Data Driven Internal Audit
What to do Monday morning 9AM
July 2020 | Deloitte Risk Analytics
Introduction

On March 11, 2020, the World Health Organization (WHO) officially declared COVID-19 a pandemic. As the world continues to grapple with the uncertainty surrounding the spreading of COVID-19 and its growing impact on stock markets, supply chains, and other pillars of the global economy, it’s important to remember that this event is first and foremost about people—their families, their well-being, and the organizations and institutions that they rely on and trust in times of need. From hospitals to banks to stores and transportation, it’s critical for these organizations and businesses to be strong and resilient so they can serve the people who depend on them for products, services, and livelihoods.

Besides the current pandemic, Artificial Intelligence (AI) will change the way we work, the way we communicate, the way we make decisions and the way we interpret the world. Machine learning algorithms, AI-powered platforms and data analytics are already becoming mainstream. Combine that with immense computing power to process oceans of data drawn from billions of connected devices, and we are growing the ability to solve complex problems at speeds that human brains alone can never achieve.

However, this is for businesses as a whole. Within most Internal Audit departments the journey to becoming ‘really’ data driven (data analytics, AI, RPA, etc.) has just started. What AI can actually do for Internal Audit departments can still be decided. The truth is that applying AI within Internal audit is ‘Champions league’ while most organizations are playing in the lower league, and some steps are necessary to grow in maturity.

We have seen that most Internal Audit (IA) departments have started their data driven journey and are leveraging data analytics. Some of them have failed, while most of them are struggling or find it challenging. There is no one-size-fits-all approach, but we do know, and want to share, the main components and steps to come to the right approach for every organization.

We see a trend in the way IA functions are operating and moving to a more Agile way of auditing. As it is not possible to perform the audits in the old fashioned ways due to the COVID-19 crisis, it’s now even more valuable to build on this data driven journey, leverage data analytics as much as possible and operate as a responsible business to sustain and grow.
Why leverage Data Analytics right now?

Not easy to Travel
Due to COVID-19 it is not as easy to travel and perform the old way of interviews at this moment.

IT Preparedness
COVID-19 boosted the digital preparedness of society. Organizations are now ready for data driven auditing.

Way of auditing
The preference for the agile way of auditing is changing the way of internal auditing.
Start Monday morning 9AM with data analytics

Social distancing and remote working are the new norms. The IA organization can deliver better value with the use of data analytics. We believe that today data analytics within IA should be adapted as a norm.. using it more than what we ever perceived was possible.. and to keep the spirit of internal audits alive and kicking...
A successful approach for a data driven IA starts by getting clarity on these three key aspects:

**Data maturity of the organization**
- Assess the current and future state of the organization.
- Determine the maturity of the people inside the organization and in the IA team.
- Identify what the Data and technology landscape look like.

**Organizational governance**
- Type of business/typology of the organization.
- Current organizational setup; Group Centre, vs. Business units, what locations.
- What regulations and compliance rules are applicable for the organization.

**Risk governance**
- Include the role and setup of the organization, dependent on the role of 1st and 2nd line of defense, and what decisions they can make.
- Define the (current) process and methodology, the scope, what is the audit plan (e.g. #audits).
- What (available) tools and techniques to use.
- Define the ambition level of the IA organization including the strategy and the vision.
- Define the role of analytics within the function and across the business.
These five key components are essential in a data driven IA transformation. Dependent on the type or organization the subs are more or less relevant. Tackle all these items your are on your way to a successful implementation of data analytics within IA. A maturity self-assessment is added in Appendix I.
The transformation is actually a journey that leads to a data driven IA function

**Assessment:**
Understand organization: Perform interviews/workshops to understand the organization and the current state and align on the future/desired state.
Set the goals, objectives and principles that drive the design of the strategy and analyze the current performance and capabilities.

**Recommendations & Roadmap**
Create the Roadmap, determine pilots and build future state operating model.
Selecting potential data analytics pilots and determine tools and processes that are needed to support the implementation of the strategy.

**Launch of the data driven IA:**
Establish governance model, targets, and tools.
Start using the created processes, operating model and align with other business initiatives.
Start applying the analytics and start the journey with successful pilots.
Start training employees.

**Continuous improvement:**
Continuously broaden the scope and improve where possible.
Execute more data analytics and training more people.
Grow with your data driven IA from the exploring level to Champions league

<table>
<thead>
<tr>
<th>Maturity</th>
<th>Exploring</th>
<th>Building</th>
<th>Innovating</th>
<th>Disrupting/Champions league</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategy</td>
<td>A small number or pilot projects have been performed, possibly with some success.</td>
<td>Future state definition of data driven IA is clear and supported with a roadmap and ambition level</td>
<td>Role of data is fully defined. Data is fully utilized for Business and IT audits driving strong outcomes supported with a strong culture &amp; transformed IA</td>
<td>Risk assessment and audit execution are largely driven by technology and data techniques supporting auditor judgment.</td>
</tr>
<tr>
<td>People</td>
<td>A small number or pilot projects have been performed</td>
<td>IA Leadership drive digital, automation and data analytics as key initiative</td>
<td>6-10% of FTEs with mix of technical and non-technical backgrounds; quantitative/ data science skills on the team. Heavy commitment to training</td>
<td>Risk assessment and audit execution are largely driven by technology and data techniques supporting auditor judgment. Training is tied to performance goals</td>
</tr>
<tr>
<td>Process</td>
<td>Little to no cooperation across the enterprise. IA methodology does not leverage automation or mention data analytics</td>
<td>The IA methodology specifically notes integration points and procedures related to data analytics integration.</td>
<td>IT supports improved infra-structure and access to data. Strong workflow and PMO procedures to support the data analytics team.</td>
<td>The IA data analytics team employs leading practices from various disciplines for automation; AI, RPA. Fully integrated data analytics activity workflows.</td>
</tr>
<tr>
<td>Data</td>
<td>Limited or no use of data within audits.</td>
<td>Basic data visualization capabilities available.</td>
<td>Data from different sources is combined to perform advanced analytics</td>
<td>All organizational data is being used to provide insights and assurance.</td>
</tr>
<tr>
<td>Technology</td>
<td>IA tools for collaboration, audit execution and reporting are not in use. Data joins and filters support rules-based testing in Excel spreadsheet format.</td>
<td>The majority of work performed is script based; basic routines may exist to obtain and manipulate data as a part of the scripts.</td>
<td>Advanced visualization, advanced analytics techniques, including predictive models, network analysis, and unsupervised techniques.</td>
<td>Cognitive capabilities (AI) and RPA are fully applied. Auditors rely heavily on results to drive planning and scoping activities. Robust procedures expedite access to data.</td>
</tr>
</tbody>
</table>
What do we see as typical challenges in implementing an effective Analytics program within Internal Audit?

There are common challenges in implementing an effective data analytics program. It’s important not to underestimate the potential for resistance and the levels of education and change which need to take place across the department and organization.

**People & Change**

People are not fans of change. Employees must go through change to be successful. Support and direction from C-level is often lacking.

**Buy in** is often stuck in ROI discussions, change inertia, skepticism, fear of being challenged.

There is a large supply gap of data analyst and data scientist talent, organizations are shifting towards hiring talent who can generate insights, and are not just number crunchers.

**Technology & Communication**

Image is ‘Techy’, complex, and related to math statistics, and hence difficult to comprehend or thought to be IT-only.

**Communications**: Marred by jargons, the value and insights of data analytics and AI are often ‘lost in translation’.

Organizations are distracted by the hype and are confused by what Big Data, AI, Robotics really means to them and how to best apply them.

**Siloed implementation**

Analysis is developed in silos and effort is duplicated. It lacks implementation vision and strategy for enterprise wide integration.

Confidence in data is low due to inconsistent definitions. Reluctance to share data and inability to get timely access to it.

No or too little investment in understanding the data landscape thoroughly.
Data Driven Internal Audit

What to do Monday morning 9:00 AM

The journey to become a data driven IA starts with the Assessment of the current and future state. Create the roadmap based on the three key aspects of a successful implementation. Once you are using Data Analytics for a period of time and use it efficiently then it’s time to grow to the next maturity level and grow to the ‘Champions league’.

Start Monday 9AM with your assessment and determine the roadmap based on the three key aspects.

For more information please contact:

Rob de Leeuw
RdeLeeuw@deloitte.nl
+31 6 5204 8367

Mark Wijngaarden
Mwijngaarden@deloitte.nl
+31 6 8333 0478

Gaurav Luhadiya
GLuhadiya@deloitte.nl
+31 6 1258 1876

Melissa Kont
Mkont@deloitte.nl
+31 6 5008 8539

Natalie Haal
NHaal@deloitte.nl
+31 6 2320 8439
### Appendix I - Maturity self-assessment: Strategy

<table>
<thead>
<tr>
<th>Analytics vision</th>
<th>Value &amp; business case</th>
<th>Stakeholder management</th>
<th>Operating model</th>
<th>Innovation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A documented and published insights strategy that is adopted by the business and IT communities and sets a vision and roadmap for exploiting the organization’s data assets.</td>
<td>How well are benefits measured and managed to ensure Analytics meets financial targets, expectations and continues to deliver value?</td>
<td>Key stakeholders are aligned on the insights vision and in support of the journey to becoming insight driven</td>
<td>An analytics target operating model has been tailored to the needs of the organization and is supported by structured governance and processes.</td>
<td>A culture of continuous innovation is embedded into the organization, enabling it adapt to market changes.</td>
</tr>
<tr>
<td>No insights strategy or governance framework exists.</td>
<td></td>
<td>Little knowledge of analytics vision outside of the primary stakeholder.</td>
<td>BI and analytics is conducted entirely ad-hoc with little alignment to a common objective or visible defined structure.</td>
<td>Organization struggles to keep up with market disruptions.</td>
</tr>
<tr>
<td>Benefits have not been identified and documented.</td>
<td>Benefits are clearly identified, recognised across the organization and have business owners. Tracking is an on-going process with clear visibility and involvement. Analytics acts as a service to help achieve business-driven initiatives, and is effectively self-funded in this context.</td>
<td>Stakeholders are actively engaged in and measured against the success of the insights agenda or vision.</td>
<td>The operating model effectively uses capabilities throughout the organization, is scalable and agile, and is supported by well understood roles, responsibilities, and controls.</td>
<td></td>
</tr>
<tr>
<td>There is a mature, documented and published insights strategy that supports the analytic and business community and is sponsored by the leadership team.</td>
<td></td>
<td></td>
<td></td>
<td>Organization rigorously challenges status quo and has established feedback loop for transformation programs.</td>
</tr>
</tbody>
</table>
Appendix I - Maturity self-assessment: People

**Leadership**
- There is a champion for analytics at the executive level who can drive organizational change
- The analytics agenda does not have an identified champion at the executive level

**Organization design**
- The degree to which the roles, responsibilities, performance management and organizational hierarchy support the collection, dissemination and use of insights within the overall enterprise.
- Organizational structure provides no support for insights

**Talent**
- The organization has the right mix of technical, analysis, communication, and business acumen to deliver the end-to-end insight process
- Little or no insights or analytics training and skills exist within the organization

**Change journey**
- A change management journey has been planned to support the transformation into an insight driven organization and data driven decision making forms a key part of the organization’s culture
- Not enough consideration has been given to change management in the context of analytics

**Knowledge management**
- There is a central knowledge management repository that is used to support insights resources across the organization
- No Knowledge Management capability exists. Knowledge maintained on personal hard drives with no version control or community portal

**Leadership**
- An analytics champion and their team consistently mobilizes the organization around insights and innovation
- The organization design fully supports the chosen operating model and provides attractive career paths for employees engaging with insights

**Talent**
- Integrated specialist teams are regularly deployed throughout the organization to deliver insights. Analytics awareness is high and insights training is incorporated into learning pathways and specialist insights skills are embedded and rewarded in the business.
- A top-down and bottom-up change management program has been implemented and the culture transformed to that of an IDO

**Knowledge management**
- Central social platforms exist and are widely used across the organization and continuous improvement in the insights process
## Appendix I - Maturity self-assessment: Process

<table>
<thead>
<tr>
<th>Maturation Level</th>
<th>Limited</th>
<th>Developing</th>
<th>Defined</th>
<th>Advanced</th>
<th>Leading</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ideation &amp; Prioritization</strong></td>
<td>Business users are regularly consulted on ways to use analytics to solve issues and their needs are prioritized accordingly</td>
<td>There is little to NO interaction with business users</td>
<td>Analytics operating model and controls only take into account existing demand</td>
<td>Analytics is delivered ‘as a service’, able to respond and scale to demand flexibly from both a business and IT perspective, taking advantage of multiple delivery models, whilst keeping costs at a manageable level</td>
<td>Business and analytics teams meet regularly to generate ideas for valuable analytics projects and rigorously score and test them</td>
</tr>
<tr>
<td><strong>Agility and scalability</strong></td>
<td>The analytics operating model is designed to handle increased demand for services</td>
<td>Analytics solutions are conducted in isolation and are not embedded into business as usual</td>
<td>The analytics operating model is designed to handle increased demand for services</td>
<td>Analytics teams provide advisory services to business units to change and mature their existing business processes</td>
<td></td>
</tr>
<tr>
<td><strong>Process re-engineering</strong></td>
<td>End-to-end enterprise processes evolve and mature through the use of insights gained from specific projects</td>
<td>End-to-end enterprise processes evolve and mature through the use of insights gained from specific projects</td>
<td>End-to-end enterprise processes evolve and mature through the use of insights gained from specific projects</td>
<td>An Analytics governance process exists that manages the intake process, evaluates requests and selects and prioritizes projects. The process is well understood and communicated and group leadership plays an active role in soliciting and suggesting projects across the organization</td>
<td></td>
</tr>
<tr>
<td><strong>Governance</strong></td>
<td>The processes in place to initiate, manage, maintain, and exploit Analytics as an enterprise resource, e.g. work intake process, project management, project tracking, prioritization processes, etc.</td>
<td>No governance exists that defines the intake process for new Analytics requests, prioritization of activities or allocates time of analyst community, etc.</td>
<td>An Analytics governance process exists that manages the intake process, evaluates requests and selects and prioritizes projects. The process is well understood and communicated and group leadership plays an active role in soliciting and suggesting projects across the organization</td>
<td>Key goals and objectives of both the organization and the insights it develops are well defined and communicated in a set of KPIs that can be tracked, measured, evaluated and refined.</td>
<td></td>
</tr>
<tr>
<td><strong>Benefits Realization</strong></td>
<td>The degree to which key goals and objectives of the organization have been defined in a well communicated set of KPIs that can be tracked, measured, evaluated and refined.</td>
<td>Key goals and objectives of the organization and the insights that it develops are not well defined or communicated</td>
<td>Key goals and objectives of both the organization and the insights it develops are well defined and communicated in a set of KPIs that can be tracked, measured, evaluated and refined.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

© 2020 Deloitte The Netherlands
Appendix I - Maturity self-assessment: Data

<table>
<thead>
<tr>
<th>Inf. Model &amp; Sources</th>
<th>Limited</th>
<th>Developing</th>
<th>Defined</th>
<th>Advanced</th>
<th>Leading</th>
</tr>
</thead>
<tbody>
<tr>
<td>An information model which takes advantage of internal and external data sources that are easily accessible and structured in a way which will support the creation of trust-worthy insights</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data Quality</td>
<td>Limited</td>
<td>Developing</td>
<td>Defined</td>
<td>Advanced</td>
<td>Leading</td>
</tr>
<tr>
<td>Little is known about the information and data held within the organization</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The degree to which the organization can trust the accuracy of BI data and pro-actively drives toward ensuring data is fit for purpose</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk information / data quality unknown. No formal initiatives to identify, cleanse data and prioritize known issues. Data quality and control needs are addressed on an ad-hoc basis and based on pressing needs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data Monetization</td>
<td>Limited</td>
<td>Developing</td>
<td>Defined</td>
<td>Advanced</td>
<td>Leading</td>
</tr>
<tr>
<td>Data is recognized as a valuable asset for the organization and a clear policy exists as to how it will be used to generate revenue or savings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No discussion has taken place around the value of data or whether it will be bought or sold</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A clear view has been defined on the role that data monetization plays both now and in the future</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data</td>
<td>Limited</td>
<td>Developing</td>
<td>Defined</td>
<td>Advanced</td>
<td>Leading</td>
</tr>
<tr>
<td>The policies surrounding the way that customer and employee data will be used have been formalized, shared, and accepted by individuals</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No policy is in place which considers the ethical use of data</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The organization is known both internally and externally for exceptional ethical treatment and use of data, and is trusted by customers and employees alike</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethics &amp; Sharing</td>
<td>Limited</td>
<td>Developing</td>
<td>Defined</td>
<td>Advanced</td>
<td>Leading</td>
</tr>
<tr>
<td>There is a focus on securing enterprise data assets from any unauthorized infringement to ensure that appropriate data security and access policies, checks, and controls are monitored.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There are no information privacy or security policies. Roles and responsibilities are determined largely in an ad-hoc fashion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enterprise-wide privacy and security policies are established and enforced. Policies are periodically reviewed and updated in order to stay ahead of regulators</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Appendix I - Maturity self-assessment: Technology

<table>
<thead>
<tr>
<th>Reference Architecture</th>
<th>Limited</th>
<th>Developing</th>
<th>Defined</th>
<th>Advanced</th>
<th>Leading</th>
</tr>
</thead>
<tbody>
<tr>
<td>The level of sophistication of both the physical hardware and software needed to support analytics development and the ease with which tools are quickly and effectively adaptable.</td>
<td>The analytics production environment is limited or non-existent</td>
<td></td>
<td></td>
<td></td>
<td>The analytics production environment includes all of the following tools or capabilities: advanced data storage, real-time process, ETL, visualization, etc. and includes a development timeline that upgrades systems to keep pace with the user community and business needs.</td>
</tr>
<tr>
<td>Incorporation of new disruptive technologies is built into the IT strategy and sophisticated vendor management exists.</td>
<td>Organization lags behind in the adoption of new technology and does not act as an intelligent client</td>
<td></td>
<td></td>
<td></td>
<td>An integrated technology ecosystem has been developed where the organization acts as an intelligent client, managing costs while remaining innovative.</td>
</tr>
<tr>
<td>Analytics testing and solutioning is conducted outside the production environment in a specially designed sandbox.</td>
<td>There is no sandbox environment or testing of analytics tools and solutions</td>
<td></td>
<td></td>
<td></td>
<td>The analytics sandbox environment is setup specifically to deliver priority analytics solutions while testing disruptive technology and guides the future IT operating model.</td>
</tr>
<tr>
<td>The use of cloud-based applications or processing power for performing business analytics. Data integration, data modeling, query and reporting, dashboards, and advanced analytics.</td>
<td>The organization does not use Cloud services for Business Analytics.</td>
<td></td>
<td></td>
<td></td>
<td>The cloud is used for cleansing and improving data quality, creating data models, and analyzing data for critical business functions. This includes in-memory to detect correlations and patterns in very large datasets in seconds instead of weeks.</td>
</tr>
<tr>
<td>Analytics IT systems are stable and can support additional capacity without affecting performance.</td>
<td>IT systems experience latency and performance is consistently poor. Any broadening of the user base compounds the problem.</td>
<td></td>
<td></td>
<td></td>
<td>IT systems are available at all times required by the business, and can respond to increased loads in peak times without performance degradation or substantial costs.</td>
</tr>
</tbody>
</table>