"Freeconomics" in Health Care:

Practice Fusion & the future of free, Web-based health information systems
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"One of the old jokes from the late-'90s bubble was that there are only two numbers on the Internet: infinity and zero. The first, at least as it applied to stock market valuations, proved false. But the second is alive and well. The Web has become the land of the free"
—Chris Anderson, author of The Long Tail [1]

Chris Anderson, editor-in-chief of *Wired Magazine*, studies and writes about the human condition in the information age. The world that we inhabit today is evolving and shifting at ever-increasing rates, yet Chris Anderson has an insightful pulse on these elusive dynamics. In his next book, *FREE*, he develops what he views as the new economics that drive our world: "Freeconomics" [1]. Google's business model is the hallmark for Freeconomics. In essence, Google has created a social scaffolding platform on the Internet by offering free applications and tools, such as Gmail and iGoogle, on its Web sites for people and businesses to use as they see fit. Google's offerings drive traffic to its Web sites, and then Google leverages these traffic numbers—its "eye ball" viewing counts—to solicit advertisements from third parties. These advertisements represent one source of revenue that Google's free applications generate. Google's second revenue source comes from tracking, capturing, and organizing anonymized user data and then selling this information to third parties. This business model illustrates how Freeconomics works on the Web to drive the creation of new and innovative resources for people to use free of charge or at very low marginal costs.

Interestingly, I stumbled upon a rapidly emerging startup company—Practice Fusion— that employs this type of Freeconomics business model via its free, Web-based electronic health information system. Essentially, Practice Fusion has created a physician practice destination and

an electronic medical record system with free "Google applications" for doctors [2]. On its Web site, Practice Fusion offers its Web-based, digital health information system for physicians to download free of charge and launch in five minutes. Practice Fusion's installation process, "Live in Five," lowers the financial and technological barriers associated with health information technology adoption [2]. In five minutes, a physician can launch Practice Fusion and start using its tools and applications for practice management, patient scheduling, prescribing, secure email communication with patients, electronic charting, and, in the near future, for marketing outreach as well [2]. Practice Fusion's high-quality platform trumps existing vendor software offerings because its "solutions are Web-based, require no upfront costs, no extra hardware, no large software applications to install and rollout, and no backend databases, which are required by traditional vendors" [2]. Moreover, as Practice Fusion evolves and adds new applications and tools, physicians have the opportunity to evaluate these products and to incorporate into their practices those that enhance their abilities to practice medicine, manage their workflows, and capture their services for billing purposes. Financially, Practice Fusion derives revenue from similar sources as Google does: by embedding advertisements in a banner at the bottom of its electronic medical record system and by selling anonymized patient and doctor data from its system to third parties, maintaining HIPAA compliance along the way [2,3]. Practice Fusion also gives physicians the option to operate an ad-free electronic medical record system for $250 per month. However, as expected, most physicians choose to run the advertisement-based model [2,3]. Like Google, Practice Fusion understands Chris Anderson's Freeconomics concept and has leveraged this model to bring a tremendously valuable product to the healthcare marketplace for physicians and patients for an amazing price: free!

Across the country, healthcare consultants, information technology experts, and others agree that widespread adoption of electronic health information systems could bolster our healthcare system in many ways [2,3,4,5,6,7,8,9]. For example, according to Paul Tang, Chief Medical Information Officer (CMIO) at the Palo Alto Medical Foundation, and David Lansky, director of the Health Program at the Markle Foundation, electronic medical and personal health records could enhance how physicians and patients interact:

> Widespread adoption of information technology is now regarded as a pathway to improving healthcare and achieving the Institute of Medicine's highly regarded six aims for redesigning care. Achieving these aims requires fresh approaches to health system design, including continuous healing relationships between physicians and patients and provision of tools to help patients be more active participants in their own care. Personal health records (PHRs) might allow patients and providers to develop new ways of collaborating and provide the basis for broader transformation of the healthcare system.
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> [8]

As this statement indicates, the ability to capture, record, and track medical information electronically could reduce preventable drug errors, could support patient-physician interactions and make them more efficient, and could improve patient care and diagnostic processes by allowing physicians to tap into computer tools, protocols, resources, and checks—flags that indicate adverse drug interactions, for instance—that could enhance medical decision making [2,6,8]. However, current vendor software products are prohibitively expensive, and this financial barrier represents the primary limiting reagent on widespread adoption of electronic medical record systems by physicians:

The electronic medical record (EMR) is possibly one of the most costly information technology system upgrades that any health care provider can undertake. The cost of implementing a basic EMR can run from the tens of thousands to several million dollars, depending on the size of the organization and the scope of implementation. The high capital cost of such an investment is reason alone for numerous health care organizations to shy away from EMR implementations. [5]

Clearly, this financial hurdle is much too high for the majority of physicians and physician groups in the United States [2,4,5,7,8]. A small medical group of five or six physicians bears a tremendous amount of financial risk when it purchases an electronic health record system for current market prices [2,4,5,7,8]. These small practices already operate within a healthcare system that is fiscally and operationally limited in many ways, so it is easy to understand why so few physicians have converted to paperless, digital practices:

Most U.S. primary care is delivered in small practices, and many of these are doing poorly financially. Increases in expenses outpaced the increase in physician compensation in primary care for three straight years, according to the Medical Group Management Association. As a result, primary care providers appear to be finding it particularly hard to justify the risk in making any investment, especially in a new technology that they perceive as risky with uncertain returns for them, such as an EHR. [6]

In fact, at Concierge Physicians of California, a small family practice, Dr. Bob Nelson continues to build his own "electronic medical record system" internally by scanning paper documents and by using basic software programs such as Microsoft Word because he cannot afford to purchase an existing vendor product, even though he would like to implement an electronic health record system in his practice. When one of his patients asked him why he had not purchased an

electronic medical record system, Dr. Bob replied, "I can be an early adopter on some things, but not on this one. It just doesn't make sense to pay $60,000 or more up front, plus the ongoing fees and service charges, for an investment that lacks a guaranteed return." Undoubtedly, Dr. Bob's comments echo those often quipped by many other primary care and small practice physicians across the country. Recognizing this reality, Practice Fusion has found a creative way to hurdle current financial barriers and provide physicians with an electronic health information system for a total-ownership cost—zero dollars—that is much, much lower than the cost that companies like Epic and other software vendors charge:

> Practice Fusion addresses the complexities and critical needs of today's healthcare environments by providing a revolutionary application and delivery model for physicians and patients at no cost. Practice Fusion's free, on-demand, low-risk EMR platform eliminates the complexities associated with licensing, implementation, integration and support experienced with traditional enterprise software solutions. Practice Fusion dramatically reduces the cost to the practice while enabling providers to deliver the highest level of care possible to their patients [2].

From the bottom up, Practice Fusion's free, Web-based electronic health system has the potential to drive widespread adoption of electronic medical record technology across the country—free is an enticing proposition for physicians, indeed.

In addition to offering its electronic health system to physicians to download and launch free of charge, Practice Fusion handles all the technology support—firewalls, data backups, etc.—for physicians for free of charge as well, including live-support [2]. Without a doubt, another barrier to health information technology adoption that physicians encounter is the consulting, training, support, and upgrades that vendor software products and systems require. This coupled combination of tremendous capital expenditures and then cumbersome, often burdensome and expensive ongoing maintenance and support economic costs inhibits widespread adoption of health information technology: "[K]ey barriers in the HIT market directly impede adoption and effective application of EMR systems; these include acquisition and implementation costs, slow and uncertain financial payoffs, and disruptive effects on practices. In addition, providers must absorb the costs of EMR systems, but consumers and payers are the most likely to reap the savings" [4]. The savings experts surmise that our healthcare system would enjoy from widespread adoption of electronic medical records are uncertain; yet, somehow, despite these speculative uncertainties, many policy wonks, government officials, and others expect physicians and their practices to bear the extensive financial and operational risks associated with health information technology adoption, despite the fact that payers and consumers would enjoy the greatest benefits from these digital systems [4,7]. In a creative way, by offering its product and support system for download free of charge, Practice Fusion has built an innovative, entrepreneurial solution to this concentrated risk problem, creating potential for spurring widespread implementation of electronic health records. In the past six months, 1,200 physicians—primarily from smaller sized practices—have flocked to Practice Fusion, so the potential exists for Practice Fusion to play a critical role in shifting

how we think about and operationalize healthcare information technology in the United States [2].

By integrating Freeconomics into its business model, Practice Fusion offers a truly unique and valuable product to the healthcare marketplace. By leveraging the enormous power of the Internet, Practice Fusion's free, Web-based electronic health information system incorporates a cutting-edge business model that has already driven extensive innovation and revolution in other industries and markets:

> The rise of 'freeconomics' is being driven by the underlying technologies that power the Web. … For good reason: It's now clear that practically everything Web technology touches starts down the path to gratis, at least as far as we consumers are concerned. Storage now joins bandwidth (YouTube: free) and processing power (Google: free) in the race to the bottom. Basic economics tells us that in a competitive market, price falls to the marginal cost. There's never been a more competitive market than the Internet, and every day the marginal cost of digital information comes closer to nothing. … The Web has become the land of the free. [1]

Clearly, Ryan Howard (Practice Fusion's Chief Executive Officer) and his team at Practice Fusion understand these Web dynamics. In fact, Practice Fusion initially charged physicians a $50 per month ongoing support fee, but in "the land of the free," even this marginal cost / fee has completed the path to gratis—Practice Fusion now offers ongoing, live support free of charge to all of its users [1,2]. Finally, the sale of anonymized data in electronic medical record systems is not new, but it is new in the form that Practice Fusion has constructed [10]. Some consumers and analysts will most likely share and express privacy concerns about their health information,

knowing that Practice Fusion is using their anonymized medical data to generate revenue. However, this practice is commonplace today:

> Secondary use of health information is growing. … The sale of personal information from databanks for marketing purposes is widespread. … Some of the issues that these practices raise are: Should the consent of the individual patient be necessary before his/her medical data are included in shared databases? Who should be held accountable if patient data contained in these shared databases are used inappropriately?" [11].

Personally, I do not feel that healthcare leaders and policy makers have engaged these types of privacy questions enough; but, if free, Web-based electronic health records take off, concerted efforts would be needed to establish consistent policy on the issues of patient data ownership and inappropriate use of personal health information. Yet, in the meantime, it is important to note that Practice Fusion maintains HIPAA compliance, and, from a broader perspective, like Google, Practice Fusion's business brand, name, and reputation are on the line every day it operates its business because Practice Fusion must ensure the protection and privacy of consumers' health information—breaches of its security safeguards and misuses of patient data banked in its system would spur negative market feedback mechanisms that would threaten Practice Fusion's future, similar to how a plane crash jeopardizes markedly an airline company's viability [3].

In the end, modern medicine has experienced an unprecedented influx of technological healthcare tools and resources during the past two decades, with the rate of new invention creation increasing exponentially, showing no signs of stopping. In the health information technology domain, electronic health records have received focused attention from the government, policy makers, think tanks, and others because advocates within these groups view these digital medical / health records as key infrastructural components needed to reengineer

healthcare processes, communication, information storage and use, and payment mechanisms. These advocates view digitized records as data storage devices that could increase the efficiency, effectiveness, and continuity of care—different health plans and systems could communicate with and send information about patients to each other electronically, for instance. However, despite this noted upside potential, few physicians in the United States have adopted electronic medical record systems because existing vendor software products are prohibitively expensive and cumbersome in practice. According to Blackford Middleton, chairman of the Center for Information Technology Leadership and an assistant professor of medicine at Harvard Medical School, "Until a market mechanism is created to allow all parties to equitably share in the benefits of HIT adoption, broad-scale adoption will not occur" [7]. As a private solution-searching firm, Practice Fusion, with its free, Web-based electronic health information system, appears positioned to drive the market mechanism that allows all parties to reap the benefits gained from health information technology and that spurs widespread adoption of electronic health records by physicians and their patients. Of note, current interoperability problems with vendor software products could be addressed on the Web as well, potentially [2,5]. By taking electronic health records live to the Internet—Chris Anderson's "land of the free"—Practice Fusion is, I suspect, the future of digital health records—the rest of the healthcare technology industry should take note: Freeconomics is emerging in the vast healthcare space.

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