

Trust and Safety: What Can we Leverage from the Financial and Aviation Industries?

Would you trust your bank to safely manage your health data as well as your financial data? How would you feel about your bank using the same pattern analysis technology that they apply to your financial accounts, to analyse your “health account” and predict and shape your future health needs or propensity to act in a certain way?

Why do we trust an airline’s systems to fly us 12000km in a 400 tonne loaded plane and get us safely to our destination? What can a pharmacist learn from an airline pilot about safety and the importance of avoiding unnecessary distractions and interruptions?

This edition of HCIRO includes two further papers from students of the University of Auckland’s Health Knowledge Management course. Trust, safety and the potential to leverage both the processes and infrastructure of other industries are key knowledge management themes that this year’s papers raise.

Liz Schoff compares the challenges of implementing decision support systems in the health care and financial industries. She explores some of the commonalities between the two industries, particularly the use of ICT to support decision making and transformation of service delivery. She specifically focuses on the key comparative themes associated with the implementation of a targeted marketing expert system in the financial sector, and the clinical decision support system PREDICT™.

Malini Subramoney discusses a shared prescription tracking tool for pharmacy and nurses that aims to reduce interruptions and subsequently errors in an inpatient dispensary pharmacy. Subramoney notes that the aviation industry proactively designs systems that recognise the limitations of human performance and aim to minimise the potential impact of known risks. People being short of time, being interrupted, and distracted are a known source of healthcare risk. The described prescription tracking system has the potential to reduce interruptions in pharmacy and clinical discharge processes with the aim of improving patient safety. It also has the potential to improve general clinical quality and patient experience by facilitating productivity and minimising the opportunity cost of continual distractions and phone calls.

The course in which the students wrote these papers, focuses on the use of ICT to improve Health Knowledge Management. Knowledge Management is often unfortunately equated or reduced to meaning the building of data warehouses. This course focuses on exploring the broader concept of knowledge in health and its role in decision making and action, and the broad range of ways ICT can contribute to both the capacity and motivation to act of all stakeholders. The course is an opportunity to ask “What if?” questions. It is an opportunity to explore ideas, connect people and concepts including looking at other industries to see what can be adopted and adapted, learnt and leveraged. On this note, as one of the course convenors I will take the opportunity of this editorial to indulge in some “What if?” questions in relation to some of the key issues we face in the health ICT sector.

A core theme of Schoff’s paper is the potential benefits of “knowledge gained across an industry boundary”. “What if,” as well as knowledge sharing, banks could leverage their current infrastructure and processes to actually manage both our finances and health? Similarly, rather than just drawing on aviation knowledge for design, “what if” aviation companies were given the contracts to manage our health systems?

What do we need to do to build trust in the safety and effectiveness of the health system, in the same way that the banks and airlines have built trust in their industries? Yes, I know. Am I serious? Have I not heard of the financial crisis and its impact on the image of financial institutions, or that the airline business is under increasing pressure?

Beneath all this, however, the banks and indeed the airline industry have built a brand image for their systems that we trust with our money and lives. We give control over all our worldly assets to the banks, and even if we have problems with the food or queues, we trust that the airline systems will get a 400 tonne 747 to its destination.

Banking has integrated multiple people, processes, channels and technologies around the world. Banks have standards and the Society for Worldwide Interbank Financial Telecommunication (SWIFT) that allows us to access services anywhere in the world. As we struggle with the concept of how the patient-centric or family-centric record could be enacted, banking has already mapped out a path of people, process and technology interoperability that we could consider following.

Best of breed can be a very effective strategy for gaining rapid uptake by end users, by providing them with a tool specifically targeted at their needs. Ideally best of breed systems would be readily interoperable through the use of common standards. However, the reality for many health CIOs trying to integrate multiple different software products and instances, is that they perceive themselves as fast approaching a best of breed maintenance breakdown point. The risk of reaching a best of breed maintenance breakdown point increases, where as add additional systems you exponentially increase the number and complexity of the interfaces, and all your limited resources are increasingly consumed in managing these interfaces, rather than continuing to innovate to improve your business.

As we struggle with the best of breed maintenance break down point, could banking hold some of the answers or even be the answer? Could we leverage banking's well integrated structures and processes in healthcare?

There is a range of ways we can interact with our bank, either online, through an ATM, a call centre, texting or face to face. Our financial information is widely available and money and services can be accessed through a card or token throughout much of the world. Couples may share accounts, parents monitor children or children in turn help elderly parents. Security processes are in place using passwords, cards and security questions that facilitate information being shared and acted on by multiple agencies to provide you with service. Similar processes to these could be applied in health in a stepped or continuum of care model.

Targeted marketing systems as described by Schoff, could also be of significant health benefit based on their ability to predict and shape your propensity for future actions and needs, based on assessment of contextual information held on you and patterns built up of your behaviour. Targeted marketing systems could be used to prompt healthcare interventions in both a planned and opportunistic basis according to agreed evidence based guidelines.

Medical banking is a term often used for the concept of creating savings accounts to pay for health care. However it is worth considering whether it could have a broader meaning of a bank holding both your health and financial data and you using your ATM card or online banking portal to access both.

As well as safety systems the aviation industry continually seeks to improve its logistics or how it can improve its processes to most cost effectively and safely process human and other cargo from A to B. These processes commence long before the plane takes off and involve everything from pricing, booking, check-in security and effective prediction and utilisation of resources, all skills that could be applied to the healthcare environment.

There is always the argument that healthcare is much more complex than financial or aviation systems, and this argument holds significant face validity. However, healthcare can still learn from the financial and aviation sector about building trust and safe efficient integrated systems, and predicting what the system at an individual or community level may need or how it might fail, and acting on this information pre-emptively.

The public understands that errors occur, but trust and expect that the banking and airline industries invest heavily in continually improving the effectiveness and safety of their systems. Healthcare requires the development of similar trust, and even if we don't use the actual infrastructure of these other industries we can certainly learn from their processes.

Another paper this month from Jerome Ng describes an implementation of an information system concerned with clinical pharmacists' activity. Two particularly important aspects emerge from this. Firstly, monitoring clinical activity and ultimately justifying it financially are an important part of New Zealand health information systems. Secondly, the data in this system is actually stored overseas. With the rise of cloud computing and systems such as Google health and HealthVault, this may become increasingly common. While care must always be taken, especially with identifiable data, this paper argues convincingly that legal and contractual issues do not prevent such approaches.