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ZEB ARTICLE

Data analytics at financial services providers

Prioritization and evaluation schemes for specific use cases

partners for change

Contents

How can we assess if a use case based on data analytics will be successful? And how can we determine the best possible prioritization of all initiatives? These are questions that clients and colleagues ask us time and again. Especially in times when clear priorities are of the essence, banks and insurance companies are faced with the challenge of making the best decision in an atmosphere of uncertainty. What's more, ideally, teams are managed in such a way that they align their actions based on agreed evaluation criteria and, in the best-case scenario, search for promising ideas themselves. In times of working remotely, this becomes even more important.

- In the first dimension, it is necessary to estimate the economic benefit of a use case in general.
- Once a decision to implement a use case has been made on this basis, the second dimension describes factors that make a successful implementation more likely.

The figures on the following pages visualize these concepts.

Basic evaluation criteria for a use case's probability of success

In recent years, we have often observed that ideas are adopted from other industries. The figure on page 5 reflects this under "Source of the idea". In many cases, ideas are adopted without prior validation and reflection. This behavior is often based on two things: the assumption that other industries are more innovative, and a general enthusiasm for technology. The cause of the latter is often seen in tech giants such as Microsoft, Google or Amazon.

Both factors, however, fall short of a comprehensive evaluation. Why are the tech giants successful? Because, as a rule, they have invented their specific methods for their specific problems. To put it in general terms, we are convinced that, regardless of industry, every successful use case, i.e. one that has measurable commercial benefit, has addressed an individual and specific problem within the respective company. Among these successful use cases, data analytics methods have been identified as a very good solution.

Against this background, an essential question is whether one believes that the solution will bring about a material improvement. This is what the criterion "Achievable marginal benefit" in the figure on p. 5 refers to.

Let us take the development of a rating process for corporate customers as an example. Typically, the estimation processes for this are based on logistic regression analyses using historical data, as they are also often used as methods of machine learning. If sufficient historical data is available, it may also seem like a good idea to use neural networks as a novel and supposedly superior method. It is, however, questionable whether a material improvement can be achieved, i.e. whether neural networks allow a noticeably better estimation of the probability of default than the established procedures which are already rather sophisticated.

As the final criterion for success, traditional cost-benefit analyses are critically important. In times of a supposedly "agile" mindset, this assertion may well be met with derision. We frequently observe ad-hoc decisions in the market when it comes to implementing new ideas. There is no shortage of reasons to justify this: Companies want to be "innovative" and "gain a competitive advantage". Besides, it is often said that it is better to make "the odd mistake" than to "let an opportunity pass you by".

At zeb we also work in an agile manner—in software development since 2007—but we believe that a classic cost-benefit analysis is often the most effective way to focus and prioritize. The result is more time and budget for fewer, but highly promising ideas. Of course, there are times when it is necessary to first develop prototypes for certain problems and thus gradually gain a better view of the benefits and costs. In our opinion, however, what matters is validation over time, so you start with a high-level view of the costs and benefits that promises success and check it regularly. In doing so, it is all the more important to be rigorous in rejecting ideas that do not live up to their promise.

How successful will a use case be? These basic evaluation criteria provide an overview

CRITERIA	Lower	PROBABILITY OF SUCCESS	Higher
SOURCE OF THE IDEA Solve your own problems instead of copying other people's approaches without reflection.	Unvalidated transfer of use cases from other industries	Specific innovation, but without a clear relation to a problem	Solution for a specific problem or potential in your own organization
REALIZABLE MARGINAL UTILITY The poorer the previous solutions, the higher the assumed added value of the new idea.	Current solution already mature or no materiality or not tested	Problem with low materiality or existing solution with deficiency	Material problem, so far without adequate solution
DEGREE OF RIGOR OF THE COST-BENEFIT ANALYSIS A valid quantification of costs/benefits in advance increases the chance of success.	Cost-benefit expectation for bank not checked, only alleged benefit	Cost-benefit expectation qualitatively determined, benefit-oriented approach	Cost-benefit expectation quantified, validated and committed to

Implementation-based evaluation criteria for the probability of success

Even if an idea meets the basic criteria and is therefore approved, there is still a risk that its implementation may ultimately fail. In order to enable an advance evaluation of the probability of success, we have defined five criteria, which are presented in an overview on page 7.

Here is a brief explanation of the individual criteria:

- The "maturity level" essentially refers to how much experience the organization has. Teams that have already taken ideas all the way through to the production stage know what matters.
- "Data for calibration" is a critical factor for using data analytics. The more extensive and high-quality this data, the better the forecast quality. Our own survey illustrates this. We asked 181 end customers in a short survey whether the customer data on their professional/job status was correct. 31 percent stated that the data was incorrect. Moreover, only about 17 percent said that banks regularly asked for an update. So if you want to use the professional status in complex data analytics methods, you will end up with a relatively high error rate.
- The availability of "implementation teams" is another criterion that is worth a closer look. Our experience has shown that interdisciplinary teams in combination with external experts are a critical success factor. In contrast, the use of teams from other industries is often not successful—even if this is championed based on enthusiasm for other industries' ideas.
- We have included the "selection of analysis method" as a criterion, because the best method always depends on the specific problem and cannot usually be made intuitively.
- The "degree of integration" as the final criterion determines the ultimate success of a use case. The best prediction algorithm does not help if the results are not accepted at the end of the day or if you cannot really put them to productive use. One example for this is customer churn analysis—a typical application in the market that only few financial services providers implement successfully. The main reason is that you have to contact the customers based on the information. To do so, relationship managers have to be adequately trained and also need room for maneuver to achieve customer retention. Both of these prerequisites are rarely met. Nevertheless, this is exactly where successful implementations differ from unsuccessful ones.

The following example illustrates the application of the model. Since the evaluation criteria for implementation depend on the company in question, we focus on the basic evaluation criteria.

Which idea can be implemented successfully? These evaluation criteria help you decide

CRITERIA	PROBABILITY OF SUCCESS: Lower		Higher
ORGANIZATION'S MATURITY LEVEL Obviously, experienced organizations can implement new ideas more competently.	No previous experience	First prototypical implementation experience	Use cases successfully put into production
DATA FOR CALIBRATION Quantity and quality of data are crucial. Quality deficiencies include bias.	Small data set / unspecific data or unknown bias	Adequate data set with known bias and quality deficiencies	Comprehensive and high-quality data set without bias
IMPLEMENTATION TEAM Ideally, interdisciplinary teams implement ideas, if necessary in cooperation with external experts.	Employees without industry/specialist knowledge, without experience in methods	Employees with method and tool experience, but without specialist knowledge	Interdisciplinary teams and external experts on specialist topics
SELECTION OF ANALYSIS METHOD Organizations with a set of validated methods have the best chances of successful implementation.	Unreflected, intuitive use of a single method	Use of experience in selecting the method	Selection from methods validated specifically for the use case
DEGREE OF INTEGRATION This concerns an important cultural facet: openness to new ideas.	Integration not planned /reservations regarding results	Integration not planned /openness of the organization	Integration is planned and results are accepted

Example: "next best offer" in the corporate banking segment:

The "next best offer" method is typically used on large retail platforms. The basic idea is to simplify the search for what can sometimes be millions of products and to offer customers better solutions or alternatives when searching. This derivation is simplified for retailers by the fact that each product usually serves a specific purpose. For example, if someone buys paint, they will want to paint something. So it makes sense to also suggest brushes, cover fleece, adhesive tape and other accessories. By using data analytics, you will find out that customers who buy paints also tend to search for such items. One advantage is that they are often consumables, so customers need such products relatively often and regularly. In addition, large platforms with high user numbers have enough high-quality data points to derive proposals technologically by using AI-based algorithms. Can the next best offer approach be applied to corporate customers? This question already implies an unvalidated transfer from another industry, as shown in our figure on p. 9. The first major difference is that banks offer comparatively few products, but in many variations—for example regarding maturities or interest rates. Therefore, the customer has no particular difficulty in finding the right product—provided that there is an occasion that requires financing. From the bank's point of view, it is all about the earliest possible identification of the few financing occasions. The basic problem is thus fundamentally different. This search is made more difficult by the fact that many occasions cannot be deduced at all from the available bank and interaction data. For example, if an entrepreneur wants to enter a new market and therefore buy a new machine, this information usually only becomes available when the customer contacts the bank.

Accordingly, it can be assumed that no assessment of the "realizable marginal utility" was made. When looking at the criterion "degree of rigor of the cost-benefit analysis", it also becomes clear that we are arguing with an alleged benefit.

The zeb Corporate Banking Study also shows that corporate customers generally consciously choose their main bank based on the relationship with their relationship manager. This means that they are very likely to contact their relationship manager directly if they have financing needs. By implication, even if it were possible to predict the occasion, the bank might be in touch with the customer a little earlier, but overall it would get to service the same financing needs. An investment in improving customer support and approaching new customers would therefore promise more success.

Of course, simple rules can be used to identify anomalies in order to support the relationship manager in their customer communication. Here are two examples:

- If a customer's credit lines are more than 80 percent drawn, the relationship manager is notified.
- If the customer has foreign currency positions with a bank and the exchange rates come under pressure, both the relationship manager and the customer are informed via the online banking system.

This, too, would be a useful way of tying customers to the bank and giving them valuable advice. However, it should be mentioned that all this is already possible with 20th century technology—no advanced data analytics required. But that does not change its general relevance: if a major customer problem can be addressed, the bank should of course pursue such approaches.

However, the assessment of the next best offer approach is clear. If it is meant to significantly increase profits, this goal is unlikely to be achieved by simply transferring it from the retail industry.

Small chance of success: classifying the "next best offer" use case for corporate customers based on the basic criteria shows why.

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Process automation is a promising field of application

In our view, data analytics applications that aim to optimize process efficiency—be it through automating processing steps or operational decisions—have the highest potential. Many business processes in financial institutions are still characterized by media disruptions. They involve staff manually transferring information from paper forms such as account opening applications and land register entries into IT systems. This means that they digitize information and use their professional experience and intuition to check the plausibility of the entries. Such transfer steps cost time—also on the customer's side—, are associated with risks such as input errors, and tie up expensive capacity of experts who are qualified for superior tasks. The same applies to simple and low-risk business decisions such as granting consumer loans within the framework of materiality criteria. Frequently, such decisions are also still made by people according to very schematic rules—if only because of transparency requirements.

As the source of the idea—to quote our criteria—corresponding cases can be found in many institutions after a brief observation period and described very specifically by means of concrete processes. The marginal utility (see figure on page 5) of automating such analytical tasks is high—even along several dimensions, i.e. speed, quality/risks and capacity requirements. As the technical processes for implementation are well understood and available on the market, the benefit can usually be realized effectively. And in contrast to earnings, which depend on customer behavior, almost all factors influencing this benefit lie within the institution and thus within the direct scope of entrepreneurial decisions. This makes it possible to derive a reliable cost-benefit assessment (see figure on p. 5).

The implementation naturally profits from the automation team's experience with advanced processes such as image/text and handwriting recognition based on machine learning methods (criterion "organization's maturity level"). Knowledge of the strengths and weaknesses of the recognition processes and software components prevents lengthy trial and error periods and enables reliable recognition rates even in the prototype phase. This applies to handwriting, for example. In addition to ready-made market components for text/handwriting recognition, some cases also require individual modules, for example for the reliable recognition of form types and document types. The necessary sample data is typically available in sufficient quantity from daily manual work practice. When using real data, it is important to observe data protection rules, especially during the development phase (criterion "data for calibration" see p. 7).

Possible application areas of the approach

Our experience shows that the evaluation criteria can be used to quickly thin out huge use case portfolios. On this basis, we have for example reduced a portfolio of more than 300 use cases to eight approaches that held the promise of real success. At the same time, the approach helps the teams as a framework that provides structure and transports management expectations. It will thus automatically increase the quality of the use cases.

Data analytics experts at zeb

The zeb management consultancy specializes in change processes of European financial intermediaries. For more than 25 years, zeb's experts have been successfully dealing with the use of data to strengthen customer contact, boost earnings, optimize process efficiency and quality as well as measure and manage risks. Among zeb's staff of over 1000 employees, more than 300 zeb experts now deal with these issues. They design and develop data-based sales and risk models using state-of-the-art analytical methods, evaluate the benefits and success of the models, design data architectures and organize the data management and data governance of financial intermediaries.

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