

A Non-Actuarial Look at Predictive Analytics in Health Insurance Past, Present and Future

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Predictive Analytics – Definition

- **Predictive analytics** is the practice of extracting information from existing data sets in order to determine patterns and predict future outcomes and trends. Predictive analytics does not tell you what will happen in the future.



Data



Machine Learning

(Statistical algorithms which crunch numbers and learn from data)



Predictions

Source: Predictive Analytics by Eric Siegel 2013

The Past

The Past.....

Payers routinely focused their activities on:

- Eligibility
 - Enrolment
 - Billing
 - Utilization
 - Claims
-
- Member behavior was relatively static and disconnected – sometimes ON sometimes OFF

Bottom line - although there was a lot of data, it was geared toward managing the insurance policy. That is, it was heavily administrative and transaction oriented. It was designed to ensure that copays, enrolment, benefits ID card etc. were correct.

The Past.....

Payers were not very sophisticated at:

- Managing (and making use of) that vast amounts of data they had
 - Integrating that data into models and capabilities
 - Analytics
 - Integrated and Dynamic Reporting
 - Information sharing, especially with Providers (and members)
 - Expectation Management
-
- Mobile and retail experiences (as we know them today) were virtually unheard of

Bottom line - a relatively static world that revolved around them, was controlled by them and for them. Lots of data but no real idea of what to do with it and how to derive member benefit from it.

The Past.....

Analytics (frequently traditional actuarial methods) in particular was focused almost solely on the various standard business functions:

- R&D, Product Development
- Financial analysis (CapEx, Sales forecasting, Rates and Reserving etc.)
- Claims and trend assumptions
- Compliance
- Health Outcomes
- Reporting Automation
- Business Intelligence
- Fraud Waste and Abuse

Bottom line – Individual departments had their own analytics needs and services and usually procured them separately and for themselves

**Wasn't there anybody
doing anything different ?**

The Past.....

YES.....there were some Payers, doing (what at the time were) some innovative things in the space:

- Predictive analytics to identify candidates for disease management
- Limited enhancements to underwriting (small group)
- Some customer-related applications
 - Member or patient engagement
 - Health management (event avoidance)
 - Mobile tools
- Some use of “EMR’s”

Bottom line – It was early, but they were trying different things and were having some success

The Present

The Present.....

Today, payers are still focused on:

- Eligibility, Enrolment, Billing, Utilization, Claims (and all that data)

But they are also working with the data they have, to better understand:

- The “always ON” and interconnected world
- The mobile and retail mindset
- The need for stickiness and engagement
- Brand Awareness and Preferences
- Member behaviour, habits and risk profiles
- Risk Adjustment
- Network Optimization
- Relevant information sharing with members and providers

Bottom line – the ecosystem is still rather transactions focused but evolving slowly in thought, awareness and practice

The Present.....

However, although slow and steady progress is being made, in general, Payers still:

- Operate in silos
- Do not have a holistic member view
- Do not have integrated and dynamic reporting
- Have IT that is largely unincorporated with mobile, social media etc.
- Are not behaving in a retail-like manner

Bottom line - it is still a world still revolving around individual departmental needs, but they are aware of the need to share information, change and grow

The Present.....

Analytics in particular is still focused on traditional methods and uses:

- R&D, Product Development
- Financial analysis (CapEx, Sales forecasting, rates and reserving etc.)
- Claims, Trend Assumptions, Compliance and Health Outcomes
- Reporting Automation and Business Intelligence
- Fraud Waste and Abuse

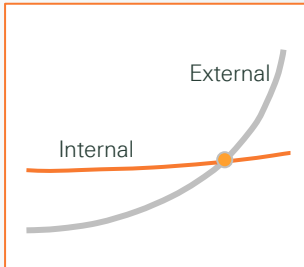
But also trying to better understand

- Acquisition, Retention and Advancement
- Direction and Pathways of Care
- Quality, P4P and FFV
- Risk and Risk Adjustment
- Network Optimization and Provider Profiles

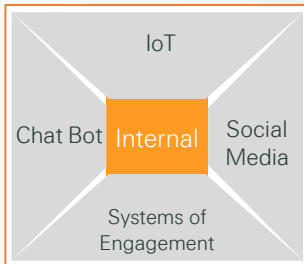
Bottom line – Analytics is slowly being deployed in ways that will help inform them of what a **CUSTOMER** truly wants and needs.

So Where Are We Now ? What's Different ? 3 Things

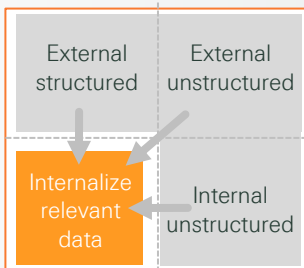
Reason 1: The Data and technology landscape has more meaningfully evolved



More External Data Available: External data is rapidly growing in volume and relevance, which will cause a gradual shift from using internal data to using external data



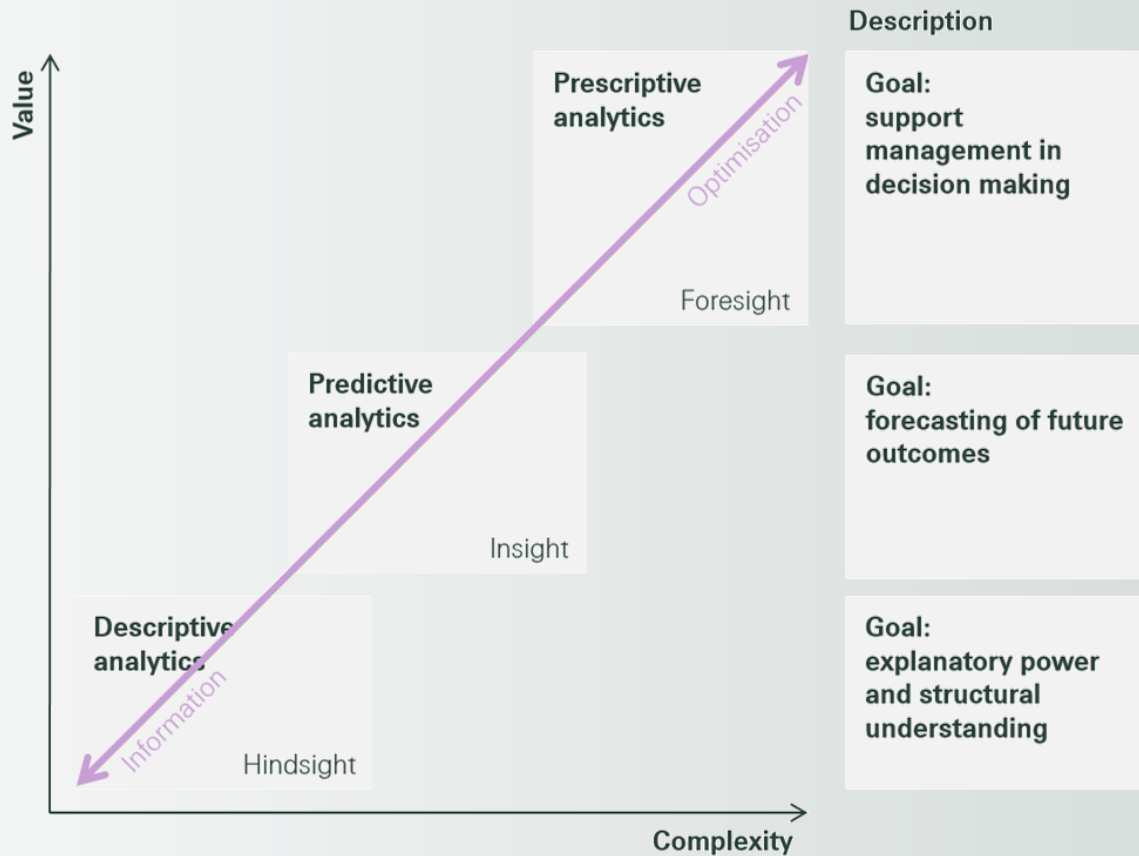
New Sources of Data are Evolving: Wearable devices, smart homes, mobile phone apps, chat bots, social media, electronic medical records and other things will make it possible to continue to collect more and more data



Technology Advancements: Advancements in processing power and data exploitation are enabling companies to fully exploit external and unstructured data

Reason 2: Many companies have already realized the trend of DESCRIPTIVE analytics; Predictive analytics is the next natural step

Progression from Descriptive to Prescriptive Analytics

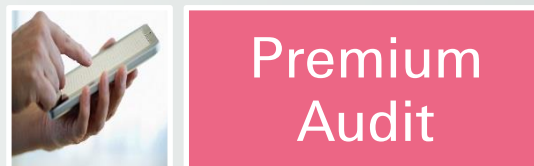


Reason 3: Predictive analytic tools and Big Data platforms are widely available for data scientists and no longer limited to research institutes



So How Do We Use This in Insurance ?

Typical predictive analytics use cases in insurance



The Future

Common Strategies and Areas in Insurance where Predictive Analytics is playing a key role

- **Customer** Centricity
 - Customized products and services
 - Long term customer engagement and stickiness
 - Scaling products and services to untapped markets
 - Up-Sell and Cross-Sell
- Accelerated and Frictionless Underwriting
- Accelerated and Frictionless Claims
- Eliminating Fraud, Waste, Abuse

The Future of Predictive Analytics.....in Health Insurance

Payers will continue working to better understand:

- Eligibility, Enrolment, Billing, Utilization, Claims
- The connected world, the mobile and retail mindset, stickiness and engagement, brand awareness and preferences, habits and risk profiles etc.

BUT, they will also have a better sense for:

- Interaction styles and preferences
 - Retail Kiosk
 - In-person agent
 - Call Center agent
 - Walk-in
- Social Media presence
- Product Receptivity etc.

Bottom line – Analytics will play a HUGE role in stitching all this (the past and the present) together. Everyone will have a better sense of **YOU !!**

Analytics will help inform.....

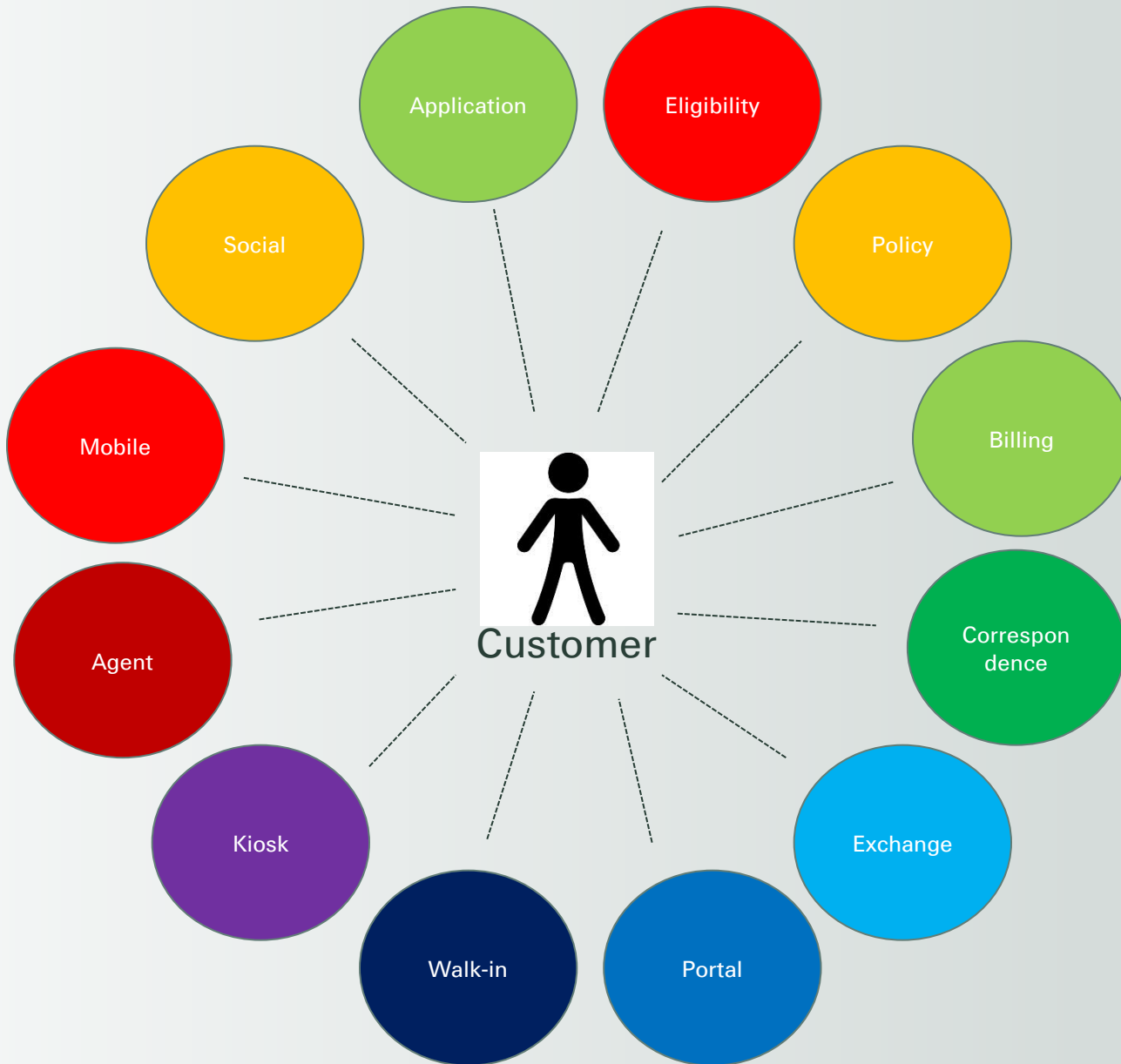
A more **CUSTOMER-centric** view

- Not Payer centric
- Not physician or hospital centric
- Not consumer or employer centric.....but **CUSTOMER** centric

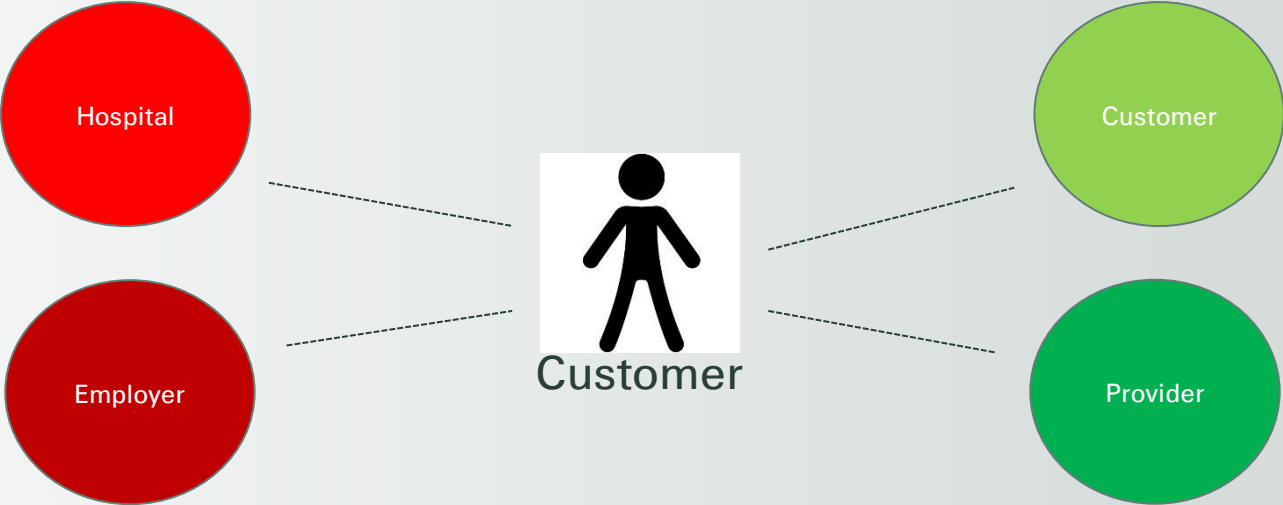
Payers will “speak the **CUSTOMER’s** language”, often in real time and in a manner they prefer. Responses will be:

- Personal
- Customized
- Specific

Bottom line – Analytics will go from the back room to the board room.



CUSTOMER Information Will Be Shared More Effectively



So That Everyone Better Understands

Customer Acquisition, Retention and Advancement

- Outreach type, time and timing
- How to improve rate of acquisition and lower cost per acquisition
- The feedback loop so as to better enable product design
- Reduce disenrollment

Direction and Pathways of Care

- Identify, prioritize and positively impact high-risk customers
- Increase receptivity to care management interventions
- Reduce unnecessary utilization and better manage costs

So That Everyone Better Understands.....

Quality

- Decrease or eliminate gaps in care
- Increase member MTM, adherence, clinical engagement
- Improve care coordination across people and platforms

Risk and Risk Adjustment

- Clinical coding, documentation accuracy to increase \$\$\$\$
- Improve provider engagement, coordination and payment for value

In Turn, This Will Lead To.....

Better insights and determinations on:

- Rating, wherever appropriate
- Insurability
- Chronic illness identification and treatment
- MLR improvement
- More effective outreach and opportunity for cross-sell or up-sell
- Strategic partnerships
- Distribution channels
- Etc.

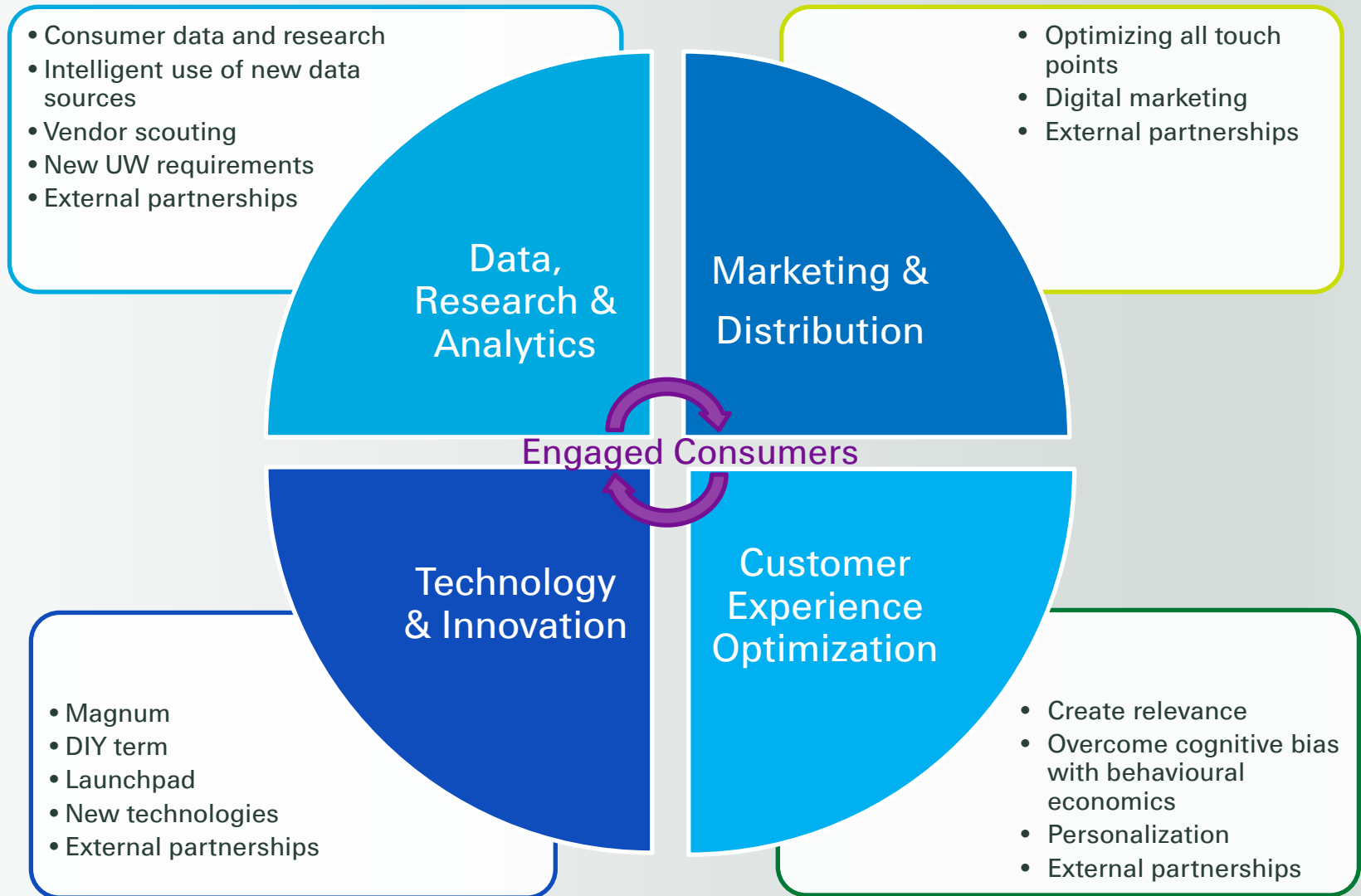
So What Are We Doing As a Reinsurer ?

Swiss Re Analytics in particular is focused on.....

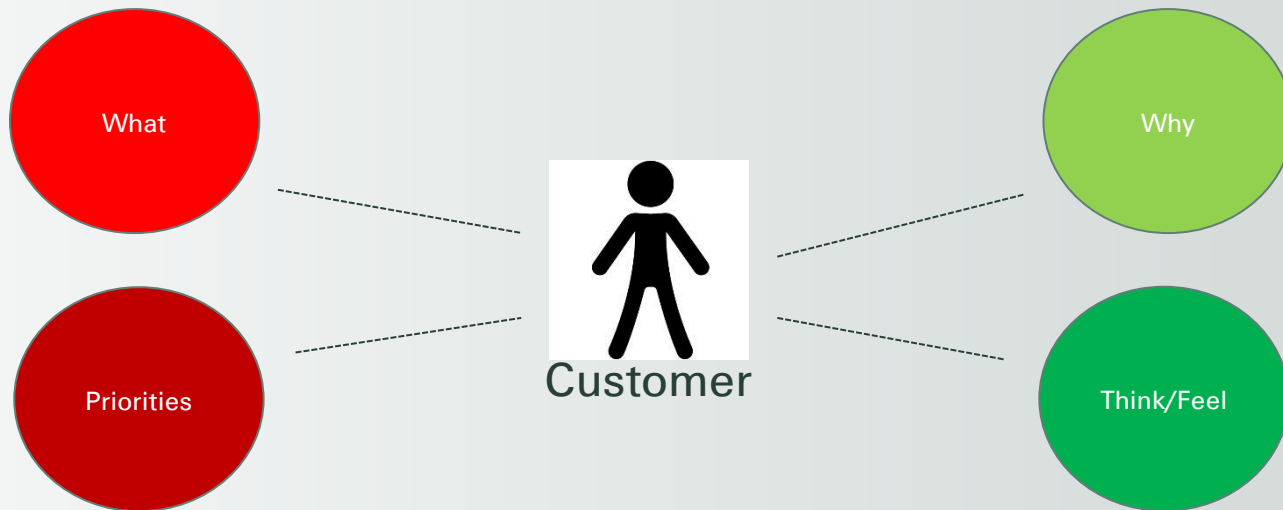
- Execution of the digitization and consolidation of data
- Global Team of Data Scientists that is aligned with business units
 - Team is tightly integrated with new strategic initiatives and identifying opportunities to leverage predictive analytics
- Latest technology being leveraged with an agile and experimentation culture
- Partnering with companies providing predictive models (e.g. Lexis Nexis, TransUnion, Deloitte, V12)
- Building predictive models for internal and external purposes
- Developing strategies to:
 - Improving access to consumers
 - Connect our clients to new distribution channels
 - Develop solutions and tools that improve the overall CUSTOMER experience.

Bottom Line - Helping our clients develop and offer products that provide meaningful value, close the protection gap, and grow.

And We Are Doing It Across Functions.....



But We Haven't Forgotten The Human Element



Case In Point

The Chronic Disease Map

The Future.....Case In Point.....The CDM

Mining Twitter tweets for up-to-date insights on disease trends and treatment experiences

➤ Background

- Global Health UW reliance on surveys and statistics to assess chronic disease risk

➤ Need

- Public medical reports provide some useful information on disease trend but are not timely and generally don't include customer sentiment



➤ Solution

- 60 million tweets analyzed with advanced text analytics to chart disease prevalence in several territories.....with filtering possibilities.

➤ Benefit

- CDM provides insights to chart disease and prevalence in different geographies and understand individual perspectives on trends and treatments. The real time data augments surveys.

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Via Our Healthcare Thought Leadership Blog

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