The Data Services Accelerator

Data – it’s the oxygen of the Internet. Its flow is what makes the Internet vibrant, delivering and exchanging value. We are on the cusp of the formation of a new data economy where people can harness the power of their digital information by sharing it with others to solve problems and identify new and unforeseen opportunities. “The world has been madly digitizing everything from music and books to business transactions and scientific data,” said Dr. Genevieve Bell, Intel Labs Director, User Experience Research. “There is a gold mine of insight and wisdom that lies within all our digital information, but we have only begun to understand its potential when put in the hands of citizens to unleash new, unexpected and serendipitous opportunities.”

But how do we explore this untapped value – enabling monetary gain, entrepreneurial activity, and/or participation in civic engagement - for individuals more broadly? What are the barriers to the emergence of a data economy and what are the sustainable business models that allow a spiral of economic value for all the ecosystem stakeholders?

Intel Labs’ Data Economy Experiment began with ethnographic work and crowdsourcing of a Complex Data Economy through the WeTheData.org project, which gave guidance on how to explore these questions in the emerging data ecosystem. This is the purpose of the National Day of Civic Hacking and the Data Services Accelerator project.

Background: National Day of Civic Hacking

To initially scope the breadth of the opportunity space and to get a collection of diverse perspectives, Intel Labs and SecondMuse worked together to launch the first ever National Day of Civic Hacking. On June 1-2, 2013, more than 11,000 citizens representing businesses, nonprofits, government agencies and local residents teamed up to participate in over 95 events throughout the United States. The scale of this massive collaboration between government and individuals to use technology to solve challenges for people in their communities is unprecedented. This mass collaboration provided an opportunity to engage a
wide range of individuals to explore the potential of the personal data economy in civic and social impact. The National Day of Civic Hacking mobilized some of the brightest minds around the country to explore the potential for new value creation in civic and social applications by tapping into how personally generated data can be combined with large open data sets to better serve the end-user. Intel brought a team of researchers and scientists to engage with government, local event leads, and hackathon participants in an ethnographic approach to evaluating the value proposition of personal data by engaging with government, event organizers, and teams.

Through comprehensive interviews and surveys with participants of the events, we found that there is a strong predisposition in the civic space for individuals utilizing the ideas that Intel has laid out, and a belief that participants were implementing these ideas - over 50% of participants stated that their project combined open and personal data, and over 70% believed that doing so creates much or a great deal of impact. At the same time, the teams revealed some common challenges across geography, application domain, data type, and target user. By using a nation-wide hackathon, we were able to refine our understanding of the complex relationship of factors and technology capabilities that might lead to a data economy. For example, even sophisticated coders with clear goals were challenged to find relevant data sources, to implement the appropriate analytics, and to describe their value to less sophisticated end users.

Three key hypotheses emerged from the work that appear to be the foundation of a Data Economy:

1) Value to users explodes when data across personal applications, public sources, and third party sources can be combined through analytics

2) New developers are enabled to participate in value creation through a democratized data analytics platform that discovers new value across data sets

3) End users will be willing to contribute their data to the community of Data Economy stakeholders if the value gained is understood and the data's use is transparent, safe, and under the users’ control

To truly test these hypotheses and the possibility of a data economy, multiple ecosystem elements including the enabling technology, the creative developers, and the informed user must be advanced together.
Democratizing Analytics

This first challenge was to quickly and nimbly enable developers without data science expertise to access data analytics that could allow new insight to be discovered from combinations of data sets. Intel Labs is collaborating with ColdLight* – a company that provides insights from analytics for enterprise customers. Their Neuron platform is based on assembling and integrating big data from vast public and 3rd party sources as well as other contributing apps on the platform and automatically mashing up those data sources for automated analysis, predictive analytics and massively scalable simulation capabilities using next generation machine intelligence technology. ColdLight partnered with Intel to adapt their Neuron* platform to integrate personal data created by Apps. This means there is no need for any custom programming, statistical modeling or other analytic activities from the App developer; an app can be turned into an 'InsightApp' with a few simple API calls to Neuron.

Data Services Accelerator

Intel and SecondMuse again collaborated to create the Data Services Accelerator, an innovation pipeline to support and accelerate early-stage projects - many of them emerging from civic hacking initiatives - and foster their engagement with the value of personal data and new value creation for end-users. The Data Services Accelerator selected six teams across a spectrum of technical capability and project maturity in order to understand the challenges of working with data and analytics throughout the startup life cycle. The Data Services Accelerator is supporting their engagement with advanced analytics as well as mentorship and guidance that will take them from their early stage towards realizing the potential impact they can have in the world.
The Data Services Accelerator began by deeply understanding hundreds of projects created throughout National Day of Civic Hacking, and working with high profile innovators that emerged to identify additional projects. Out of these hundreds we engaged with over forty projects for pre-evaluation, conducted initial interviews with 22 projects, completed more in-depth interviews with 13 of those projects, and ultimately decided on 11 finalists who went through an additional round of interviews. Of those finalists, we chose six teams that ranked best against our four main selection criteria:

- Project Potential - A clear hypothesis about end user value through the analysis of combined datasets
• Data Potential - Potential for the project to generate data for use with Intel's analytics platform, and to create value for individuals through it.

• Scalability Potential - Sustainable economic model, either for profit or non-profit, for stakeholder involved in a solution to a problem

• Team Potential – enthusiasm to embark on an experiment with Intel and SecondMuse to catalyze a new data economy

The Teams

These projects represent a range of data readiness, technical depth, and focus topics. This diverse portfolio allows us to test how users embrace the shift in personal data ownership in multiple domains and explore a variety of value propositions and business models. And there is a reasonable hypothesis that each application's data, through the power of predictive analytics, potentially benefits the other applications' utility to the end user. The projects are:

• **D.R.A.T. (Disaster Recovery Assistance Tool)** - Connecting first responders and residents to vital resources in the event of a natural disaster through data-based coordination of disaster recovery services, programs, etc.

• **Logawi** - Uncovering patterns in language that explain behavior, combined with other data such as physical activity, driving patterns, nutrition, etc., to help people to evaluate outcomes, make better decisions, and improve well-being.

• **OMG Transit** - Helping people get from point A to point B more quickly without a car by drawing upon real-time data from public & private transit systems, bike/care sharing services, etc. and applying predictive analytics to account for likely delays.

• **Oyster** - Providing strategies and mentors to help a person advance their career by combining data such as academic performance, personality, crowdsourced career paths and the local job landscape.

• **Public Good Software** – Creating data-driven civil service profiles to strengthen ties between people and public service organizations, help people connect with causes and communities, measure their impact, make the most of their time and money.

• **Purple Binder** - Helping people connect to social services using data from service providers and individual users to identify needs, make recommendations, and centralize services on a single platform.
Innovation Pipeline Summit

With the selection process complete, six projects are well positioned to begin to test the value hypotheses of the data economy. Following a short phase of exploratory and planning work, the Data Services Accelerator teams came together in December 2013 for an Innovation Pipeline Summit – a multi-day event in Portland to foster collaboration between the teams and Intel. The Summit also brought together other domain experts who are stakeholders in the data economy and who provided guidance and insights about the technical, business, policy, and social aspects of personal data.

Demo Day

In April 2014 Intel brings the six teams to Santa Clara, CA for the Data Services Accelerator Demo Day. The audience of Intel employees, external thought leaders, press, investors, and foundations will hear from Intel, government and industry experts as well as see live demonstrations of progress from each team.

D.R.A.T. (Disaster Recovery Assistance Tool)

The team will demonstrate a federated data store of programs and services that provide technical or financial aid in the event of a disaster. The resources are categorized by the type of aid they provide, their specific region, a specific disaster, and the type of entities the resource provides for. The central portion of DRAT is a database with an API (application programming interface) layer. This application contains, tracks, sorts, searches all of the various programs and services available. The second part is a sample application that consumes the data provided by the DRAT API, focusing on coordination of individual engagement with disaster relief efforts. DRAT will be demonstrating their backend growth and prototype front-end application built on their platform. DRAT is an early-stage, technically skilled team.

Logawi

The team will demonstrate an application that combines the power of language, physiology and location to deliver practical insights to improve an individual's health and wellbeing. Logawi's mission is to uncover patterns in language that explain behavior. The aim of their product is to help people make better decisions and evaluate outcomes. Logawi uses linguistic, behavior science and analytical expertise to measure the complex psychological constructs of language. The app uses mixes big data and personal data to better understand behavior. Logawi is a later-stage, technically skilled team.
OMG Transit

The team will showcase a real-time public transportation location website that is usable from a computer or mobile phone. The interface is clean and dynamic. OMG Transit began the Data Services Accelerator with a sizable user base which has grown four-fold in recent months. The company has been growing as well, has been establishing partnerships with different transit providers, and is about to launch its first mobile app. OMG transit will be presenting their progress and demonstrating their novel value creation in the space of multi-modal transit applications. OMG Transit is a mid-stage, technically skilled team.

Oyster

The team will walk the audience through their design for an application focused on taking personal data such as school performance, personality, career goals and the career landscape in their area, and combine it through analytics to provide suggestions for how that person can advance their career. The application also matches the person with volunteer career mentors to help guide them in the post education / pre-employment phase. The team will also present their value proposition, and plans for growth. Oyster is an early-stage, non-technical team.

Public Good Software

The team will demonstrate their application and the various pilot projects started with clients during the Data Services Accelerator, as well as highlighting their personal data value proposition. Public Good Software's goal is for supporters of nonprofits to be able to create a 'quantified self' for their interaction with civil society, to facilitate setting goals and create a social profile for civic engagements. The team behind Public Good Software has unparalleled data insight and expertise given their experience developing Obama for America's fundraising and volunteering data engine. The toolset that Public Good Software is now creating will give organizations and individuals a 360 degree view of individual volunteerism, service provider activities, and calls for actions from civic organizations thereby deepening the relationship between individuals and civic organizations. Public Good Software is a mid-stage, technically skilled team.

Purple Binder

The team will present a platform that collects information about social service organizations. It is usually hard to find detailed information about these organizations and their programs at the community level. Purple Binder works with service providers and individual users to connect identify needs, make recommendations, and connect services to a centralized platform. Purple Binder was founded a year and a half ago and has won the University of Chicago award for social impact innovation of the year. The project has hundreds of unique users per week, a number of ongoing pilot projects, and a major project with the city of...
Chicago to collect and publish data about the services that the city provides. They will be demonstrating the expansion of their software, new directions as a platform, and opportunities for growth and impact. Purple Binder is a later-stage, technically skilled team.

**Summary**

The Internet age is relatively young and the value it creates for individuals is still being explored and invented. In just a few years powerful capabilities have been democratized for the benefit of users through computing and internet technologies – from communication, to search, to social and professional networking, to an emerging data economy. Sometimes, it is the technology that advances to a state that it is capable enough, inexpensive enough, and easy enough to use that less sophisticated developers can participate. Other times, the business model changes such that new players in the ecosystem can deliver value sustainably (think of subsidized devices for content distribution). For the data economy to emerge in which the individual is at the center of the value creation equation, technology, policy, and business models must all must change together.

The overarching Data Economy Experiment is breaking new ground by catalyzing multiple changes simultaneously. The vision is a future in which the user has control and agency over his/her own data. Advanced analytic capabilities would be provided to allow new developers to enter the ecosystem to focus on delivering value through their domain expertise (vs. analytics expertise). The business models may not rely on advertising dollars. There would be a focus on transparency of data use, data openness, and digital trust, with technologies introduced over time to enhance these elements. The current manner in which data is managed and monetized does not easily allow for these factors to change independently. It is only through simultaneous realignment of all factors toward a new goal that the desired system can be catalyzed. The Data Services Accelerator participants are at the forefront of driving this change and defining the new data economy.

While initially small, the Data Economy Experiment employs the minimum viable platform to begin to test the key hypotheses of cross-data value, democratized analytics, and end-user centrality. In addition, the Data Services Accelerator project addresses a missing piece of the civic and social tech space through a deep connection with the untapped value of personal data and accessible data analytics. This process supports widespread social impact efforts, uses those efforts as a platform for finding innovators, and deeply engages with a those innovators to explore and realize the value proposition of the Data Economy Experiment.