were backed up with clever jargon, numbers, and overall excitement. However, as Pia is looking for *the* solution for her business, she cannot tolerate any uncertainty. ' "Good enough" is not good enough for me,' thought Pia. Therefore, she decided to go beyond abstract benefits and concentrate on the concrete features of cloud computing.

Cloud computing is associated with lower costs as the whole service runs on the computers of the service provider. Also, cloud-based systems are delivered as SaaS, which means that there are no costly investments into the software licenses, and the user can pay for everything based on usage. However, Pia has already invested in her software and any payment for the new system seemed like an additional cost. The 'pay per use' -model, offered by some systems, was also suspicious to her as she already had to deal with possible hidden costs from accountants, and this seemed like another possible source of such costs. 'You need to think the long term,' said the representative of the accounting company, 'The demand for accounting services for a small business like you varies greatly and, therefore, paying for it per use would end up in large savings in the long term compared to the fixed fee.' Still, to Pia it seemed like an additional problem of crafting and managing service-level agreements with both the accountant and the software provider, while constantly expecting unpleasant surprises.

The other advertised benefits of the cloud systems seemed to be centred on scalability, flexibility, and accessibility. Vendors of cloud-based software claimed that their systems could integrate all the company's processes in the same place and allow access 24/7 from any Internet connected device. Furthermore, because the data does not have to be stored and processed by the clients' computers, services can be rearranged in real time. This, in turn, adds to the flexibility of the process: Pia may decide, for example, to process more invoices herself without changing the agreements with the accountant. This meant that Pia could opt for minimal services at the beginning, but scale her usage as needed any time. All these benefits related to scalability and flexibility sounded very exciting. Pia thought that with the cloud-based systems it would be much easier to expand her business and open new pharmacies, as the software required for operations will be already accessible from day one. However, at the same time she had mixed feelings. Powerful data centres, application integration, virtual business environments … Is all this still suitable for a small company like hers? Does she really need all these capabilities, which – no doubt – come at a price? Are there some benefits to cloud systems that are less ambitious but would be extremely helpful for her particular business?

Accessibility was, on the other hand, more tangible and extremely interesting for Pia. 'Just imagine I could be on top of things from anywhere,' thought Pia. With the cloud system, she would be able to work together with her accountant from any location as long as she has an Internet connection. She could check the status of her company in real time, using the software at conferences or even at home in her cosy armchair instead of spending long winter evenings at a closed pharmacy, after all her employees had already left home. Currently, Pia's system does not allow for the real-time inclusion of accountants and auditors in the work processes. In the current set-up, the data is not accessible to multiple parties simultaneously, and, therefore, it would need to be manually sent between these parties each time changes are made in the system.

Accessibility also solved an important issue of control for Pia. Her main concern with the outsourcing of accounting was her inability to check what the third party accountant does. 'Now, with this new cloud system, I can actually outsource the accounting, but at the same time keep my hand on the pulse, by being able to check each and every transaction from my phone, or tablet at any given moment,' thought Pia. However, with this luxury, there came a number of problems. 'This means I have to share all my data with the software provider,

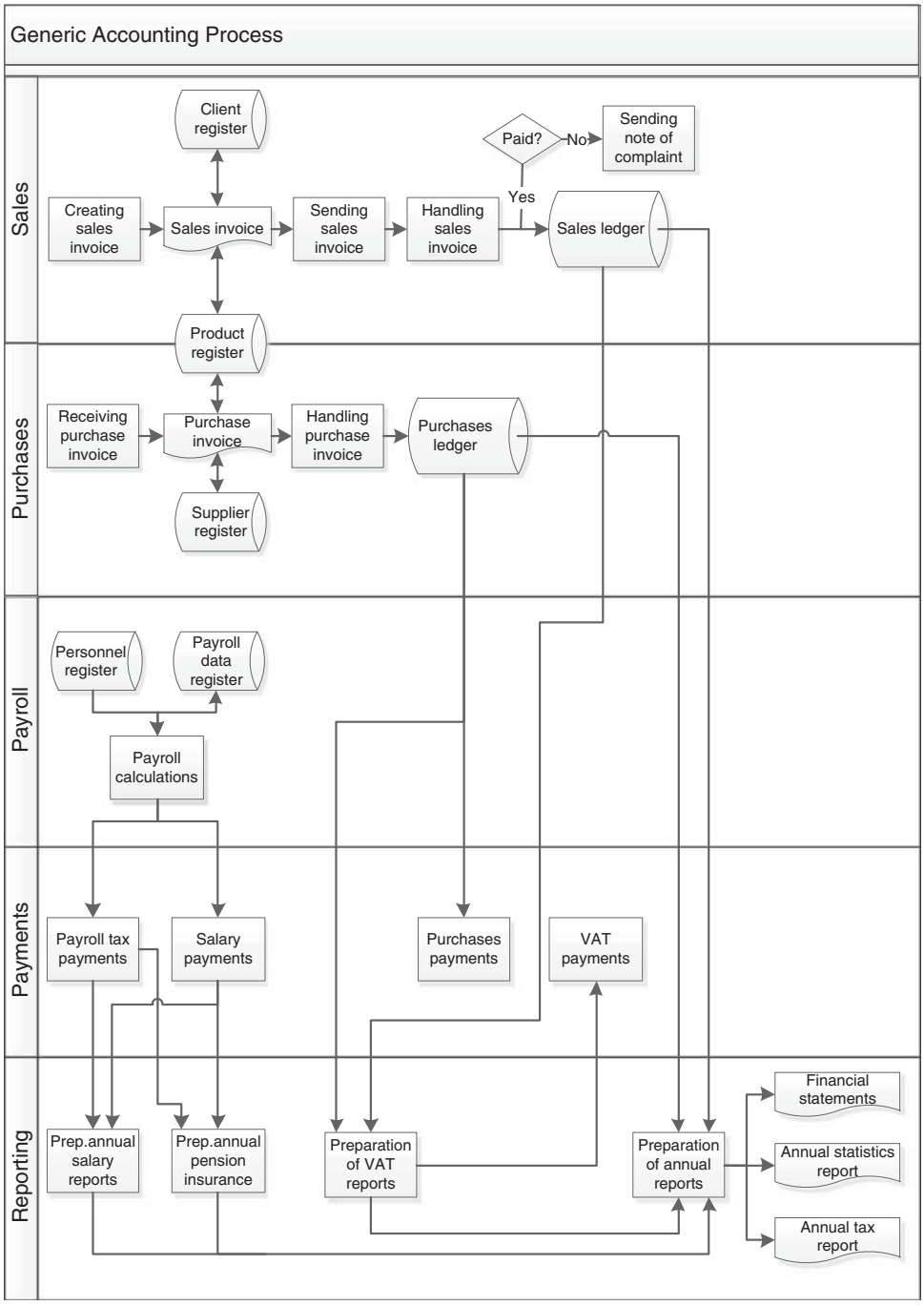

Figure 3 Generic accounting process in Finnish SMEs.

which, from all I know, can be on the other side of the world.' Pia has been following the news, and privacy and data security seemed like a big deal with all these Internet services. Everything from companies misusing customer data to governmental spying seemed to be present, which was not reassuring Pia. 'News are news, but is it really worth it to put the privacy of my business data at risk?' she thought.

'And what happens if I want to change my software provider or accountant?' Pia wondered. The latter, according to the representative of accounting company, was easy: 'All the data and tools are in the cloud, so you can leave us at any given moment.' However, the fact that 'all the data and tools are in the cloud' was troubling Pia. The prospect of being locked-in into one software provider was not very appealing. 'But what if I want to change the software? What if the software provider goes out of business? Would it be at all possible to move my stuff to the other vendor?' Pia had not got proper answers to these questions from her potential software vendors.

Pia was also worried about cloud-related integration issues. Cloud-based services are not immune to the problems related to integration with existing databases, software and other cloud services (Willcocks *et al.*, 2013). Pia after all, had existing accounting arrangements and information systems employed to manage them. How would those systems and

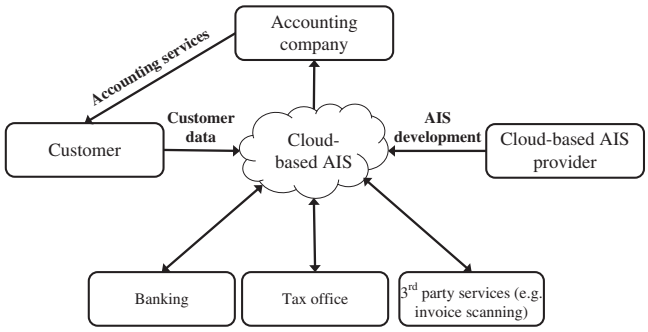

Figure 4 Structure of outsourcing relationship in cloud-based accounting information systems.

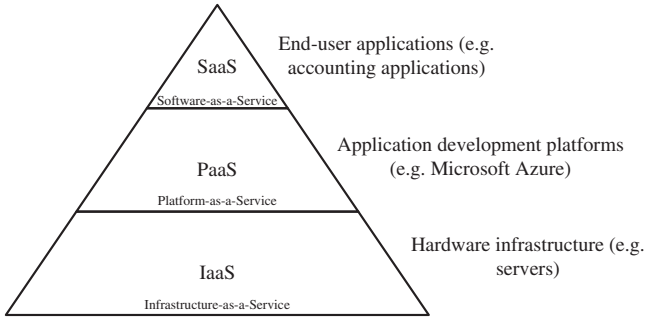

Figure 5 Cloud service models.

data work with the new cloud systems? Would there be some migration issues? What would be an impact to her business?

After analyzing the benefits and risks of the cloud, Pia had mixed feelings about the cloud and outsourcing of accounting tasks. Are the benefits worth the risks? Or do the risks of both outsourcing and cloud overweigh the benefits they can provide? Which provider should Pia choose? Does cloud and outsourcing suit her company in general?

Process arrangements in cloud

Reflecting on the current state of affairs for some time on that Saturday evening, Pia started to realize that she needed to act soon. Maintaining the status quo in this situation could jeopardize the growth of her business as well as have a damaging effect on the efficiency of operations. However, Pia realized that adopting a cloud-based AIS was just the beginning of a journey. Technology is an important piece in a jigsaw, but it is not all that matters. Without appropriate process reorganization, Pia's migration to the cloud would have limited positive effect, if any.

Throughout these 4 years, Pia has several times been coming back to the idea of using external help to deal with accounting. The conversations during the Pharmacy Days earlier this year motivated her to come back to this question once again. However, this time she decided to go one step further. Pia conducted an Internet research of outsourcing options, surveyed her friends and colleagues with outsourcing experience, and even met representatives from a couple of accounting companies offering their services. In spite of the rich information Pia received as a result of the effort, the decision seemed to be more complex than ever. For one, Pia was now certain that outsourcing is not a binary decision with only *yes* and *no* answers. Contrary to that, the current landscape of accounting outsourcing, offered a variety of options. Some of the people she talked with, outsourced most or all of the accounting, while others had delegated just the payroll and reporting to the third party. Yet another contact admitted that he had settled for outsourcing invoicing, performing the rest of the tasks himself. What made matters worse was the fact that everyone claimed that their way of arranging tasks with their accounting service provider was the best balance between the potential risks and benefits.

As a result, Pia decided to focus on her own situation and hope that the right solution would emerge in the end. The main reason she considered to outsource in the first place was the desire to have more time to concentrate on the core business of the pharmacy.

One of the biggest promises of outsourcing is the ability of the company to concentrate on core competences. Focusing on core competencies, in turn, frees up resources to be used more productively. This benefit was clear to Pia. She herself felt that she could have been investing so much more time on thinking about growth opportunities and strategic choices for her pharmacy rather than spending time on accounting processes. Pia also remembered how much outsourcing helped some of her colleagues to concentrate on management and strategy development.

'And besides, you get access to the professionals, they make their living from accounting, they surely are better at these things than us, pharmacists,' Pia recalled the comment from Sami, a fellow pharmacy owner she met during Pharmacy Days. On one hand, this sounded logical, as she did not have, after all, a formal accounting or business education and her experience, however long, was limited to her particular pharmacy. Therefore, a professional accountant should provide a quality service, and perhaps one or two tricks that would improve the efficiency of the process. On the other hand, doing accounting on her own, she is in control of the situation. Can she trust an external accounting company with such critical processes just like she trusts herself? 'It takes me a long time to make sure there are no inaccuracies and errors. In other words, will some stranger have the same commitment to my business as I do?' Pia thought. Besides, she heard some stories from her friends who had to change their accountants because of the fact that the service provider had been incompetent or irresponsible.

Another big motivator for outsourcing seems to be cost reduction. 'Accounting takes a lot of my time, and I am too expensive,' thought Pia. 'But, what kind of cost savings are we talking about?' Pia asked herself trying to understand how this benefit would be relevant to her pharmacy business. Estimating the costs of outsourcing seemed to be a difficult task. While on the surface everything was clear, her meetings with accountants left Pia suspicious. There were fixed fees, like software licenses and a basic monthly service fee, but there also seemed to be a potential for some hidden costs. 'Well, it is difficult to say like that, it all depends on the workload, like the number of invoices your company needs to process, or whether it is the end of the financial period,' answered a representative of one of the accounting companies to Pia's question about the precise cost of the service. 'But, the fee is always fair and our clients are always happy,' he added. Pia thought, 'Maybe I am expensive, but at least I know *how* expensive.'

The above mentioned risks seemed potentially catastrophic, in case they materialized. Her pharmacy business is small and

Table 2 Viable cloud-based accounting information systems available to Kluuvin Apteekki

	System 1	*System 2*	*System 3*
System user interface	User-oriented (high level of usability)	Function-oriented (highly efficient interface)	Function-oriented (highly efficient interface)
Target user of the system	Client company	Accountant	Accountant
Connection to accounting service	Unbundled from accounting services	Unbundled from accounting services. Optional services from partner network.	Tied with accounting services
Customer-specific customization	Limited to standard settings	Limited to standard settings	Moderate customization upon request
Integration with third party enterprise systems	Integrated with partner apps	No third party integration	Limited integration upon request
Integration with third party reporting and payment services	Limited	Yes	Yes
Modularity[a]	No	Yes	No
Years in business	9	14	30
Provider origin	International	Finland	Finland
Price	Starting at €20/month, +transaction fees[b] +accountant fees[c]	Starting at €69/month, +transaction fees[b] +accountant fees[c]	Starting at €150/month (no transaction fees, package includes 2h of accounting services)

[a]Ability to use only certain modules of the system
[b]Transaction fee is €0.95/transaction (charged for sales and purchase invoices and monthly salary payments)
[c]Accounting services typically cost approximately €65/h in Finland
Typically, an accountant spends 5 min per invoice (sales or purchase invoice including payment and VAT calculations), 7 min per employee payroll calculations (including salary payment) per employee per month. In addition, an accountant spends around 3 h on annual reports once a year.

Pia would not be able to afford paying increased service fees. In addition, accounting companies have multiple customers, many of which are much larger and potentially more interesting than her pharmacy. How would she ensure that an accounting service provider would take her interests into account and value their relationship? How can she ensure high level of quality and anticipate the increase in rates? Surely, a service contract would be made, but Pia is no lawyer, and fine print in the contract may always turn against her. 'It was completely her fault and the law was on our side, but what could we do? Going to the court would have been more time consuming and expensive. So we just switched to another firm,' said one of Pia's colleagues during a recent phone conversation.

All these questions were heavily weighing on her mind. If after the Pharmacy Days she was quite excited about the whole idea of outsourcing, after considering its risks, she was not at all sure anymore if this is the right decision. 'But after all, it can't be that bad, my friends and competitors have made it work,' thought Pia and continued 'And I can really use all that free time I could get from getting rid of accounting.' She could also start slow, try outsourcing some processes and continue others by herself for a while. But how to choose which processes to outsource then? On the basis of what? What would be the optimal combination, or timeframe? What outsourcing arrangements would optimally utilize the cloud?

Discussion questions

Pia is at a crossroads with important decisions that will affect the fate of her whole company. She needs to find answers to the important questions and define what would be the best solution for her company. She turns to you as a strategy and transformation consultant to help her in analyzing the accounting processes at Kluuvin Apteekki and to determine the course of action that she as the owner should take regarding these processes.

Specifically, she wants you to answer the following questions with solid arguments:

1. Which cloud-based accounting information system should Pia select and why?
2. Should Pia be worried about possible lock-in with either accountant or system provider?
3. How should Pia mitigate the possible data security risks?
4. Is price an important factor when choosing the system?
5. What is the optimal division of work between Pia and the accountant? Should Pia outsource all the accounting tasks, use selective outsourcing, or keep all tasks to herself? Evaluate each accounting task on their suitability to outsourcing in the cloud context. Use Table A1 provided in Appendix and discuss the implications of your choices.
6. How to ensure a good fit between the selected system and the work arrangement?
7. What are the transaction costs incurred by the decision?
8. What about long term strategy? Reflect on the implications of your choices in the future.

Note

1 Structured e-invoice refers to an invoice that is transmitted electronically in a structured format. A structured e-invoice may

be in EDI (electronic data interchange) or XML (extensible mark-up language) formats. The essential difference between structured e-invoice and non-structured invoice is that a structured e-invoice is machine-readable.

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Appendix

Table A1 Accounting processes in Kluuvin Apteekki

		In-house	*Outsourced*
Sales	Client register maintenance		
	Product register maintenance		
	Sending sales invoices		
	Handling of sales invoices		
	Sending note of complaint		
	Sales ledger maintenance		
Purchases	Supplier register maintenance		
	Receiving purchase invoices		
	Handling purchase invoices		
	Handling purchase, travel & other costs		
	Purchases ledger maintenance		
Payroll	Personnel register maintenance		
	Basic payroll data maintenance		
	Payroll calculations		
Reporting	Preparation of balance sheet and income statement		
	Preparation and sending of VAT		
	Preparation and sending of annual salary reports		
	Preparation and sending of annual pension insurance reports		
Payments	Periodic VAT payments		
	Salary payments		
	Payments for purchases, travel and other expenses		
	Monthly payroll tax payments		