Data is the lifeblood of the industry and analyzing customer, product, channel, competitive pricing, risk, environment, weather or any other data relevant for insurance can create invaluable insight to help insurers differentiate themselves. More importantly, data mastery allows them to achieve breakout results in an increasingly competitive industry. As such, data is a strategic asset that needs effective management.

Business Intelligence (BI) and Analytics have been one of the top three business priorities for insurers over the last eight years, growing in budget annually. During the financial crisis of 2007-2009, insurers focused on cutting costs and one way to identify those costs was through analytics and operational reporting. As the economy improved, competition, growth initiatives and customer-centric initiatives broadened the need for analytics and BI for additional projects.

The focus for all of these projects was on BI and analytic tools instead of on the broader data mastery picture and how all these tools fit together. They failed to see how data mastery drives a coordinated, consistent and collaborative data strategy and how it adds value to the organization that can garner greater business value, competitive position and organizational success.

Today, carriers are realizing that they need to incorporate an enterprise data strategy, governance, senior management support and ownership and data quality initiatives to their data programs. They want to address the new "Big Data" challenges, but are struggling. This is why insurers must now aggressively begin to master their current "small data" challenges before "big data" overtakes projects and initiatives within the company.

This transition in focus and understanding has given rise and importance to the role of Data Mastery.

Data mastery is the leveraging of internal and external data (all types) to gain business insight which will increase revenue, decrease expenses, improve customer relationships and improve ease of doing business. Data mastery is more than just the tools to produce the insight, starting from Extract-Transform-Load (ETL) to data warehouses/data marts, reporting and analytics, data mining, BI presentation layer, GIS analysis, and of course, Big Data. It is the utilization of all of these technology elements along with people and process to create an overall benefit to the company.

While an integrated solution that provides all of these aspects of data mastery is very helpful, a mature insurance data model, predefined KPIs, analytics, dashboards, scorecards and insurance experience are also critical to success. Insurers need to include data governance, strategy, roadmap, skills, organizational structure, and data quality processes as well. This lack of insight and data mastery complexity and intricacy has left many insurers stumbling and confused as to where to begin, creating data chaos. What does the end state look like? What is the strategy to get there? What milestones can be established to ensure that a carrier is on the right path?
INNOVATION DATA MASTERY MATURITY MODEL

Innovation Group has developed the Innovation Data Mastery Maturity Model (IDMMM) represented in the picture below left helps carriers understand where they are today with respect to their enterprise maturity as well as their ability to gain insight from their data that they have currently available—structured and unstructured, internal and external. It enables them to better define the appropriate end state and develop a roadmap on how to maximize their data mastery investments. It provides a lens through which they can better position themselves to compete and evaluate their decisions.

The Innovation Data Mastery Maturity Model is a “handbook” for process improvement on the journey to data mastery. It provides the following key aspects to help you create and drive your data strategy on the journey:

- A Starting Point and a Checklist—Understand where you are starting out from and what you need to get you to your destination.
- A Destination—Know where you are heading. Have an end goal in mind!
- Milestones—Identify milestones on the way to your destination and make sure you measure progress as you go.

The IDMMM leverages the Capability Maturity Model Integration (CMMI) 5-level concepts. The CMMI is a process improvement program developed at Carnegie Mellon University to help companies gain greater efficiencies and business value. The levels in the CMMI model are: Initial, Repeatable, Defined, Quantitatively Managed and Optimizing. To reach the highest level requires an enterprise commitment, investment, strategy and roadmap. The benefits were a much more effective and efficient delivery work force.

While the CMMI is focused on process improvement, the IDMMM focuses on business insight from a carrier’s internal and external data. Reaching Level 5 (the highest level) requires maturity across:

- Strategy and governance
- Management and people
- Data integration
- Data Quality
- Technology

The IDMMM defines how the all the capabilities of a data mastery solution are related and what is required to move forward. Also, it describes the business value a carrier can expect to achieve at each level, as well as the risks of not doing anything at the lowest levels, such as compliance risks. Each level as well as each cell of the model builds on the foundations created. A carrier may well find that it is at Level 3 with respect to technology and tools, but only at Level 1 for management and resources. As with CMMI and related maturity models, a mature organization has mastered people, process and technology considerations. The IDMMM has five levels as shown in graphic above. The details for each level are shown in the table below.
## INNOVATION GROUP DATA MASTERY MATURITY MODEL (IDMMM)

<table>
<thead>
<tr>
<th>LEVEL</th>
<th>STRATEGY/GOVERNANCE</th>
<th>ORGANIZATION/ MANAGEMENT/ RESOURCES</th>
<th>DATA INTEGRATION</th>
<th>DATA QUALITY</th>
<th>TECH/TOOLS</th>
<th>BUSINESS VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Innovative Leading Enterprise</td>
<td>Enterprise Data Strategy aligned/ ingrained</td>
<td>Business Control; IT support</td>
<td>Business driven (all data)</td>
<td>DQ part of everyone’s job</td>
<td>Full, integrated DM solution</td>
</tr>
<tr>
<td>4</td>
<td>Knowledge Driven Enterprise</td>
<td>Enterprise Data Strategy defined</td>
<td>Bus. Sponsor; CIO control</td>
<td>Non-trans. Data; external data</td>
<td>DQ improvement program in place</td>
<td>DM, Pred. analytics, Big Data, GIS analysis</td>
</tr>
<tr>
<td>3</td>
<td>Information Driven Enterprise</td>
<td>Some Enterprise Metrics; No strategy</td>
<td>Enterprise CIO; dev. Enterprise Scientists</td>
<td>Key transactional data</td>
<td>Enterprise DQ group formed</td>
<td>Central DW; automated ETL; DQ tools</td>
</tr>
<tr>
<td>2</td>
<td>Data Driven Siloes</td>
<td>LOB focused</td>
<td>LOB VP/LOB focused</td>
<td>LOB DW / DM</td>
<td>Limited DQ</td>
<td>Operational Reports</td>
</tr>
<tr>
<td>1</td>
<td>Data Chaos</td>
<td>Doesn’t exist</td>
<td>Dispersed</td>
<td>Data Fiefdoms</td>
<td>No Enterprise DQ</td>
<td>Excel focus</td>
</tr>
</tbody>
</table>

### LEVEL 1: “DATA CHAOS”

Organizations at this level are at a great risk of compliance failures and are driven by intuitive decisions. No one trusts the data or reports at this level. Descriptors for organizations at this level include:

- Laggards
- Paper based reporting
- “I’ve always done it this way”

- Most of the reports wouldn’t have changed for years
- Data definitions are inconsistent and many reports are not even used

The business value is primarily focused on monthly reports, typically financial, which use stale data, typically 4-8 weeks old. The result is minimal business value in isolated areas that could create compliance risks.
LEVEL 2: “DATA DRIVEN SILOS”

Organizations are beginning to incorporate good data mastery principles, but within silos or functional areas. There is no enterprise approach or consistency. Descriptors for organizations at this level include:

- No enterprise approach/best practices
- Inconsistent value within functional areas/business units
- Operational reports are beginning to emerge
- Data “Specialists” within departments
- DM projects within functional areas only

The business value is primarily focused on operational measures and localized efficiency gains, but compliance risks remain.

LEVEL 3: “INFORMATION DRIVEN ENTERPRISE”

Organizations begin to see benefits at the enterprise level of the data programs and solutions. The organization is the beginning to fix dirty data and creating data consistency through a well defined data analytics environment. Descriptors for organizations at this level include:

- More Market Intelligence (MI) than Business Intelligence (BI).
- Have a single repository but no advanced tools to take real advantage of it.
- Sitting on transactional systems “operational reporting”, but most people don’t really understand the difference or value between this and “more strategic” analytics.

The business value is primarily focused on consistent, accurate enterprise reports.

LEVEL 4: “KNOWLEDGE DRIVEN ENTERPRISE”

Organizations at this level are seen as leaders in the industry. They have not only integrated their data, they view their data and available external data as an asset and differentiator. These carriers are leveraging data across the enterprise, developing or hiring internal data scientists, and moving towards a business focus on the use of their data mastery efforts. Descriptors for organizations at this level include:

- Data scientists looking at clustering, multivariate analysis, trending, what-if analysis, data mining, etc. at enterprise level
- Investment in human resources to provide highest business value
- Focus on providing the right information to the right person at the right time to make improved business decisions (automated or manual)
- Enterprise budget for DM improvements

The business value is based on knowledge driven decisions and having analytics provide input into new products, new markets and customer loyalty or experience.

LEVEL 5: “INNOVATIVE LEADING ENTERPRISE”

There are few organizations at this level but they are not only leading the industry, but setting the example. Data quality is part of everyone’s job description and data/information/knowledge is made available to whomever or what system needs it at the right time. All decisions are data driven. Descriptors for organizations at this level include:

- Data strategy/governance/best practices flow seamlessly down the organization/systems
- All data is viewed as a first-class enterprise asset and easily accessible to those that can use it to add business value
- Constantly finding new business insight and leveraging it in top and bottom line decisions
- All data treated equally, small and Big Data

The business value is based on establishing and growing ROI on analytic efforts and results, identifying dynamic reactions to market changes, customer changes, new product ideas and becoming proactive in response to catastrophe events or other areas.
WHAT LEVEL IS RIGHT FOR AN INSURER?

Not all carriers will want or need to strive to the highest level, Innovative Leading Enterprise, but all will need to get to Level 3 to survive. The IDMMM will help them understand where they are today, where they want to be in the future and the steps they need to take to reach their goal. While Innovation Group offers a leading data mastery solution, the technology alone is not enough to compete in the changing insurance world.

The combination of a data mastery model, underpinned by organizational leadership and commitment, must be part of every project or initiative and will empower the organization with accurate and timely data. That data is transformed by analytics and BI tools into relevant and actionable information that can be rapidly delivered where it counts – to executives and business staff with the knowledge and wisdom to do something about the insights uncovered.

The data alone, which carriers have in very large quantities, does not provide any value to them. As relationships, or meta-data, are applied to the data, carriers can now find operational inefficiencies and issues in the information. An insurance data model provides these relationships across the insurance life cycle of a carrier’s data. While data transformed into information can provide increased value or ROI to a carrier, transforming the information into knowledge through people with insurance experience enables even greater business insights to increase revenue, decrease costs or improve customer interactions. Data mastery solutions that put information at the finger tips of these business users creates the higher ROI opportunities. Finally, as shown in the diagram below, actuaries and data scientists, leveraging both industry knowledge and advanced analytic capabilities, can transform that knowledge into wisdom to achieve the highest ROI possible. Data mastery solutions that facilitate this knowledge to wisdom transformation are key to carriers due to the small number of individuals who can provide this function.
INSURER ANALYTICS – A DATA MASTERY SOLUTION

Data Mastery is a journey, not a project or program. Data Mastery maturity will be the key characteristic of leading insurers over the next 3-5 years. As such, Innovation Group’s data mastery solution which is underpinned by Insurer Analytics and leveraging other industry solutions, provides insurers with a powerful platform to use on their journey to the level appropriate for their organization.

The picture below outlines Innovation Group’s data mastery solution within the entire data mastery space. It begins with transforming the data from a carrier’s source system to Insurer Analytics data model (the ETL process). Insurer Analytics uses Microsoft’s SQL Server Integration Services (SSIS) for this purpose. Analytics uses a mature data model based on the Kimball Dimensional model that is optimized to support user access to queries while at the same time delivering high performance. The data model has also been aligned with ACORD’s IIW data model to incorporate the insurance life cycle. The solution adds facts and dimensions to the tables to create the analysis cubes using SQL Server Analysis Services (SSAS). Insurer Analytics provides OOTB (Out Of the Box) over 500 analyzes, dashboards and KPIs for claims, policy and the entire operational life cycle.

While Insurer Analytics can meet most of the needs of a full data mastery solution, there are additional capabilities that Innovation Group Partners can provide and it can integrate with other vendor solutions. These include geospatial analytics (i.e., ESRI, SpatialKey), financial reporting solutions, simulation, Excel requirements, and predictive model solutions (i.e., IBM’s SPSS and SAS). There is also on-going research and solutions for unstructured data, such as social media, diaries, document analysis, etc., that are outside the capabilities of Insurer Analytics.

Finally, not shown in the diagram below, is the use of analytics and real-time reports within policy, claims or other operational systems.

MASTERING OVER YOUR DATA - INSURER ANALYTICS

Enterprise Data Strategy / Data Governance
INSURER ANALYTICS: INNOVATION GROUP’S DATA MASTERY SOLUTION

With the speed of change across all disciplines continuing to accelerate, insurers must be agile and innovative in their response to the business demands of today and the future. Leaders in this market are breaking from a legacy paradigm to build the “future-ready insurer”, inclusive of a modern business strategy, operating model, and business solutions. By embracing innovation, disruption, and new solutions to manage and leverage fluctuating risk factors, insurance market leaders are creating a new paradigm for competitive advantage.

Insurer Analytics empowers your business. While insurers may not be able to control external factors such as climate change, society, the economy and human behavior, they can though use software, data and insight to better understand the impact external factors have on the business of insurance. Insurer Analytics provides access to accurate, timely, relevant BI to deal with these challenges. Insurer Analytics transforms data into relevant and actionable information that can be rapidly delivered where it counts – to executives and business staff with the knowledge and wisdom to do something about the trends and issues un-covered. And ... you can be up and running with your data in three months and well on your journey to data mastery!

“Microsoft’s BI technologies are receiving accolades from analysts and customers for simplicity of use, robust and dynamic visualization and the ability to empower the business with self-service BI while IT maintains control of the data. Now we’re seeing Innovation Group - a great, strategic partner with insurance expertise - using that technology to deliver and continuously improve a solution tailored for P&C carriers globally. We believe it’s the right solution delivered at the right time to address the business visibility and insight that the P&C business demands.”

Tony Jacob, managing director, Worldwide Insurance at Microsoft Corporation

“Our implementation of Insurer Analytics is the first step in our transformation initiative. The ability to quickly establish our data management framework with Insurer Analytics by using our legacy repositories helps us derive more business intelligence for our business, but also provide insights to our future implementation phases for Innovation Insurer. Our success is evidence of a strong partnership with Innovation Group, the strong business value of their solutions and the innovative culture and support of WCSI.”

Harold Williams, SVP, Mountain West Farm Bureau