

The Rise of Illumin8 Active Intelligence:

Natural Language Processing and Generation (NLP, NLG), Personalized KPIs, Alerts, and Chatbots

By Scott Stratton, Pulse8's Chief Data Scientist and Vice President, Product Analytics

My Data Systems Should Help Me, Not Drown Me

Today's systems mostly help Jerry Maguire: "Show me the money!" Packaged as snazzy dashboards with various charts, tables, and filters, such systems remain *passive*. You must click, filter, and sort to find what you need. You must find context to interpret what you see. You must decide who needs to know about or to act on this – and, ultimately, you must select, package, and alert them. The insights themselves may be great, but the effort needed to find them can be demanding, much less the effort required to turn the data into action. Out of the office or away from your laptop? You hope to find someone in the office who can respond – which too often happens too late and at times with not what you requested. As the amount of data explode, so do the demands on your time. Current technology worsens your plight.

Enter the era of Active Intelligence. These are technologies that summarize, contextualize, and highlight what you need to know on your behalf. Technologies that will find the differences that truly *make a difference* and merit attention. Technologies that translate verbal requests into textual and visual results, within moments at any time, any place. Data are harnessed, transformed, and empowered to drive actions.

Pulse8's new business intelligence platform unifies and unleashes the benefits of these technologies.

Give Me the Headlines and the Context to Understand Them

Unless you work with your data daily, it's difficult to decide when a number or trend warrants action. You need a knowledgeable analyst to walk you through the metrics and key context, but analysts can differ in how they view and interpret what they see, and they are seldom available when you most need them.

Natural Language Generation (NLG) is an "analyst in a box" that interprets those data, highlighting central tendencies, trends and rates of change, extreme values, and even volatility among the data. This "analyst" is available 24/7 and interprets the data in a consistent manner.

Along with being a huge time-saver, our NLG technology brings many more benefits:

- **Doesn't fatigue or bore:** every time you filter, sort, or alter related items it *reinterprets automatically*
- **Just the facts, ma'am:** Pithy paragraphs or bulleted lists distill the data's essence, and export easily with the graphics into reports and slide decks
- **Go paperless:** Why bother with static reports and slides when you can use the live dashboards to present and explore your findings in real-time with the larger group?
- **Cater to your inner nerd:** Headlines or geeky regression and other stats? Choose, change, learn.

Alert Me When Action Is Warranted

If you don't look at normal dashboards each time they refresh, you won't know what needs attention. Can't machines learn what's important to you and alert you only when you need to know? The Illumin8 Active Intelligence platform can!

Pulse8's new intuitive Illumin8 platform brims with key performance indicators (KPIs), but the value and level of detail at which action is needed varies by your role and level in the organization. Click that KPI and add it to a custom dashboard. Set, for example, a low "concern" value and a high "target" value – or tell Illumin8 to "learn" what is normal variation and to alert you when amiss. Depending on your role, you can define one for each group practice, product, medical condition, or whatever you need. This environment acts as a one-stop shop for *your* key metrics. Focus your newfound time on higher-value activities. Cascade KPIs and alerting through your chain of command so all work smarter and in concert. Welcome to *true* Active Intelligence.

I Need to Know This Now

Important questions often arise at odd times and places. Too often they occur when you are far from your laptop or somewhere that doesn't allow for calling necessary colleagues to retrieve the answers you need. When having precious data here and now can make a big difference, one needs an agent who can fetch what you need, 24/7, wherever you may be. Meet the Illumin8 "chatbot."

Chatbots combine NLP, NLG, and data query/BI technologies, and can function off one's laptop, mobile phone, or other smart device. Dictate or type in a request for the latest MA closure rates and RAF yield by Risk Factor Type, contract, and benefit plan. The bot's NLP technology "reads" this English request, translating it into a database query that the BI/secure communications component transmits to and receives from the platform. The chatbot displays the results in table form, graphs, and even bullets or text using the NLG technology.

But all of that is essentially irrelevant to you. What you care about is getting the answer to your plain language question, in a readable format, as soon as possible.

The chatbot delivers all this and more. If you happen to know the name of the dashboard on which the desired data appear, you can request, "display plan member summary for payment year 2017 for the ACA Small Group market," and the bot will return the dashboard objects optimized to display on whatever device you're using. Perhaps more useful, the chatbot can go "behind" the dashboards, querying the underlying data — security-permitting — all without needing to first find an idle SQL programmer. The same capability applies to "paperless" meetings when you need data beyond what's on that dashboard. Welcome to real-time active intelligence.

The Bottom Line of Active Intelligence Technologies

Pulse8 loves innovative technologies, but they must ease your chain of pain to solve real-world problems. These game-changing technologies, applied thoughtfully, can transform plentiful and powerful data into active intelligent agents that provide focused responses to near-time data (KPI alerting), assist in the translation of the results (NLG), and understand normal speech rather than code-like prompts (chatbots). This is truly the next-generation of information-driven action.

About Scott Stratton

Scott Stratton is an industry leader in the design, development, and adoption of innovative analytic products.

He has received Computerworld's Global Best Practices in Business Intelligence and Analytics for his RationalIQ® product for Fortune 100 clients at Medco; URAC award for applying Six-Sigma analytics to reduce diabetes medication errors (also Medco); Creative Excellence Award from the International Foundation of Employee Benefit Plans for the nation's first urban CHIP program (GHI, in the South Bronx). For over 20 years, RightTrack® has enabled the U.S. and 85 other countries to plan and manage all Phase II-IV human clinical drug trials for Pfizer. Scott was Symmetry's first client of Episode Treatment Groups (ETGs), which he used for risk-adjusting provider analytics and as the foundation for his co-founding of Oxford's global fees-oriented specialty management subsidiary, a forerunner of today's CMS Bundled Payments for Care Initiative. Other innovations include segmentation models and analytics to improve quality and costs of cardiac revascularizations at CV-Sight and outcomes analytics for Medco's RationalMed® drug safety program based on integrated data for >10 million lives. His MPH thesis was part of the development of Resource Utilization Groups (RUGs) at Yale, now used by CMS to reimburse SNF care.

Scott has served as co-founder of CV-Sight, Vice President with Medco Health Solutions, Director at both Pfizer and Oxford Health Plans, and Assistant Vice President with GHI (now Emblem). Scott earned a Master's Degree in Public Health from Yale's School of Epidemiology and Public Health and a Bachelor of Arts in Philosophy from Carleton College. Additionally, Scott has been honored to serve on various state and national commissions, and was a founder of Yale's John D. Thompson Fellowship Committee. CIO, American Demographics, and other periodicals have profiled him and he has published in the New England Journal of Medicine and most recently in the Journal of Clinical Oncology.

About Pulse8

Pulse8 is the ONLY Healthcare Analytics and Technology Company delivering complete visibility into the efficacy of your Risk Adjustment and Quality Management programs. We enable health plans and providers to achieve the greatest financial impact in the Medicare Advantage, Medicaid, and ACA Commercial markets as well as with Value-Based Payment models for Medicare. Pulse8 has developed a suite of uniquely pragmatic solutions that are revolutionizing Risk Adjustment, Quality, and Pharmacy



Program Management. Our advanced analytic methodologies and flexible business intelligence tools offer real-time visibility into member behavior and provider performance. Pulse8's products are powered by our *patent-pending* Dynamic Intervention Planning to deliver the most cost-effective and appropriate interventions for closing gaps in documentation, coding, and quality. For more company information or to schedule a demo, please contact Scott Filiault at (732) 570-9095 or scott.filiault@pulse8.com.