Perspective

Reinventing your business model via disruptive innovation: "DayHawk Radiology"

Peter Kalina

Division of Neuroradiology, Department of Radiology, Mayo Clinic, Rochester, MN, USA

Correspondence to: Peter Kalina, MD, MBA. Division of Neuroradiology, Department of Radiology, Mayo Clinic, Rochester, Minnesota, USA. Email: Kalina.peter@mayo.edu.

Abstract: "Disruptive innovation" describes how an innovation transforms an existing sector by introducing greater simplicity, convenience, accessibility, and affordability than existed previously. Initially, the innovation may be considered controversial. Eventually, it may redefine the industry. Such is the case for teleradiology. Today, there are many teleradiology companies, most with US trained, Board-Certified radiologists. Yet, opportunities exist for improvement. There remains a need for efficient and consistent subspecialty interpretations by true experts. The solution to create and deliver value to the customer is "DayHawk" Radiology services, providing 24/7 daytime image interpretation to worldwide clients by radiologists already at an academic institution, working from any location. This would provide a desirable service to the marketplace—high quality, increased accessibility, a fair price; without the need for a large on-site staff. This proposal would solve the targeted customer's concerns of value, cost, quality, access and outcomes. This technology is here. It behooves large established organizations to adapt to the necessary changes in order to create a competitive advantage.

Keywords: Teleradiology; business; innovation; patient care

Received: 20 November 2018; Accepted: 05 December 2018; Published: 10 December 2018.
doi: 10.21037/jhmhp.2018.12.01
View this article at: http://dx.doi.org/10.21037/jhmhp.2018.12.01

Introduction

"Disruptive innovation" (DI) (1) describes how an innovation transforms an existing sector by introducing greater simplicity, convenience, accessibility, and affordability than had existed prior. Initially, the DI may be considered controversial, but eventually, the new idea redefines the industry. Such is the case for teleradiology. Prior to the development of teleradiology in the mid 1990's, radiologists were hired by hospitals or groups to interpret films at large fixed site view boxes. This was a process which was, and remains, very resource intensive, requiring significant overhead commitment in both human and capital expenditures. The subsequent advent of digital technology allowed efficient image transmission, securely, from any scanner, to any remote site around the planet, at any time. Supplementary technology in the form of voice recognition obviated the need for on-site transcription services. Teleradiology services (pioneered by the company "NightHawk") began embracing this new technology in the late 90's, offering overnight coverage for groups by strategically placing US radiologists in time zone locations where they would be working during the day while covering others across the globe at night. This delighted customers, now able to go home at the end of the day without having to return to their workplace, or spending all night tethered to their home computers. To many of their customers, the qualifications of the radiologists were secondary to the fact that for the first time, they could get overnight coverage, at an affordable price. Gradually, technology improved, quality of radiologists hired improved, demand sky-rocketed, and a huge new market was created.

Discussion

The solution to create and deliver value to the customer

is "DayHawk" Radiology services. Provide 24/7 daytime image interpretation to worldwide clients by radiologists already at your academic institution, working at essentially any location of their choosing. This would provide a desirable service to the marketplace - high quality, increased accessibility, at a fair price; all without the need for a large on-site staff. The disruption would initially threaten the existence of traditional imaging operations but would eventually become a positive change. This DI is not a breakthrough, but rather one that makes a service more accessible and more affordable. This would bring value to the market by driving down overall costs involved with imaging, a huge and expensive component of healthcare expenditures. It would also create a significant source of income for the parent organization.

The value proposition (2) to the customer describes a wide array of potential target customers including, but not limited to; small groups, remote locations, difficult to recruit to locations and non-subspecialized sites. The potential is to reach a large new audience with game-changing convenience at an affordable price with a model allowing customers to effectively only pay for what they actually use. The job to be done provides subspecialty interpretations by the best radiologists in the world at an affordable cost without the customer actually having to hire any of them. Current alternatives only provide lower-end competition such as locum tenens physicians looking for short term work, often with uncertain credentialing, qualifications or training. In addition, these locums companies tend to demand premium prices for an often subpar product due to the supply/demand for such services. The customer would hire the use of the radiologist, essentially an entire fleet, without the cost and complicating factors of having to actually hire that many specialists. This would replace the traditional existing model which requires a large employed on-site staff, a model unachievable and unsustainable for the majority of clinics, small to mid-sized hospitals and small, mid and even larger private groups.

The profit formula, defining the value for the parent institution, would be relatively straight-forward. The revenue model would be guided by large volumes due to the substantial potential market size. The cost structure would be, as in the traditional model, influenced most directly by the largest fixed cost, the radiologists themselves, and the capital outlay of the imaging workstations and dictating platforms. I propose a sliding margin model. That is, the cost of each interaction would be variable depending on the customer, with differing per case costs. Variables include their country of origin (discounts to countries with lower GDP's), the volume they contract for (discounts for higher use/per month), and other objective factors warranting higher or lower rates. Softer or more subjective factors including social, ethical and charitable situations will also be considered in the margins. This will allow flexibility so as not to be constrained by the current traditional model. Resource velocity or inventory turnover will likely be very variable, at least initially, as throughput varies from site to site. The biggest change in the profit formula is the referral base. Currently your organization captures only whoever actually walks through the door in your location. In the new model, it is virtually anyone, anywhere. Increased profit through increased volumes.

The parent organization has the key resources needed to deliver the value proposition to the targeted customers. This includes radiologists, dictating platforms, IT infrastructure and requisite support staff. New equipment inventory and capital will be required. Ultimately, this new model is leveraging an existing (although still relatively new) technology into new markets via a new business model. Your organization already has the brand recognition that will be vital in marketing this new venture. Eventually, new partnerships, joint ventures and other alliances may be considered between some of the more successful users as long as there can be assurance that they will adhere to your culture and original purpose or "why." Any concerns regarding tarnishing or diluting the brand would need to be addressed at that time, prior to formulating any more formal agreements.

The key processes are presumably essentially already in place. The existing operational and managerial components would be expanded to incorporate this new division of *Global Outpatient Imaging*. The long-standing, established and documented successful rules, metrics and norms would be expanded to the new model. The most important primary initial focus will be recruiting superb radiologists; individuals that seek to be collaborative, and that understand the culture, mission and vision. There will need to be a robust and reliable IT infrastructure to keep the technology running smoothly with the ability to design and develop new products as needed. Keeping in mind that this is not utilizing a new breakthrough technology, but rather leveraging one to make a service more accessible and affordable.

Conclusions

Recognize and adapt to the realization that there are several domestic and international providers willing to interpret imaging in the US at highly reduced rates. This external business environment (competition) was created by technology but need not be feared. Rather, it should be considered a wake-up call that Radiology could be more profitable as technology is embraced to its maximal potential by optimizing the utilization of resources to create value and increase profits. Embracing the "old-school" models, along with a risk averse culture must be overcome, as they are not conducive to encouraging such a disruptive plan. The environment requires we be nimble, ready to pivot to continue providing value, increasing market share and enhancing profitability (3). The existing commoditization of radiology services and potential for brand dilution can be counteracted by the positive message of the specific customer value proposition outlined above. The existing model would be enhanced, not eliminated. The marketplace would ensure that the demand for radiologists would increase and, eventually, with medical students taking notice of this success, supply of radiologists would soon follow the upward trajectory.

The resources and processes describe how the value will be delivered both to your new customers and to you. This customer-centric strategic vision requires looking beyond the current limitations of your highly successful current traditional business model with regard to radiology services. This would not require a totally new business be created, rather an expansion of the existing one. It provides an established organization a game-changing opportunity to grow by delivering a new customer value proposition to a newly expanded customer base.

By doing a job better than is being done now, this proposal would solve the targeted customer's problems of value, cost, quality, access and outcomes. This technology is here and is a force to be reckoned with. It behooves large established organizations to adapt to the necessary changes in order to create a competitive advantage. The "major players" in top tier academia have not yet dipped their toes into this arena.

That makes "now" the time for *DayHawk*.

doi: 10.21037/jhmhp.2018.12.01
Cite this article as: Kalina P. Reinventing your business model via disruptive innovation: "DayHawk Radiology". J Hosp Manag Health Policy 2018;2:49.

Acknowledgments

Funding: None.

Footnote

Conflicts of Interest: The author has completed the ICMJE uniform disclosure form (available at http://dx.doi.org/10.21037/jhmhp.2018.12.01). The author has no conflicts of interest to declare.

Ethical Statement: The author is accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

References

1. Christensen C, Raynor M, McDonald R. What Is Disruptive Innovation? Harvard Business Review. December 2014.
2. Johnson MW, Christensen CM, Kagermann H. Reinventing Your Business Model. Harvard Business Review 2008;86:50-9.
3. Forth, P. "Technology disruption meets the change monster...who wins?" TED Talk December 22, 2014.