Regional Social Security Forum for Europe

Istanbul, Turkey, 28-30 May 2013

Technological innovations as a strategy to improve service quality

Innovation in ICT to drive service quality improvement – social media, insight and automation

Brian Lee-Archer
Director
IBM Cúram Research Institute
Australia

Technological innovations as a strategy to improve service quality

Innovation in ICT to drive service quality improvement – social media, insight and automation

Brian Lee-Archer
Director
IBM Cúram Research Institute
Australia

Overview

Innovation is the intersection of business insight and invention.[1] New technology emerges on an almost daily basis promising benefits for social security organisations but does the hype match the rhetoric? Where is the business insight to make new technology relevant to the business needs of a social security organisation? This paper examines three technology domains reshaping our daily lives and explores their potential value to the social security industry in the context of a new business model for social security - RightServicing.

Three technology areas are examined:

- *Social media – creating a social business model by facilitating networks of actors in the social security system to create value by sharing information amongst each other*
- *Analytics – gaining insight from data, including information gathered from social media, to predict where service interventions can enable the preventative effect*
- *Automation – combining analytics and social media to streamline efficiency, raise service quality to new levels and deliver more effective social outcomes*

Key to such investment in technology is appreciating where innovation is found – at the intersection of invention and business. Rather than focusing on technology per se, this paper examines the areas of social security administration requiring business insight that in turn can intersect with the many technology inventions we see in the market today.

Introduction

In December 1969, it was reported in the Australian Social Work, Volume 22, Issue 4, the lack of coordination in the social welfare field has commonly presented communities with major

---

problems. 'Duplicating,' 'overlapping' and 'fragmentary' are recurring descriptions of social welfare programs. Lack of coordination can represent inconvenience to clients, economic waste for the community, ineffectual use of already available resources or, in services for maltreated children, further injury or even death to the child.

Today, this problem description seems as relevant as it was in 1969! Despite the significant investment in Information and Communications Technology (ICT) by social security organisations, there remain large gaps in service quality. The service quality gap is the difference between people's expectations of the service interaction in terms of value and their perception of what is actually received in value.

While the contribution of ICT investment in social security to achieving productivity gains and improvements in social outcomes is not in dispute, question remain as to what else needs to be done to close the service quality gaps.

Closing the service quality gaps is not just a policy question, nor solely a service delivery issue. It requires a comprehensive approach encompassing all levels of government, focused on achieving better social outcomes. We need to move from the traditional one-size-fits-all approach to a citizen-centric approach.

To examine in more depth this service equality gap the IBM Cúram Research Institute researched the characteristics of a new business model for the social security industry. Titled, RightServicing, this new business model was formally launched at the ISSA ICT Conference in Brasilia in April 2012.[2] This global research project conducted by the Institute provides a new perspective for social security organizations on how to develop policy and deliver services to achieve better social outcomes at a lower cost and thereby address the service quality gap.

RightServicing – business insight for a differential response

A differential service response is one calibrated to match the level of need (from both a social outcome and service delivery perspective) and stands in contrast to the one-size-fits all approach. The RightServicing business model for differential response brings about:

- a reduction of over-servicing the majority, through the automation of low risk, straightforward and simple interactions;
- an increase in deep and personalised support to address disadvantage – people who suffer disadvantage are often under-serviced by the social program management system; and
- a largely self-managed servicing approach to those who have been affected by a social risk and are able and would prefer to manage their affairs.

RightServicing is a significant update to the traditional one-size-fits-all process model. Not all citizens need the same level of support to achieve a desired social outcome and the amount of service provided should vary according to the social context of individuals and their families. The concept challenges traditional thinking in social protection of insurance for social risks.

The concept of RightServicing emerged as a way to rationalise the management of the multiple forms of social programs that exist today (such as social insurance, social welfare, social assistance), to meet the needs and wants of individuals and communities while

---

[2] Lee-Archer, B. 2012. RightServicing, *A new business approach for enabling a differential response in social program management,* Dublin: IBM Cúram Research Institute.

Brian Lee-Archer

maintaining societal level outcomes within the constraints of societies ability to fund those same programs.

The RightServicing Characteristics

RightServicing was defined in the context of nine characteristics which were validated through research. A brief insight on these nine characteristics follows.

Segmenting:
Segmenting means grouping people together with similar needs and wants and is a mechanism for identifying which groups of people are under serviced and which are over serviced. It shifts the focus from seeing people as beneficiaries of a particular social program to focusing on their needs.

Fast-Tracking:
Fast-tracking is all about getting through the system with a minimum of fuss. The principle of fast-tracking is based on the assumption that people's access to social programs should be made as simple and easy as possible until there is contra evidence that demands a different approach. It is often enabled by automation through technology. Fast-tracking may require a consent model when it involves sharing and accessing information to provide a streamlined low touch service experience.

Addressing complexity:
There are people and families who face multiple and/or long term social risk factors that lead to significant social disadvantage and barriers to work. For these people there are no quick fixes or simple solutions. While each case needs to be addressed on its merits, the first step is acknowledging that complexity exists and will always be resource intensive during the pathway to achieving a satisfactory social outcome.

Risk management:
Risk management in the field of social program management has two dimensions: (i) social risk: one or more factors an individual may experience thereby affecting their capacity to earn an income and/or participate in society e.g. losing a job, becoming disabled, getting old. There is also (ii) the funding risk, the exposure to the program funding source from behavior, either deliberate or through error and/or omission, that can be mitigated. Leakage of funds to people deliberating defrauding the system and/or failing to comply with rules and regulations can cause a significant impact on national and/or social fund accounts. Risk management needs to focus on both dimensions in parallel. The aim is to achieve a balanced approach to the application of business processes designed to mitigate both social risk and funding risk.

Accessing:
Accessing is about how people access and consume the social system. There are three distinct access models which people can move between and/or use for different circumstances.

- **Self-managed** access, – people in control of their own circumstances can access and consume programs autonomously.
- **Facilitated** access model. People who require some or minimal assistance to guide them.
- **Managed** access – for people requiring assistance, often intensive, to achieve desired outcomes.

Automating:
Automating should be focused on eliminating manual processes and transforming business processes in a way that adds value for the customer or the agency and preferably for both.

Predicting:
Predicting is based around the social context of individuals, families and communities. By predicting the likelihood of an event or pathway leading to an adverse outcome, interventions can be initiated to prevent this expected outcome.

Micro Programs:
A micro program is defined as a social program focused at individuals and/or communities with complex social problems such as a region of higher than average long term unemployment or higher than average juvenile recidivism.

Leveraging the ecosystem:
The term leverage represents the added value derived from a whole solution targeted at a problem rather than a collection of component pieces addressing component parts of the problem, thus involving a wide variety of stakeholders including people with needs and wants, government organizations, service providers, employers and social partners.

ICT to enable RightServicing

Each of the RightServicing characteristics represents an area of business insight to deliver service quality improvements. Each characteristic can be enabled through technology based solutions leading to innovation. Table 1 provides an overview of ICT product classifications against each of the RightServicing characteristics. Social security administrations seeking innovation can investigate each characteristic and assess the intersection of business insight with the relevant technology.

Table 1. *RightServicing Technologies*

Business Insight - RightServicing	Technology areas to investigate
Segmenting	• Business analytics – identifying common client needs and wants – analysing data from various sources to identify patterns of behaviour • Social media – listening to clients – enabling clients to share their experiences
Fast Tracking	• Business analytics – identifying people at low risk and bypassing processes • Trusted identity – leveraging other systems (e.g. the banking network) so we know who you are • Rules engines – intervention by exception • Sensory systems – RFID – home health monitoring systems
Addressing Complexity	• Case management systems – whole of life management from need to outcome • Geographical information systems – identifying pockets of disadvantage • Business analytics – identify root cause of problems
Managing Risk	• Business analytics – identifying patterns of behaviour, vulnerable people, fraud and compliance issues • Data matching
Accessing	• Social media – enabling clients to communicate the way they want to • SMS – easy, cheap, ubiquitous mode of communication - • Smartphones and tablets – social security apps • Online systems – 24x7 – enabling self-management

Brian Lee-Archer

	• GPS (Global Positioning Systems) – enabling staff in the field • Self-assessment and referral via the internet • Adaptive technology – assisting people with disabilities • Interactive Voice Response – speech recognition • M-government
Automating	• High volume transaction processing systems • Service Orientated Architecture – SOA – messaging and exchange of data between systems • Trusted identity – ease of access , anywhere, anytime • Rules engines – managing workflow tailored to circumstances • Digitisation – the paperless office • M-government
Predicting	• Business analytics – identifying patterns of behaviour
Micro Programs	• Business analytics – identifying patterns of behaviour • Dynamic case management systems – agile and flexible and easy to deploy • Outcome management systems – setting plans and measuring results
Leveraging the Ecosystem	• Service Orientated Architecture – SOA – messaging and exchange of data between systems – access data form trusted sources • Software as a Service – (SasS) and Cloud based computing – enabling service providers affordable access to core business applications • Social media – connecting with clients and stakeholders

Three technologies (inventions) to deliver on RightServicing (business insight) to deliver service quality improvement (innovation)

While there are many ICT inventions that can contribute to service quality innovation as highlighted in table 1 above, the remainder of his paper now focuses on three of them viz:

- Social media – creating a social business model by facilitating networks of actors in the social security system to create value by sharing information amongst each other.
- Analytics – gaining insight from data, including information gathered from social media, to predict where service interventions can enable the preventative effect.
- Automation – combining analytics and social media to streamline efficiency raise service quality to new levels and deliver more effective social outcomes.

Social Media - the new data source

When we think about social media, brands such as Facebook, You Tube, Tumblr and Linked In, just to name few, come immediately to mind. Keeping in mind innovation as the intersection of business insight and invention it is important to note that social media tools can be considered as inventions. They rely on proven and standardised technology platforms and the invention aspect is a combination of technology, process and people. The business insight for social security administrators is to enable better and faster ways to reach out and communicate with citizens, members, service providers, social partners, in fact all the actors in the social security ecosystem.

As the world becomes interconnected and people embrace social media, today's social security administrations face the dawn of a new era – the era of the Social Business. A Social

Brian Lee-Archer

Business is defined as embracing networks of people to create business value?[3] Just as the Internet changed the way people access their social security entitlements and information forever, the integration of social media into mainstream business represents another enormous shift in the landscape. Social security Administrations that successfully transform into a Social Business can potentially reap great benefits – among them the ability to deepen citizen and member relationships, drive operational efficiencies and optimise the workforce.

Three broad trends are making this possible:

(1)   The phenomenal global penetration of mobile phones and in particular smartphones.
(2)   The world is becoming interconnected via vast, ubiquitous networks.
(3)   Many things are becoming intelligent by applying analytics to the mountains of data they can collect – the internet of things.

Following are some facts highlighting the rapid spread of social media technology and capability across the world:

- Online users in rapid-growth regions like Latin America, the Middle East and China are now spending more time on social-networking sites than on e-mail;[4]
- Gartner Research predicts that social networking services will replace e-mail as the primary communications vehicle for 20% of business users by 2014;[5]
- the number of mobile users continues to increase and has already surpassed the number of households with internet access;[6]
- in total, 90% of the world's population, and 80% of the population living in rural areas, have access to mobile networks;[7]
- in April 2013 it was reported in Bloomberg media that the US-dollar (USD)50 Android smartphone is about to hit the market worldwide.[8]

The data points from the above list that are very telling relate to the growth of social networking activity which is beginning to supplant email. For many social security organisations still trying to come to grips with using email to communicate with their participants, the people they serve are moving further ahead in how they communicate with each other. This is likely to widen the service quality gap.

The questions surrounding Social Business are similar to fifteen years ago at the dawn of the .com era of the internet – what value can social media bring and what problem business does it solve? When is the right time to make an investment and leverage social media to create innovation through a Social Business model? Is Social Business a platform for a new wave of innovation in social security administration?

---

[3] IBM Institute of Business Value. 2011. *The Social Business, Advent of a New Age*. IBM New York.

[4] "Global 'Digital Life' research project reveals major changes in online behaviour." *Digital Life*. November 10, 2010. *http://discoverdigitallife.com/global-digital-life-research-project-reveals-major-changes-in-online-behaviour/*.

[5] "Gartner Reveals Five Social Software Predictions for 2010 and Beyond." Gartner Newsroom press releases. Gartner. February 2, 2010: *http://www.gartner.com/it/page.jsp?id=1293114*.

[6] Roggenkamp K. 2009. *Development Models to Unleash the power of Mobile Government*. Berlin. Available at *http://m-government.info/files/roggenkamp_mgov_development_paper.pdf*.

[7] OECD/International Telecommunication Union. 2011. *M-Government: Mobile Technologies for Responsive Governments and Connected Societies,* OECD Publishing.

[8] Interview with Marc Andreessen April 2013. *www.bloomberg.com/news/2013-04-29/-50-android-smartphones-will-start-eating-the-world-this-year-andreessen-says.html*.

Brian Lee-Archer

One of the guidelines within the ISSA Service Quality Guidelines to be released at the 2013 World Forum describes the *Voice of the Participant – Listening to the voices within the Service Ecosystem.*[9] In essence this guideline reflects a long standing good practice of social security organisations actively engaging in a bi-directional communication with the various actors in the social security system to improve the quality of the good and services they provide.

Social media is a paradigm shift in how people and organisations will communicate with each other in the coming years. While e-mail was largely an example of the automation of a traditional mode of communication, social media provides a new approach where people and organisations can engage in an interactive dialogue that generates new insight and knowledge that can be shared to benefit the wider community.

Analytics

Analytics is the key to the Segmenting characteristic of RightServicing. Analytics, also known as Business Analytics and Big Data, is technology and associated processes required to analyse and understand large amounts of business data. A more technical definition of business analytics is the application of mathematical and statistical techniques to data with the aim of uncovering patterns and correlations or to make models that predict, thereby enabling fact-based decision making or planning. The Big Data trend represents the technology capability to process significant amounts of data on a scale unprecedented up to now.

Insight drawn from personal experience is no longer sufficient given the volume of new data that is created on a daily basis. New analytics capabilities are needed to make better decisions, and, over time, these experiences will even inform and refine the instinctive responses of decision makers.

The capability to analyse the data from across a population being serviced will deliver the business insight required to leverage the right technology at the right time. Business analytics requires information to be available in a digital format. Traditional business intelligence technologies provide a historical view of what has happened such as benefit claim rates by region over time, by age group or by any number of demographic indicators. Analytics can help administrators to understand why events occurred as they did, what will happen if these trends continue and what might happen in a given set of scenarios.

The benefits of analytics are in finding unknown but highly significant pieces of information that lie hidden in the data. The organisations that can extract meaningful information from their data will be the best position to target programs and manage risk. What is interesting is a core principle of Big Data approach is to focus on identifying correlations over causality.[10] This is somewhat in contract to the traditional social science and social policy approach which is to identify the causality of social disadvantage before changing policy levers. In today's fast moving world of service quality gaps, there are times when identifying a correlation may be enough to adjust policy and service delivery levers.

---

[9] The ISSA Service Quality Guidelines to be launched World Forum in November 2013, define participant as any person, social partner or stakeholder such as service providers (for profit and not for not profit), employers, advocacy groups, other social security agencies in country the organisation collaborates with or an international social security agreement partner and other government agencies with a role in the social security system. For the people who contribute or receive social security benefits, the term participant includes customers, insured persons, clients, members, contributors, beneficiaries, pensioners and allowees.

[10] Mayer-Schonberger & Cukier. 2013. *Big Data, A revolution that will transform how we live, work and think* – John Murray London.

Brian Lee-Archer

Analytics and Big Data will help social security administrators find answers to:

- The proxy indicators that can lead to identification of disadvantage in a location?
- The indicators of fraudulent or non-compliant behaviour?
- The indicators of lapsing into long term unemployment?
- The services have the most beneficial impact for a population cohort when a life event occurs?
- The most cost effective prevention strategies in workplace safety initiatives?
- The characteristics of the people who use the internet channels over the traditional face to face channels?
- The employers that can be trusted to always provide correct contribution information?

Once answers to these types of questions are known, it then becomes possible to identify which technology inventions are worth leveraging to enable innovation. For example once the characteristics of trustworthy employers are known then a fully automated data exchange based technology solution to enable those same employers to electronically lodge their contribution would be an innovative way to reduce the burden of compliance.

Automation

Automation is a RightServicing characteristic in its own right. Where to target automation initiatives to get the most value is what makes this an important characteristic to drive greater efficiency and effectiveness. The data gathered from sources such as social media plus the analysis of the data with analytics, provides the basis for targeted investment in automation initiatives.

ICT has become an integral part of social services and social security programs worldwide. Today, IT tools are used for tracking clients, managing grants, paying benefits, establishing eligibility, accessing information, following trends, and archiving files to name just of few of the business needs fulfilled by technology.

Social security organisations within Europe have been through the first stages of automation where technology has been used to speed up tasks previously done by manual means. Like the Social Security Administration back in the 1930s automation has been focused on administrative efficiency. Whereas machines did the manual work, it was people who made the decisions.

Automation in the context of the modern social security organisation is now moving to the realm of decision making. While it should never be designed to eliminate the need for human based expertise and experience, automation in this context is designed to release people from low risk decision making to enable their expertise to be focused at the most difficult and complex case work.

Conclusion: Social media + analytics + automation = service quality improvement

Addressing the service quality gap can be achieved through the combination of these three technology areas.

- Social media to provides platform to interact with participants and engage in co-production of new policy and services with participants.

Brian Lee-Archer

- Analytics to discovery of patterns and correlations from ever increasing datafication of information including that produced within social media channels.
- Targeted automation initiatives based on the assessment of risk made possible by the analysis of data.

Social security administrations committed to active engagement with their citizens, members and other stakeholders will embrace these technologies to generate innovation. They will enable the actors in the social system to participate in policy development and business design (co-production). As Social Businesses they will reach out and solicit feedback. They will collect and analyse data and make real time risk assessments. Business processes will be automated according to the risk assessments including a significant majority of decision making.

Innovative use of ICT has the potential to enable social security organisations to take a less intrusive approach to service delivery for a significant proportion of citizens. This may seem a contradiction as some will argue ICT is enabling a deeply intrusive relationship between the citizen and state where a person's private and confidential information is freely accessed and passed around various government agencies.

A significant cohort of people have circumstances that present low risk to the integrity of the social security system. For these people, in exchange for giving consent to social security organisations to access information about them by automated means, they can be largely serviced through automated decision making.

However what if this information sharing is largely automated and isolated (and therefore protected) from human intervention? And when human intervention is required due to complexity such as needing to solve wicked social problems, any information accessed is done so with the knowledge and consent of the person concerned. Topics such as data and privacy protection, equal treatment and non-discrimination and conditionality are addressed in a new report to be released in conjunction with the ISSA Regional Forum, authored by Professors Pieters and Schoukens et al from the European Institute of Social Security.

Pieters and Schoukens have examined RightServicing through the lens of their extensive legal experience in social protection and human rights. The report, RightServicing, a Lawyers Perspective is available from the IBM Cúram Research Institute at - *www.ibm.com/curam-research-institute.*

Brian Lee-Archer