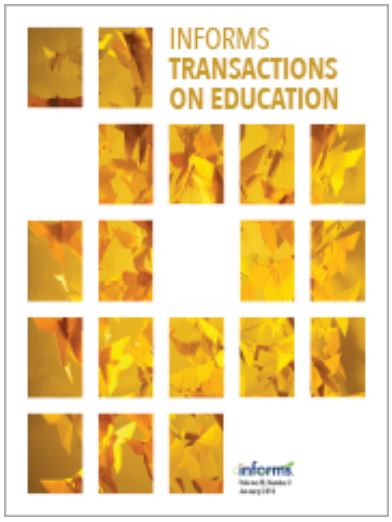

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Case

Acusis: Medical Transcription Outsourcing

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The Setting

It was a sunny Friday morning, and Ray Dyer was sitting in his office high above the streets of downtown Pittsburgh watching the gentle flow of waters in the Monongahela River. He had started the day hoping that things would wind down with the approaching weekend. Over the past two years, Ray, serving as the vice president of business development and marketing, had steered Acusis from a small start-up to a profitable player in the market for outsourced medical transcriptions.

Acusis converted audio recordings of physicians' reports into a written format for archiving at healthcare providers. Doctors dictated their reports following patient encounters such as annual physicals, laboratory report interpretations, or surgeries. Traditionally, in-house departments or physicians' assistants had done the oral-to-written transcription, but competitive pressures to reduce fixed costs and staffing levels prompted healthcare providers to largely outsource this work to U.S.-based transcriptionists in the 1990s. Inexpensive, mass-produced personal computer systems and the connectivity provided by a proliferating Internet facilitated this outsourcing.

Medical transcription experienced a further change at the turn of the century. Recently established companies such as Acusis implemented a business model of shipping the transcription work overseas to countries like India where a large supply of inexpensive English-speaking labor—conversant with medical technology—existed. New transcontinental high-speed cables allowed for fast and inexpensive Internet connections and thus permitted quick transmission times even though work was being sent overseas.

Some overseas outsourcing providers would further subcontract the transcription work—often indiscriminately and without knowledge of the client. (Domestic outsourcing companies also engaged in this practice though to a lesser extent.) The flipside, therefore, of low prices associated with global outsourcing was the lack of transparency, control, and accountability. Although quality outsourcers, such as Acusis, refrained from indiscriminately outsourcing the transcription work to "tier-two" subcontractors, they too faced the danger of getting embroiled in the underlying ramifications of this practice.

Ray looked at his to-do list for the day. A key item on his late-morning agenda was a scheduled call to General Hospital,[1] a large prospective customer in California. A contract with General Hospital could help establish Acusis as a transcription services provider on the West Coast. As Ray Dyer was pondering his next action, his phone rang. Coincidentally, it was General Hospital's vice president of procurement, who said "I know it is still early morning, but our CEO just called me. He read about the bind that another hospital is in due to transcription outsourcing and wants to call off all our discussions with you."

What had happened? The *San Francisco Chronicle* had published an article on medical transcription outsourcing two days ago. A tier-three subcontractor

[1] Name of the hospital has been changed.

in Pakistan doing medical transcriptions was blackmailing the University of California San Francisco (UCSF) Medical Center, a major hospital on the West Coast. UCSF Medical Center was unaware that its tier-one contractor was further outsourcing its work, let alone the multiple outsourcing layers it was using. The tier-three subcontractor threatened to publish confidential patient data if she was not paid the amount due to her; her "client" had allegedly refused to pay her and she had decided to approach UCSF Medical Center directly.[2]

Although isolated instances of this type might have occurred earlier, the national publicity this case generated was sending shockwaves throughout the healthcare provider industry and its medical transcription outsourcing partners. For years, budget-conscious hospitals and clinics had been outsourcing transcription work, sometimes without inquiring where and by whom the work was actually done. Afraid of being the next victim, hospitals were now frantically considering whether to pull the plug on, or at least to scale back, their outsourcing. One such healthcare provider was General Hospital.

Without a doubt, unscrupulous companies existed in the medical transcription outsourcing community: they underpaid transcriptionists, employed layers of subcontractors, or shipped work overseas while claiming to have only U.S.-based operations. However, companies like Acusis had always been transparent about their competitive edge derived from offshoring the transcription work while employing and compensating their transcriptionists in a fair manner. In this state of panic, however, many hospitals were unable to differentiate. Fear of being blackmailed, the likelihood of patient lawsuits because of compromised data, government fines for violating Health Insurance Portability and Accountability Act (HIPAA) regulations,[3] or simply stakeholder pressure was making some healthcare providers scramble for the exit. Ray realized that he may have to undertake serious strategic planning and adjustments to obviate this reaction.

Industry and Company Background

Founded by U.S. and Indian healthcare industry veterans in 2001, Pittsburgh, Pennsylvania-based Acusis was a provider for outsourced medical transcriptions. Like other entrepreneurs, they had grasped the huge potential of offshoring medical transcription services.

Offshoring transcription work had become viable following transformational developments in the 1990s that were part of the complex, diverse process of globalization. In some Commonwealth countries such as India and Pakistan, a large labor pool of skilled, English-speaking people had existed for a long time. But for decades, these economies were sealed off because of protectionism or being oriented toward the Soviet block. The end of the Cold War and economic reforms in these countries led to the opening of markets, and strengthened economic ties and increased trade with the West.

Another enabler was the exponential growth of the Internet and the installation of a global high-speed network—including in rural parts of developing countries like India—of fiber-optic cables. More sophisticated and less expensive computers made it possible for an increasing number of small businesses to exploit this global network. Furthermore, the development of advanced workflow software technology made it possible to digitize work and streamline processes within and across organizational boundaries.

Yet another change was needed for suppliers like Acusis to be successful: A change in the companies' mindsets. A strategic shift, from doing everything in-house to focusing on their core competencies, led to an increasing willingness to outsource some in-house capabilities, processes, and services. As Acusis' CEO at that time, David Iwinski, put it: "I don't know any hospital whose mission statement says 'our mission is to be typists, administrators and paperwork processors.' "

Acusis developed its business model during its incubation but enhances it continually. A sophisticated, unique workflow software called AcuSuite allowed for frictionless file processing, and the seamless transmission of work between transcriptionists, editors, quality inspectors, and clients' databases. More than 50 software engineers in India were constantly refining AcuSuite: a fact supporting Mark Munson's (then the vice president of customer satisfaction) assertion that "We are a technology-driven company." Privately held, Acusis was largely free from the short-term pressure and quarter-to-quarter thinking that bridled most publically traded competitors.

Acusis' customer base and revenues grew rapidly, and it won a number of awards including being recognized as one of the top-100 fastest growing companies in Pittsburgh several times in the 2000s.[4] After two years of operations, Acusis had a portfolio of several dozen customers, mainly in the northeastern part of the United States. Interestingly, the company had not lost a single one of its customers so far. This was invaluable, as landing customers was not easy given the competitive nature of the business. Acusis

[2] The subcontracting arrangement was complex with multiple levels of subcontractors involved (see, e.g., Lazarus 2004).

[3] Enacted by the United States Congress in 1996, HIPAA introduced stringent standards, which applied to all healthcare organizations, for information handling and patient's privacy.

[4] http://acusis.com/acusis-advantage-awards.html (accessed on March 12, 2013).

usually had to court a prospective customer for several months, often up to a year, before reaching a tentative agreement. The initial contract listed just the terms of how the transcription would be done, without any firm volume commitments. The signing of the initial contract was crucial, but in some ways, it was just the beginning, "with the heavy lifting required for setting volumes and maintaining the relationship yet to come," as Ray put it.

See Supplementary Document A for an overview of the contract implementation process between Acusis and a new customer (available as supplemental material at http://dx.doi.org/10.1287/ited.2013.0110).

Market Overview

The global market for medical transcriptions was mostly limited to the United States for a number of reasons. First, a labyrinth of coding and reimbursement standards and regulations led to high setup costs, and therefore required high transaction volumes for profitability. In this context, HIPAA was the single most important single piece of legislation that affected a medical transcription firm's processes. (However, HIPAA also created an entry barrier into the medical transcription outsourcing industry.) Second, the high degree of interconnectedness between physicians and specialists in the United States created a demand for detailed, complex medical records.

The market for medical transcriptions was fragmented on both the demand and the supply side.[5] The United States has more than 25,000 physician groups in addition to approximately 8,000 medium- and large-sized hospitals (those with a capacity of more than 200 beds). These healthcare providers produced 100 to 120 billion lines of transcriptions each year (a medium-sized hospital easily tallied around one million lines per month). Given an average price of 10 to 12 cents per line, this resulted in a potential market of more than $12 to $15 billion annually.

On the supply side, medical transcription service organizations (MTSOs) were similarly splintered: More than 1,200 companies were active in the United States. Around 100 of them competed at a national level and the rest served only regional or local markets, often as mom-and-pop shops. The largest two providers had annual revenues of around $300 million and $200 million, respectively, indicating that the market leader had a share of roughly 2%. The fragmentation gave large customers a dominant position in supply chain relationships. Moreover, a large hospital system could work with several dozen transcription providers simultaneously: in 2008, the University of Pittsburgh Medical Center, for example, had engaged more than 100 different transcription providers.

In 2008, approximately 85% of all transcriptions were done in the United States, 12% in Asia, and the remainder was split between various other countries. Roughly one third of all transcriptions were done in-house by healthcare providers, a second third by outsourcing providers, and the remaining third were handled using a hybrid model. In the hybrid model, a health service provider covered a base amount of transcription work in-house, and outsourced spikes in demand.

Navigating this maze of a marketplace was a challenge for customers and providers alike; finding a scalable business model that could accommodate rapid growth while keeping quality high and costs low was essential for Acusis' success. In the eyes of the management, there were three avenues for business growth: increasing transcription volume from existing customers by including more departments (primarily, more specialized ones); winning over new customers; or acquiring competitors.

Acusis' Workflow Model

Acusis' Indian headquarters are in Bengaluru (formerly known as Bangalore), the nucleus of India's information technology industry. Only the overhead and management functions are located in the corporate office. Home-based transcriptionists, mostly in southern India, did Acusis' transcription work. By letting the transcriptionists work from home, Acusis saved the expense of providing and maintaining office space, and also increased the geographical base from where talent could be drawn. The transcriptionists, most of them secondary wage earners, used their own computers and Internet connections, thus lowering Acusis' capital investment and telecommunication costs. The transcriptionists were legally self-employed and worked on a contractual basis for Acusis. This arrangement gave both the workers and the company a high degree of flexibility, permitting Acusis to scale the capacity to meet demand. A quantity and quality-based payment scheme was used to incentivize the transcriptionists for quick, but error-free work. (Acusis' workflow is illustrated in detail in Supplementary Document B.)

At the time of the case, the company employed approximately 400–500 transcriptionists in India. Acusis' transcriptionists were drawn from the large pool of university-educated individuals in India. In fact, many of the company's transcriptionists had some kind of medical degree (something most of their American counterparts working for the competition lacked). Correspondingly, Acusis' transcriptionists on average earned three to four times the industry standard in India, keeping motivation and retention levels high.

[5] The data in this section is based on discussions with company executives.

Although Acusis paid relatively more per line to their transcriptionists, the turnaround time and the quality of the delivered work gave Acusis a competitive edge.

Turnaround Time

The total transcription time comprises two main parts: The time between the electronic transmission of the audio file and the assignment of the transcriptionist, and the time that the transcriptionist needs to actually type the report, edit the report if necessary, and send it back. Sophisticated software assigned incoming work automatically to the most preferred transcriptionists based on a performance- and customer-based ranking system. An automatic or manual transfer to the next person on the list was done within 20 minutes if the initially intended transcriptionist was busy or unavailable. This process reduced turn-around time (TAT) significantly. The transcriptionist's work could be aided by optional speech recognition software, but technology at that time did not make this a practical alternative.

As a result of its workflow, Acusis' transcription work had quick response and high quality. To give an example: Baptist Medical Center, a hospital with 500 beds in Jacksonville, Florida, had a turnaround time of up to seven days relying on in-house transcriptionists. After the cooperation with Acusis started, the average TAT dropped to 6 to 12 hours. Likewise, the average TAT for the 400 physician Wolfson's Children Hospital decreased from 30 hours to 3 hours.

The time difference between India and the United States[6] allowed the transcriptionists to work on files while it was night in America. Mark Munson summarized this in the sentence: "We type while you sleep." By the same token, however, achieving turnaround times of less than a U.S. workday was difficult for Acusis.

Quality

Given Acusis' model of home-based transcription, it was especially important to institute proper procedures for delivering high quality. To ensure quality of work, Acusis (i) developed comprehensive hiring policies, (ii) developed appropriate metrics and processes, and (iii) continually monitored the output. In this way, Acusis paid attention to all three "production" stages: input, process, and output—just like a manufacturing organization does for quality monitoring and improvement.

Acusis followed a rigorous hiring and training process. It required at least three years of work experience, and gave applicants three transcription tests right after they had submitted their application. If applicants achieved a 98% accuracy rate in each of the three tests, they were asked to review an online company presentation, with details about compensation and benefits, and the computer hardware technology required of contractors. An interview followed if there was sufficient interest on both sides. Selected candidates were assigned to a U.S.-based mentor for a 45-day training period during which the mentor monitored transcription performance and provided weekly feedback. At the end of this probation period, trainees took another examination and received a permanent position only if they completed the test successfully.

To reduce the likelihood of transcription errors, Acusis implemented the so-called *affinity model*. This assignment model matched transcriptionists with physicians or physician practices based on several factors: the transcriptionist's medical background, experience, language prowess, speed, etc. The affinity model helped decrease some of the causes of transcription errors, such as errors due to a difficult-to-understand accent or contextual knowledge relating to a physician. Familiarity resulting from the affinity model increased the chance of "one-touch documents," i.e., producing documents that did not require any further reviews before delivery to the client.

Errors could also occur if a transcriptionist did not understand the physician because of a number of other reasons: physicians rushing, multitasking, getting interrupted, or eating food while dictating the report. Sometimes physicians made contradictory statements or added details later in the audio file, interrupting the sequence. Quality of the voice capture, background noises, usage of slang and colloquial expressions, as well as dictation speed could hamper understanding. For example, an Indian transcriptionist might not know the American expression "a ballpark number." In due course, the affinity model moderated these causes as well.

Acusis monitored quality by tracking the *EPT*, or *errors per thousand lines* for each transcriptionist every month. An error is an omission or an incorrect insertion. EPT is a composite measure that assigns weights according to the error category. For example, EPT weighs demographic errors more highly when compared to other noncritical errors. The complement of EPT is *accuracy percent*. See Appendix A for a description of the EPT and accuracy percent. Acusis had a target accuracy percent of 98% for each report. Although Acusis did not routinely report the variability in quality, a quality issue triggered the use of standard deviation to assess a transcriptionist's overall performance level.

Transcriptionists delivering sustained work performance could move up the ladder and become "editors." Editors checked other people's work, corrected

[6] Depending on whether daylight savings time is applicable or not, this difference was 9.5 hours or 10.5 hours for the U.S. East Coast.

errors, and eliminated blanks before the final report was delivered to the physician. To emphasize the importance that the company placed on error-free and timely delivery, the company had a separate vice president responsible for customer satisfaction: "Quality and customer satisfaction are of utmost importance in our organization," according to Ray Dyer.

By default, a 3% to 7% random sample of all documents per transcriptionist was selected for quality assurance testing. In addition, a so-called "doubt file specialist" added another review layer. This was usually done only for certain customer accounts or document types, etc., to minimize the risk of litigation.

Capacity and Pricing

Acusis' standard contractual agreement committed to turnaround times and quality levels based on volume of work. For example, under normal circumstances, if more than 3% of all transcribed lines were not submitted on time in any given payment cycle (there were two payment cycles per month), the customer was not charged for the transcription. A spike in client demand that exceeded 15% was considered unusual, and if this was the case, the "no-payment clause for 3% delay" clause did not apply. Unlike many other service providers, Acusis gave a TAT and quality guarantee in writing; see Appendix B.[7] Moreover, Ray indicated, "We proactively review/audit our quality and TAT delivery performance every month for each client, and automatically initiate credit action if needed per the service guarantee. Historically, though, this has seldom been done as we perform at higher standards than outlined in our guarantee."

Acusis used these payment terms to compute its capacity level. Following an industry standard, the company used a 30-day-moving average plus 15% to calculate the necessary capacity. This was done for each individual customer account.

The pricing was done according to the TAT. Customers could choose between five different TAT brackets: two, three, four, 12, or 24 hours—with the price per line increasing the shorter the promised turnaround time. Acusis prioritized the so-called short turnaround time (STAT) jobs, i.e., jobs, such as, emergency or x-ray reports, which had a turnaround time of less than 12 hours.

When Acusis started in 2001, a 24–48 hour turnaround was the industry standard. But over the years the average turnaround time demanded by customers was pushed down gradually, resulting in an average TAT of 24 hours or less. Some customers (e.g., emergency rooms) even asked for a 15 minute TAT. However, Mark Munson felt that such a low turnaround time was not yet economically feasible.

[7] http://acusis.com/acusis-advantage-service-guarantee.html (accessed on March 12, 2013).

Security and Transparency

For data security, the transcriptionists' computers were password protected; in addition, Acusis proprietary software, AcuSuite, required a separate login. All transferred data used 256-bit encryption on a virtual private network, all locally stored data was encrypted—and wiped from the hard drive periodically. Acusis conducted regular audits of contractor's PCs, both physically and remotely, to confirm the security of data.

In addition to these measures, Acusis management frequently conducted visits to its facilities in India. Regular focus groups with customers ensured transparency and active communication, adding to Acusis' unique market approach.

The Challenge

After experiencing business growth, Acusis was now faced with the *San Francisco Chronicle* situation. Ray Dyer classified healthcare providers into four categories based on their reaction to the news. Some current customers would continue to have confidence in Acusis and its current model, and probably be willing to wait out the storm. Other current customers might get worried after reading the article, and start looking for alternatives. Acusis would need to alleviate their fears to keep them from leaving. The third category, an important one from a growth perspective, consisted of healthcare providers like General Hospital. Such prospects might discontinue talks with Acusis because of pressure from the media, patients, and other stakeholders. The final category of healthcare providers was currently unwilling to even consider overseas transcription, and mandated domestic transcription. The *San Francisco Chronicle* article might further solidify their belief in the dangers of offshoring. In Ray Dyer's words: "Privacy and security, that's all people talk about now."

As Ray got off the phone, trying to calm his caller from General Hospital, he started to ponder. His 32 years' experience in the healthcare industry did not have a single parallel. How should Acusis react? What should Acusis do to cope with the new development?

His chief concern was future growth: How could he retain current customers and keep Acusis attractive for potential clients? How could Acusis maintain its cost advantage over its domestic competitors? How should the company be structured? What would the costs be of any changes in the short and in the long run?

In short, what business model was the right response to the altered market situation?

Possible Scenarios

Ray Dyer felt that it probably would not be difficult to keep loyal customers who had seen the benefits of working together with Acusis and who understood

the quality work the company was doing. A reassuring communication would likely suffice.

The second and third categories were tougher to deal with: What to do with the doubtful, skeptical, distrustful current and potential customers? Of course, enlightening them about Acusis' solid internal processes, security, and quality standards was necessary. But the fact that Acusis transcriptionists in India were home based and working on their own personal computers showed some unfortunate similarity with the blackmailing case in Pakistan. To eliminate the underlying security risk, Acusis could do the transcriptions in a controlled environment, solely on company-owned and maintained computers, limiting the chance of confidential data theft. Setting up such an infrastructure and hiring new transcriptionists would be costly, time consuming, and disruptive.

Another possibility was to strategically partner with a company in a country such as the Philippines, a former colony of the United States and Spain with English (along with Filipino) as the official language. As in India, some medical transcription companies in the Philippines were HIPAA-compliant—meeting U.S. standards for data privacy and security. A strategic relationship would entail having the partner use Acusis' technology and Acusis being directly involved in the recruitment of the Filipino employees. The option of transcription done exclusively in such a controlled, certified work setting would reassure some customers and build a bridge toward continued cooperation and growth.

The last group of healthcare providers—the "naysayers"—would be the most difficult to satisfy. Acusis faced significant hurdles including potential opposition from hospital board members, rewriting of terms and conditions for business conduct, and legal obstacles for outsourcing medical transcription work overseas. By doing business as usual, Acusis would automatically be out of contention with this potential customer base. The compromise of having the transcription work done in a controlled setting would be irrelevant for these hospitals and clinics as long as the work was done outside the United States.

The solution for this group could very well be the most dramatic alteration of Acusis' business model to date: offer U.S.-based transcription work. This alternative might appeal to some existing customers as well. Implementing this option, however, would be time consuming, unless Acusis acquired a U.S.-based competitor or a subcontractor with U.S.-based transcriptionists. Customers could then opt for all or a portion of their transcription work (e.g., for certain medical specialties or departments with especially sensitive data) being done domestically by domestic transcriptionists. Acquiring a competitor would also expand Acusis' current customer portfolio instantly, a tempting side effect. In both cases, the complexity of workflow integration needed would influence the true acquisition cost.

Ray called a meeting with Acusis' CEO David Iwinski and the rest of the senior management team to brainstorm a course of action. Apart from continuing with the current business model, three distinct options were on the table: (i) establish production capacity in another location such as the Philippines and thus offer transcription services that were performed in a more secure environment; (ii) acquire a U.S.-based subcontractor with U.S.-based transcriptionists to service customers who were not willing to source abroad; or (iii) go all the way and purchase a competitor with U.S.-based transcriptionists and thus expand the customer portfolio.

All four options had advantages and disadvantages, both in the short run and in the long run. One issue was the potential fallout if Acusis took no action. A second issue, of course, was the capital needed for the potential acquisition, and the higher variable costs of transcription in the United States. Of course, the impact on operational risk of the chosen alternative would be an important consideration. Another major issue was workflow and capacity integration: by adding several hundred transcription workers, either directly or indirectly, either in the United States or in the Philippines, the company was dramatically altering its operations. How would the work be split up between the different locations? How easy would it be to transfer work and to tackle overcapacity and undercapacity situations, especially with a customer base that was diverse in its needs and legal restrictions?

Only one thing was clear: whatever the decision, it would be the most radical and far-reaching one since the company's formation.

Supplemental Material

Supplemental material to this paper is available at http://dx.doi.org/10.1287/ited.2013.0110.

Note

This case has been prepared to form a basis for class discussion rather than to illustrate either effective or ineffective handling of a business situation.

Acknowledgments

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Appendix A. Computation of EPT and Accuracy Percent

EPT (Errors Per Thousand Lines) is computed by finding the weighted number of errors, also referred to as *error points*,

Table A.1 Weights for Illustrative Error Types

Category	Example	Point value
Critical medical	Medical word misuse	3
Critical	Omitted dictation/inserted text	3
Critical	Incorrect patient demographics/ author identification	3
Noncritical	Medical term misspelling	1
Noncritical	English misuse/misspelling	1
Noncritical	Incorrect verbiage	1
Noncritical	Failure to flag problem/issue	1
Noncritical	Other	1

per thousand lines using the following formula:

$$\text{EPT} = (\text{error points}/\text{number of lines transcribed}) * 1{,}000$$

Either an omission or incorrect insertion is an error. Errors can be of different types, with critical errors being those that could potentially affect patient safety. The different categories of errors are weighted as listed in Table A.1. (This error classification table was updated as necessary by Acusis and also by the industry association, the Association for Healthcare Documentation Integrity.)

Accuracy percent = (1,000 − EPT)/10. For example, if there are six "omitted dictation errors," one "medical term misspelling" and one "English misspelling," then EPT equals 20 and the corresponding accuracy percent is 98%.

Reference

Lazarus D (2004) Looking offshore outsourced UCSF notes highlight privacy risk: How one offshore worker sent tremor through medical system. *San Francisco Chronicle* (March 28). Accessed on March 12, 2013, http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2004/03/28/MNGFS3080R264.DTL&ao=all#ixzz1pti9uDvq.

Appendix B. Acusis' Service Guarantee

Note. http://www.acusis.com/acusis-advantage-service-guarantee.html (checked on 03/12/13).