A Data Analytics Journey at the Los Angeles County Department of Environmental Health

Location: Los Angeles, California
Interviewee: Stuart Rekart, Principal Information Systems Analyst
Health Department: Los Angeles County Department of Public Health
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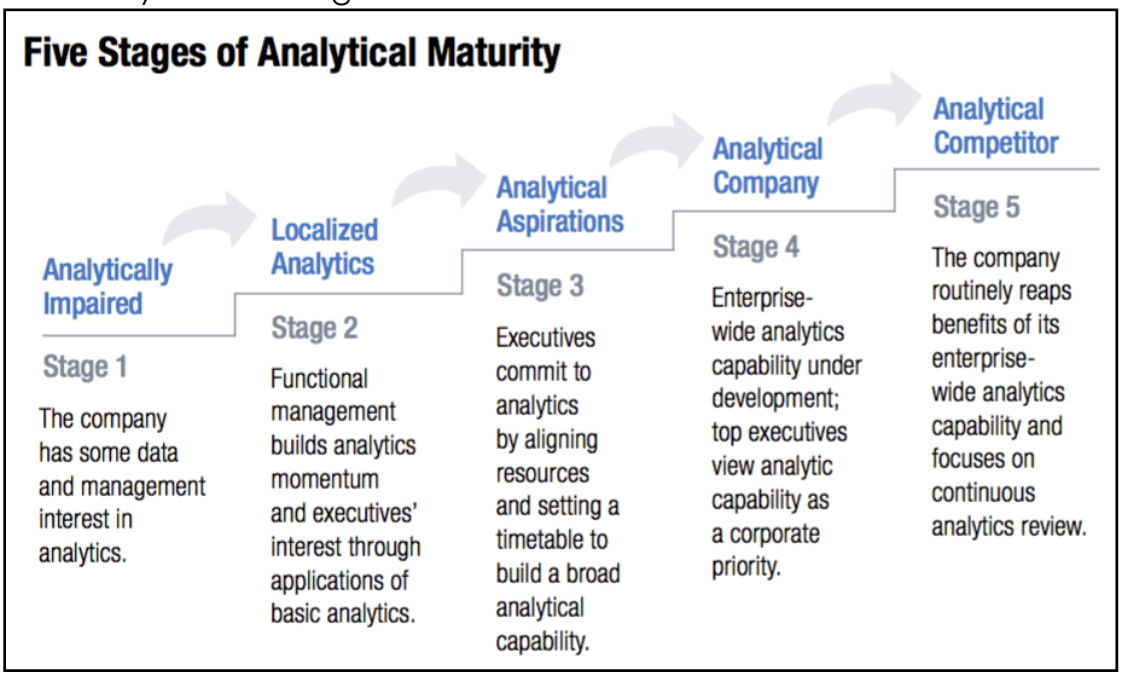
Background:

The Los Angeles (LA) County Department of Public Health serves over 10 million people and its Environmental Health Department employs around 800 people. LA County's Department of Environmental Health receives a lot of public data requests and many of its data-related activities are driven by the public, as well as by media requests. The department has implemented an open data portal and is in the process of piloting data dashboards for the public. The goal is to operationalize data analytics to be a part of regular business operations and to develop the department's "analytical maturity" as described in the SAS Analytics Maturity Model (Figure 1).

Figure 1
SAS Analytics Maturing Model



Source: SAS Institute, Inc (www.sas.com).

Activities and Accomplishments:

Open Data and Dashboards

LA County is committed to being transparent and sharing its data in a variety of ways that allow the public to easily access this information. It has been involved with Yelp for over three years and shares restaurant inspection data through the LIVES (Local Inspector Value-Entry Specification) standard, which populates inspections scores on Yelp review pages and has been very successful in engaging the public. The department posts results from pool, housing, food truck, and restaurant inspections, along with closure information for these health programs on its website. In addition to sharing data on a case-by-case basis, the department works to share its data en masse through an open data portal, where data are free, accessible, and available in a format that anyone can download directly to their computer (or access via an Application Program Interface [API]) to use however they like. This portal is especially useful for media and academia, who study this data to identify trends.

In addition to an open data portal, LA County is developing dashboards for consumers and restaurant owners to display data graphically. The dashboards are useful and popular, and a lot of potential exists in presenting data graphically for better understanding. LA County hopes to expand its use of dashboards internally and externally. The dashboard example in Figure 2 is a simple presentation of an informative dashboard; however, it contains a wealth of information compared to a key performance indicator (KPI) represented by the dotted line. For instance, the lowest measurement below demonstrates that a staff member averaged 329 minutes of activity against a KPI of 300 minutes over 16 work days.

Figure 2
Dashboard Example of Staff Activity Measured Against a Key Performance Indicator

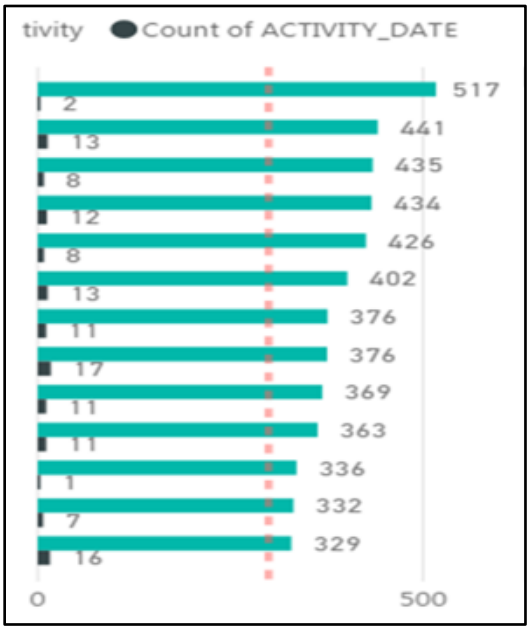


Figure courtesy of Los Angeles County.

Operationalizing Data Analytics

The energy around data analytics grew this past year with the presence of a FUSE Corps fellow at LA County. LA County currently uses SAS and SAS Visual Analytics analysis software, and with the fellow's leadership, it began exploring Power BI Desktop, a free tool that is included in the Microsoft 365 suite that makes it easy to create graphs and charts with drag and drop functions. The software has free online trainings and staff are encouraged to play around with the software and not be afraid to fail. Moving toward data analytics and visualization has required staff to clean their data as it is very easy to spot incorrect data when it is translated to chart or graph format. LA County learned that data cleansing is critical to accurate visual representations of data.

The next goal for the program is to operationalize data analysis activities so that data analysis and visualization become a normal part of business operations. This process requires a combination of information technology (IT) and business thinking. The key to data analytics is for executives to answer the questions, "What kind of problem are we trying to solve and what kind of data would help us solve the problem?" A cultural shift in thinking about reporting and analytics is required, realizing that analytics can help anticipate what might happen in the future, considering what changes can be made based on that analysis, and then implementing and measuring the success or failure of that change. This continuous

process improvement mindset identifies what can/should be measured and then tracks the impact of change to alter and improve future outcomes.

Culture Shift

To help shift the culture in the department, LA County anticipates developing an analytics council to help executives understand how powerful data are, and to help managers, leadership, and IT staff engage the council to help solve problems. The council will utilize available data to make decisions to demonstrate to staff how a data analytics cycle can work. The goal is to be a data-driven analytics organization, which requires business, process, and organizational changes. "Culture changes because people change, and people change because leaders change," Stu Rekart stated. The foundational goals of the council are to identify data analytics successes through pilot projects, get tools in place, start to get more people involved, and gradually have an analytics mindset feed into every corner of the organization, which will likely take years.

Challenges:

Making data public has many advantages, but added transparency also creates opportunity for misinterpretation of data. To address this issue, LA County aims to make its data as accurate as possible by implementing data quality control into its business processes. This process aids in catching data errors, especially when creating data visualizations, and enables data correction in a timely manner to create accurate dashboards and perform data analysis.

LA County's most recent data analysis efforts have been performed using Power BI. While Power BI is a relatively easy tool to use, it also has challenges for a large organization like LA County. For example, all data for LA County's pilot projects so far must be manually extracted and loaded into Power BI, which takes time. There is also a question of the software's scalability—while it is a great tool for a few people to use, it might be a challenge to have it operationalized and utilized within the whole department. There is also a lot of time that goes into the process between inputting data into the system and getting it in shape to present to a user in a visual format.

There is also a need for staff training and skillset development, as it is tough to transition from being a beginner user to an expert user of data analysis software. There are currently a couple people who can do data analysis, but if LA County wants this process to be operationalized, it will need to train more people. It would like to also operationalize data analytics within the entire LA County Public Health Department (PHD) to serve as a model for other divisions to have the same analytics capabilities. The skillsets in place within LA County

DPH will need to expand and grow to serve other public health division needs, as well as the LA County DPH organization as a whole.

Perspectives/Next Steps:

As LA County's Department of Environmental Health continues its journey of operationalizing data analytics, it is committed to exploring how achieve this process most effectively, including an automated update of its data into the Power BI platform. The department is committed to engaging and working with leadership to implement a culture change, as well as developing various pilot projects to show the potential of data analysis and potential impact on public health. Figure 3 illustrates the how LA County envisions its "Smart Environmental Health" journey.

Figure 3
Los Angeles County Department of Environmental Health's Smart Environmental Health Journey

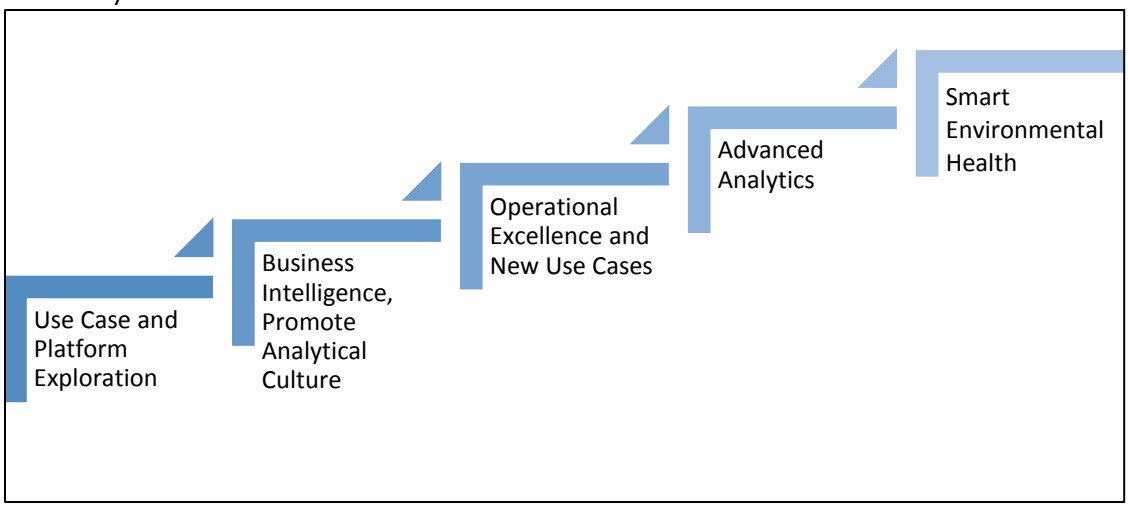


Figure courtesy of Los Angeles County.