

Data Analytics in the Financial Services Industry

Bringing traditional, professional, and leading-edge data and analytics capabilities to structure, solve, and manage your most critical issues.

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Data is Your New Superpower

Imagine having the ability to see everything, everywhere. All the time. Every interaction with customers. Every moving part in your supply chain. Every financial transaction, anywhere in the world.

Imagine being able to process all that information instantly, and use the insight to improve customer service, build products faster, or spot fraud.

Now imagine if that data could help you see into the future, giving you the ability to react to events before they happen. To stop customer churn. To prevent accidents. To predict and stop financial failures.

And imagine if analytics could open up totally new revenue streams for you. Taking the data in your business and finding ways to monetise it. Or creating entirely new products and offers you haven't even dreamed of yet.

Doesn't it feel like you have a superpower?

The good news is, it's a superpower we can all have. Data flows through your business every day. It's an asset you already own. We'll help you capture it, analyse it, and use it to transform the way you work.

I

How data analytics can improve your businesses:

1 Make data-driven business decisions

Making evidence-based rather than intuition-based decisions

2 Grow your business – discover new opportunities

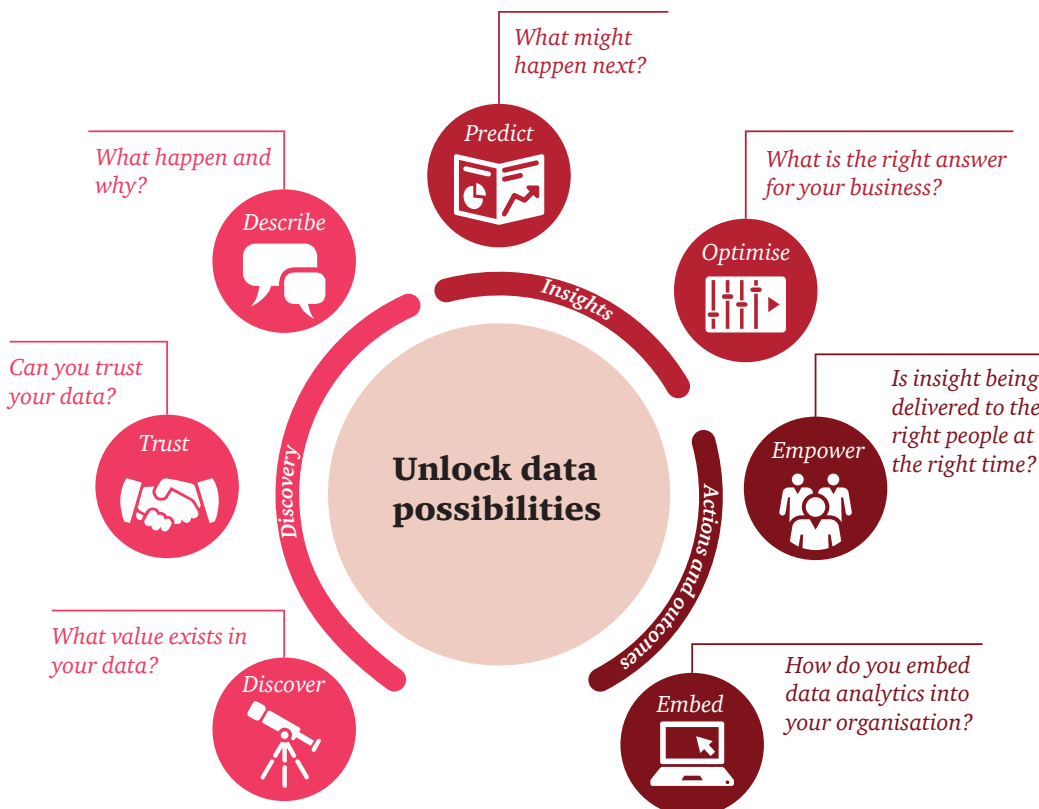
- Quickly identify future markets and the best areas for new investments
- Boost growth through strategic pricing models and data-driven marketing

3 Create a more efficient and smarter organization

- Predict and anticipate the impacts of economic, market, and regulatory forces on business strategy and results
- Use automation and advanced statistical software to handle and analyze huge volumes of data

4 Manage risk and regulatory

Minimize compliance risks by ensuring the completeness, accuracy, and availability of data sources



By doubting we are led to question, by questioning we arrive at the truth.

Breakthrough will come to those who master the full potential of data and analytics to unlock the opportunities our connected world provides.

We can help you find an answer for all your doubts.

II

Data Analytics in the Financial Services Industry

Today's financial institutions have been compelled to deploy analytics and data-driven capabilities to increase growth and profitability, to lower costs and improve efficiencies, to drive digital transformation, and to support risk and regulatory compliance priorities.



How data science can benefit **Insurance** companies:

Better product design and marketing

Insurers can take advantage of new sources of data to better target intended customers with specific – and potentially more suitable – products, making it possible to design offers based on what people need in the future, and to combine these with improvements in technology and regulation.

More accurate risk assessment, underwriting, and pricing processes

Data analytics allow insurers to assess the risk profiles of their applicants in much greater detail, which should mean better-informed underwriting decisions as well as premium calculations that will be more accurate in their alignment with the corresponding levels of risk.

Stronger commitment to helping customers

There is potential to reward policyholders with lower premiums, if their risk profile improves: this can be indicated by the number of claims, by smartphone apps that can monitor lifestyles, or by telematics devices. The reward of a lower premium could also encourage policyholders to improve their lifestyle.

Better claims management

Data analytics can be used to prioritize claims, and to set straightforward claims apart from complex cases. This can result in faster settlements for the straightforward claims, and more attention for the complex cases.



How data science can benefit **Banking** industry:

Better customer targeting and ensuring growth

By understanding clients more fully, and by using analytics of their transactions and trading activities, banks can be sure that they are delivering the best services for what their customers need, resulting in higher levels of retention and acquisition.

Enhancing risk assessment

As banks will be able to assess the risk profiles of their credit applicants in much greater detail, they will also be able to improve their credit assessments. Data analytics will advance the early-warning systems and data collection as well. All of these features will help banks to lower their risk costs, and to become aware of fraud more quickly.

Improving productivity and decision-making

With the advantage of advanced analytics, banks will be able to provide faster and more accurate responses to regulatory requests. Data will also enable better decisions for everyday activities: for example, better placement of ATMs and counters, and how much cash is required at each ATM.



More business opportunities

By collecting data from customers, data analytics will enable banks to develop new business models and new sources of income: for example, by sharing data with other companies, when the customer has agreed to this beforehand.



Digital banks – internet-based banks

In today's society, most people conduct their transactions online, through their smartphones or their computers. By analyzing real-time data, we can advance the customer experience and understand our customers much better.



III

Our Services – How We Benefit Your Business

Services PwC offers:

<p>1. Financial risk modelling PwC offers the full range of advisory solutions to help financial institutions with analytics and the development, deployment, and maintenance of models that are used for risk management, valuation, and financial/regulatory reporting purposes.</p>	<p>4. Customer analytics PwC's customer analytics solutions help Financial Institutions to drive new growth, to facilitate better customer engagement, and to support customer-centric business transformation.</p>
<p>2. Risk analytics PwC's risk analytics solutions help Financial Institutions to identify and respond to risks, to address regulatory requirements, and to strengthen their analytics and risk management.</p>	<p>5. Continuous control monitoring PwC's continuous control monitoring helps companies to extract abnormalities from their transaction data by applying pre-determined risk scenarios for the early detection of fraud or errors, required information that is missing, and issues involving access control and the segregation of duties.</p>
<p>3. Diagnostic analytics PwC's diagnostic analytics help companies to analyse their data through data visualisation and other diagnostic techniques, enabling them to extract valuable insights for decision-making, risk and compliance, or even as a growth accelerator.</p>	<p>6. Transaction data analytics PwC's transaction data analysis helps companies to process and navigate through data sourcing, integration, and complex data calculations, in order to gain insights to solve business problems.</p>

IV

Practical Examples

Insurance Company Example

The Opportunity:

A major life insurance company in Indonesia was undergoing a transformation project for a potential M&A transaction. One of the underlying requirements was to analyze a suspicion of low profitability by investigating data anomalies to see whether there were any fraudulent transactions. The products covered included personal, group, and sharia life insurance policies.

What PwC did:

- The reconciliation of policyholder data, claims, lapses, and new business data, focusing on the customer by using the master and transactional data from multiple source systems in the company.
- Review data to identify any potential anomalies, e.g. life policies with more than one claim, policies with total claims exceeding their provisions, and claims made from lapsed accounts.
- Calculate premium projections spanning 5 to 7 years as one of the considerations for negotiations.

Banking Example

The Opportunity:

Under the new standards, the client wanted to improve their risk assessment in order to achieve more granular provision calculations. The goal was to help the client to assess each customer's class of risk accurately, through data segmentation.

What PwC did:

- Help the bank to understand the impact of the new standards on their provision
- Ensure high quality data capture, structure, and cleansing.
- Develop computerised models in statistical software, to help segment the data into the categories that the bank needs.
- Perform calculations and analysis on probability default (PD), loss given default (LGD), and exposure at default (EAD).
- Perform calculations for Expected Credit Loss and help clients to have a better understanding of each portfolio, which can help them to decide the quality of the credit risk for each of their portfolios.

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