A TREND SONAR REPORT

THE STATE OF BUSINESS INTELLIGENCE AND ADVANCED ANALYTICS

A data-driven trend report on the transformation of BI and the role of automation and AI as drivers for change in business operations, decision making and work culture.

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EXECUTIVE SUMMARY

Companies float in a constantly growing ocean of internal and external data.

This study provides an overview of the latest trends in Business Intelligence (BI) and Advanced Analytics that enable decision-makers to leverage this data for deeper insights, leading to better-informed decisions and ultimately increasing business profitability.

THE STATE OF BUSINESS INTELLIGENCE AND ADVANCED ANALYTICS

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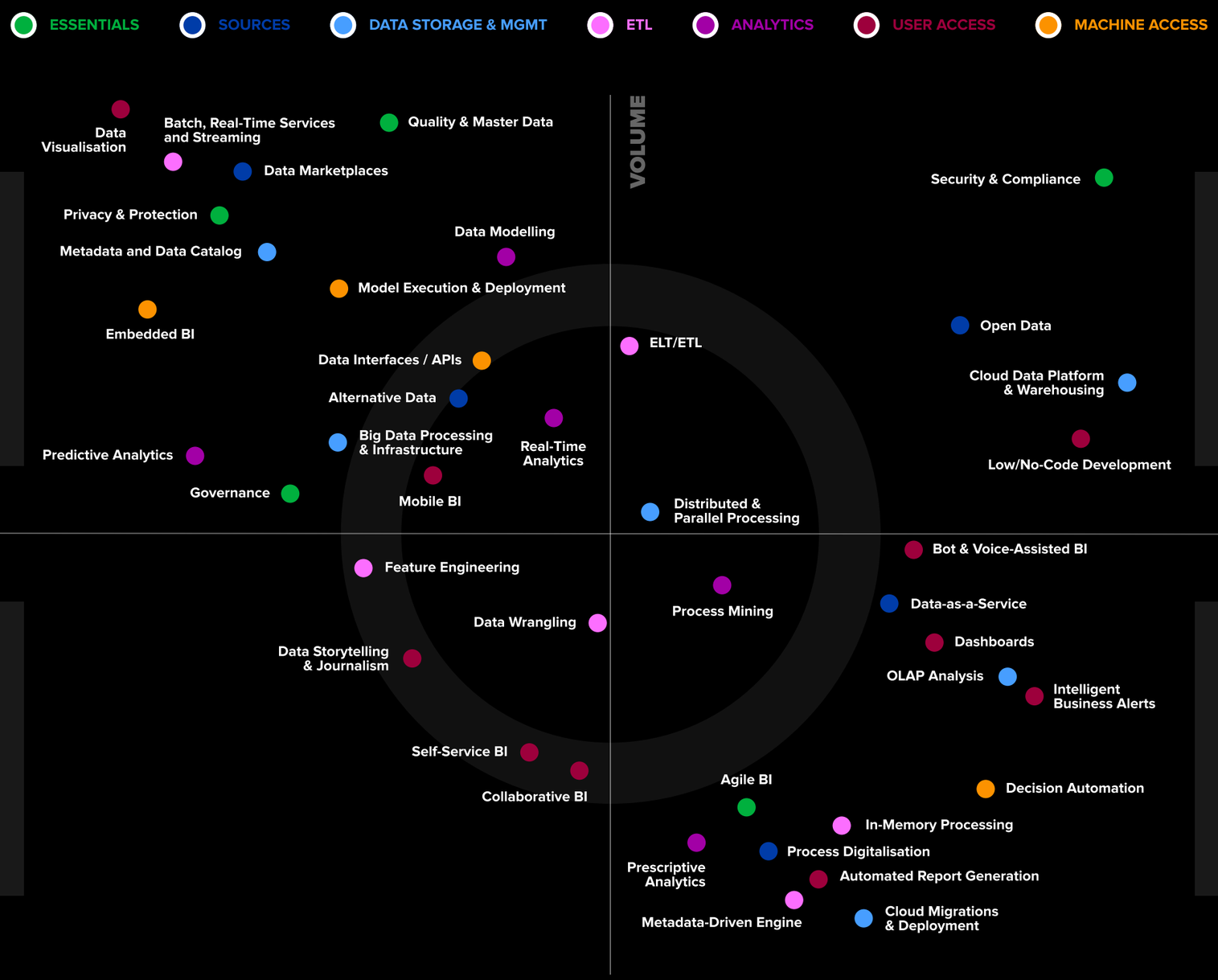
TREND HYPE-CYCLE FOR BI & ADVANCED ANALYTICS

The research was conducted using Reply's SONAR Trend Platform, to create an overview and mapping of relevant trends based on their occurrence within expert media articles, mass media, patents and scientific publications.



ESTABLISHED TRENDS

Trends with an above average number of articles over the last 12 months, but declining or low growth compared to 12 months before.

BOOMING TRENDS

Trends with an above average number of articles over the last 12 months, which is even higher than 12 months before.

EARLY TRENDS

Trends with a low number of articles over the last 12 months, and declining or low growth compared to 12 months before.

UPCOMING TRENDS

Trends with a low number of articles over the last 12 months, but with a higher growth compared to 12 months before.

Timeframe: Jan 2020 - Nov 2021

BI AND ADVANCED ANALYTICS

TODAY

We currently live in a world of omnipresent **multi-format unstructured data**. Companies deal with ways to tame and manage the floods of data and make it work for them. Recent technological infrastructure changes towards the cloud brought scalable utilisation of resources and more “out-of-the-box” solutions as a service. This data is analysed and applied in various departments and formats – from mobile solutions to dashboards. Evermore powerful models and algorithms process huge amounts of data in (near-) real-time. **Translating data into action is driven by Data Visualisation and communicating insights to human users and integrating those into decision-making processes.**

TOMORROW

We will live in a world of **hyper-automation** trying to clear bottlenecks and pitfalls caused by the increasing complexity of data. Data will be integrated even stronger into the decision-making process through advanced analysis performance and methodological approaches. Proactive alerting and intelligent insights will find the right decision-maker – not the other way around. Prescriptive analytics will gain a larger foothold with the increasing digitisation of business processes and the gained ability to tame the increasing flood of data. **Automated and AI-based systems will feed results directly into output systems and make decisions based on the analysis information with less human intervention**.

Revolutionary Aspect of BI No. 1

SELF-SERVICE BI

BI'S TRANSITION TO EMBEDDED SELF-SERVICE ANALYST SOLUTIONS

As data-driven decision making becomes more prevalent in all areas of business, the need for easy-to-use BI and advanced analytics solutions increases. Areas, where we see applied self-service BI, include sales & marketing, customer engagement, fraud & security, risk & compliance, predictive asset maintenance, operations management, supply chain.

Technically tools and platforms move towards GUI and a simplified no-coding user experience allows business users to create analysis and reporting by themselves. Data management is still the crucial part to enable smooth operations on the Business side. Key development areas evolving currently are data-literacy and data-trust to handle data products and utilise BI as a base for relevant decisions.

TRENDS TO WATCH OUT

- Low/No-Code Development
- Bot & Voice-Assisted BI
- Data-as-a-Service
- Dashboards
- Intelligent Business Alerts
- Decision Automation
- Agile BI
- Automated Report Generation
- Collaborative BI

ON-GOING DIGITISATION INTO NICHE BUSINESS AREAS

More and more areas of business interaction turn digital and therefore become measurable. This increases the complexity that BI solutions are confronted with and drives a continuous development imperative. Across industries, organisations and departments demands for combining in-depth business expertise with state-of-the-art BI skills are invaluable.

DATA AUTOMATION TO EASE USER INTERACTION

To enable smooth user interaction, data management is getting increasingly automated. Data ingestion via API, automation of the ETL processes and automated quality assurance (through machine learning recognition of flawed data patterns) find more applications.

BI INTERFACES TO MEET EXPLOSIVE DATA GROWTH

Data sources and formats are becoming more versatile. AI solutions will help to decode/process video, audio, complex text and speech, as well as emotions beyond sentiment data. The depth and richness of analysis it enables must be met by manageable BI interfaces and capabilities that integrate more advanced analytic solutions.

Revolutionary Aspect of BI No. 2

CLOUD PROCESSING & PERFORMANCE

MODERN IT INFRASTRUCTURE AS AN ENABLER TO INCREASE POWER AND IMPACT OF BI VIA AUTOMATION & AI INTEGRATION

The core differentiator across BI application areas will be in the performance of the overall tool – the ability to process exponentially increasing volumes, more advanced algorithmic calculations and various types of data dynamically.
On a larger scale, high-performance computing will become more power-aware and get support by AI for application scheduling and load balancing via dynamic algorithms. Further performance increase albeit increasing complexity as well will be found in distributed and parallel processing leveraging performance advantages of the interplay of edge and cloud systems.

TRENDS TO WATCH OUT

- Cloud Data Platform and Warehousing
- Distributed & Parallel Processing
- In-Memory Processing
- Cloud Migration & Deployment
- Big Data Processing & Infrastructure

CHIP PERFORMANCE & BROADBAND MOBILE NETWORK SPEEDS

Powerful chips based on nanotechnology need less energy and space, enabling smaller smarter endpoints that integrate scalable high performant cloud infrastructures and optimise task processing through AI-empowered models. 5G technology enables a smart connection between different processing infrastructures and the collection of data "on the edge", from remote devices and IoT. This increases real-time streaming data to be transmitted and processed.

SYSTEM ARCHITECTURE & HARDWARE INTEGRATION

Finer integration and alignment of high-performance hardware and software enables performance increase. High volume data processing software will be tailor-made to the respective hardware environment. Smarter scheduling and balancing helps to distribute software needs to matching hardware capabilities.

NEED FOR FLEXIBILITY & COST-EFFECTIVE PERFORMANCE

Shared computing assets offer performance rapidly at scale, not only by providing a good business model but also by meeting the rapidly growing need for many companies to get processing power on demand at flexible conditions. The cloud economy is one of the most impactful parts of the share-conomy through processor and infrastructure sharing, server venues, etc. These allow the rapid technology advancement we experience today and in the future.

Revolutionary Aspect of BI No. 3

IMPACT OF BI AND ADVANCED ANALYTICS

UNDERSTANDING BI AS A DRIVER FOR CHANGE OF BUSINESS OPERATIONS, DECISION MAKING AND WORK CULTURE

Modern Business intelligence solutions provide effective ways to turn data into action. Businesses can focus more time on applying data insight solutions faster than spending hours on data analysis and compiling reports. This leaves them prepared and able to strategically plan and experiment rather than running behind the market reactively.

TOPIC FIELDS AFFILIATED WITH IMPACT

- Marketing Brand & CRM
- Innovation Management
- Data Analytics
- Automotive
- Retail
- Sustainability
- Startups
- Investment
- Digital Lifestyle & Digitalisation

FASTER WAY TO INSIGHTS

Modern BI solutions running on the cloud provide the faster processing of more data and the automation of advanced analysis.

MANAGEABLE COMPLEXITY

A Holistic view of operations, benchmark results against the larger organisation and markets.

DEMOCRATISE INFORMATION

To avoid concentrating data at the top hierarchies, BI solutions can be distributed through departments allowing simple interactions with data (dashboards, chatbots, etc) reducing gut-feeling decisions.

KNOW & ANTICIPATE MARKET DYNAMICS

Keep up with the industry changes, monitor trends and seasonal changes, detect customer needs early.

AUTOMATED DECISION-MAKING

Ingest data into decision processes on a managerial and mechanical level to improve accuracy and the impact of decisions.

TRANSPARENT BUSINESS OPERATIONS

Process understanding enables control over business processes.

HOW TO FUTURE-PROOF YOUR BUSINESS WITH BI AND ADVANCED ANALYTICS

The future may look foggy at present, but business intelligence leaders can carve a path to a sustainable outlook and competitive advantage. Future BI trends are all part of a quickly evolving model that is essential to the progression of modern businesses.

HYGIENE PROTOCOL

Your BI performance is only as good as the quality and efficacy of your data.

In a world where data is exchanged, adapted, and modelled, the essential basics of maintaining the integrity of both first-part and external data will be fundamental – both from hygiene and governance perspectives – in operating high-performance BI systems at scale.

ACCESIBILITY OF INSIGHTS

Is your BI enabling creativity for all users, across the organisation?

Not everyone is a data analyst, but having data to inform strategic decisions is necessary for growth. Allowing people from across the spectrum of technical abilities to access insights is essential to enable a diverse group of decision-makers to think broadly about strategic business imperatives.

PERFORMANCE IS IMPERATIVE

Does your performance development pipeline match the growth of data and processing complexity?

More data needs to be processed in more advanced calculations in a shorter time. Processing performance evolves at the intersection of hardware, software & data engineering. To be among the top BI players in the market these competencies need to handle the complexity brought by advanced analytics, machine learning and more of various complex data formats.

FULL-SPECTRUM SOLUTIONS

Are your BI insights generating future-oriented integrative modelling?

The true value of BI tools is in the data they produce ensuring this data is not just gathered but also analysed, interpreted and acted upon is what will set some strategies apart.