

re:thinking customers

An agile test procedure for the customer acceptance of innovative products, services and business models.

Product-Market Fit of Innovations

white paper
by UScale

Innovations are the future. But only if they are accepted by the market.



Economical-tectonic plate shifts, such as digitalization, energy and mobility transition, jeopardize the business models of many companies and jobs. Companies have reacted by setting up business development departments and innovation labs or have trained Design Thinking methods on a large scale. On the other hand, investors with high budgets are looking for attractive start-ups in which to invest. In addition, state and EU subsidies fuel the market and were even increased during the Corona crisis in many countries.

Companies in all sectors are working on structures that systematically promote innovation. This will create a culture of change and new beginnings amongst employees, companies, entire industries and within our society. Finally, investments must lead to innovative products that are accepted by the market, generate profits and create new jobs. Surprisingly, hardly anyone questions the basic assumption of venture capitalists that most investments do not meet expectations.

In cases when newly introduced products fail, it is almost exclusively due to the fact that founders and managers did not know the market sufficiently well. This is surprising since no keynote presentation is held without praising the importance of customer orientation. Why is it so hard to listen to the customer in practice?

This white paper shows three important causes and suggests a way to assess the Product-Market Fit throughout the entire lifecycle and thus, significantly increase the sustainability and market success of innovations.

Dr. Axel Sprenger

Managing Director UScale GmbH

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Customer Orientation for
Innovative Products and
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A New Test Procedure
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An inconvenient truth

Many innovative products, services and business models fail.
Why?

The most important factor for success is often overlooked.

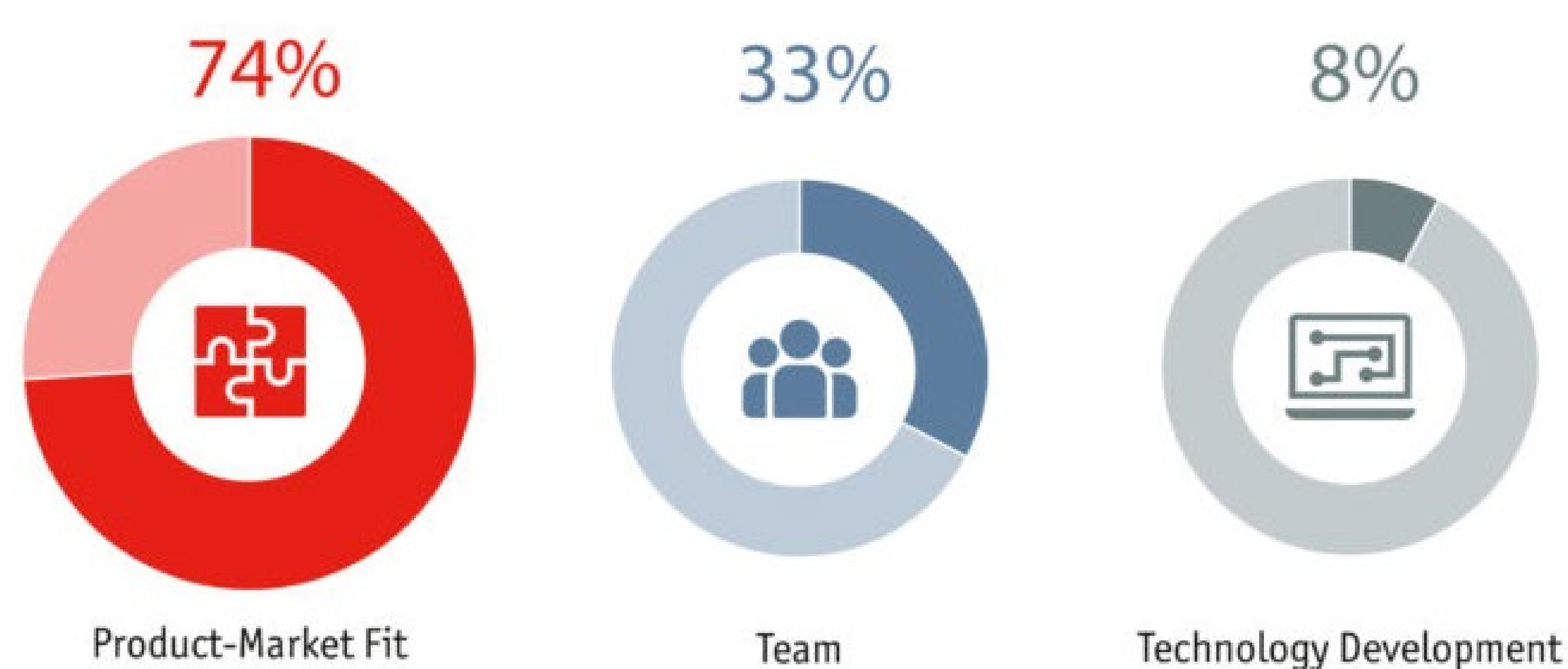
Investors know that a significant part of their investments fail. Nevertheless, every bankruptcy and every flop is painful for founders and investors.

At start-up events, the significance of the optimal composition of start-up teams is discussed at length. Members of innovation hubs talk a lot about IT talents programming specialized algorithms. However, rarely do the creators have any doubts that there is a sufficiently large market for their products.

Thus, the results of a post-mortem analysis by the High-Tech Gründerfonds (HTGF) are enlightening: The most common reason for failure was neither financial, nor the team or the technology, but the lack of Product-Market Fit.

A study conducted by the US Tech Market Intelligence Platform CB Insights arrived at a similar conclusion. According to this study, on first place in the "TOP20 Reasons Why Start-ups Fail" was the reason "No Market Need", i.e. a wrong assessment of the market.

→ The most prevalent reason for the failure of innovative business models and products is the lack of Product-Market Fit.



Reasons for the failure of HTGF investments when choosing between Product-Market Fit, team and technology (Source: HighTech Gründerfonds)

No usage - No revenue

Pay-per-use based business models are particularly affected by the lack of Product-Market Fit.

Usage is a mandatory requirement for success.

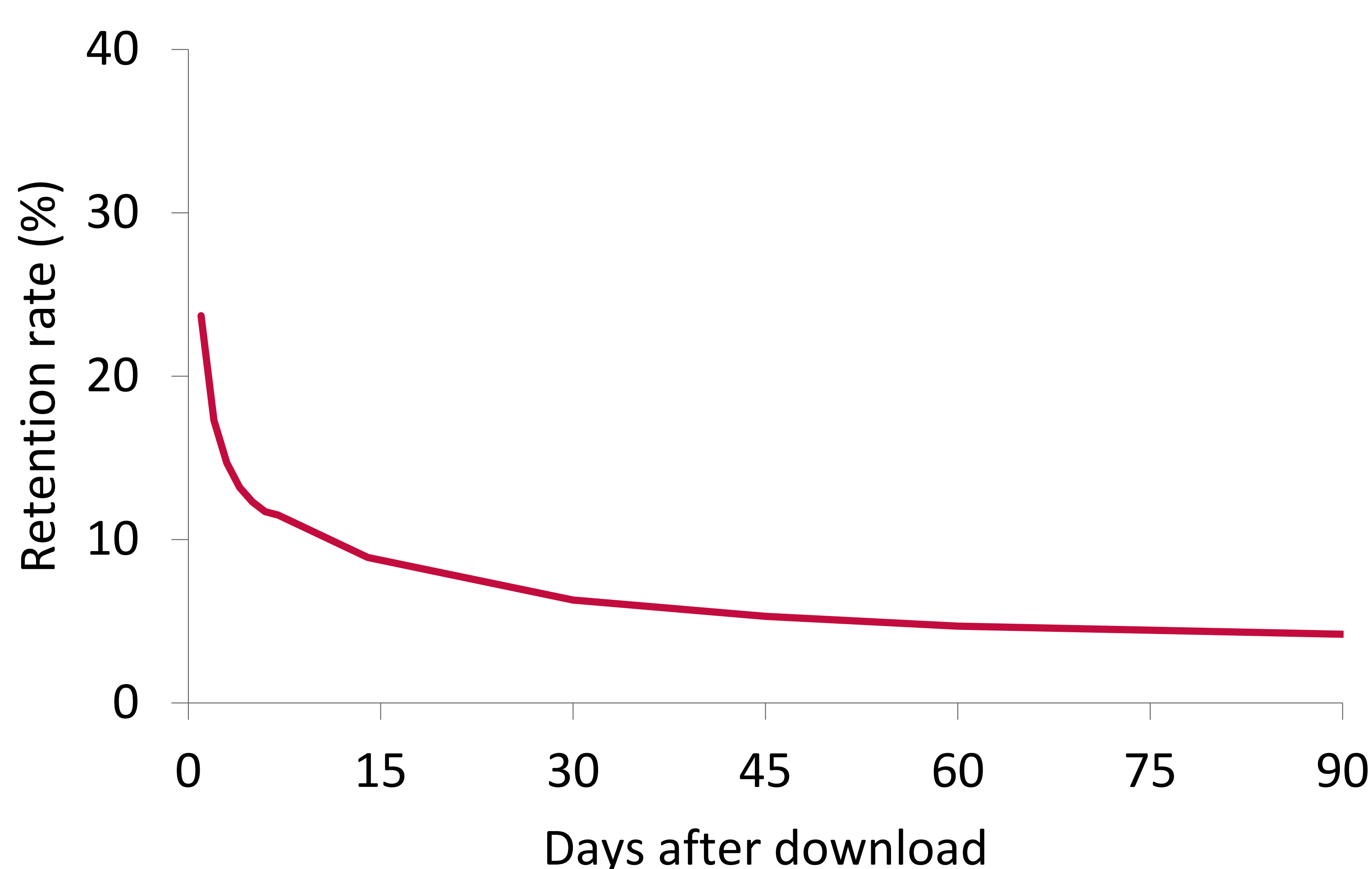
Many analog products can be marketed more easily with advertising or special offers. For others, an espresso or a glass of champagne can be served in the store. If the customer at home is not sure whether the purchase was right, an alternative option is invariably connected with effort and costs. However, the same applies to online purchases: once a shoe has been worn or a registered car is parked in the garage, the retailer can be sure of his sales.

With digital, mostly pay-per-use based products, things are different. The risk and costs of an uneconomical purchase are almost zero if the user can only download an app and test its use without any obligation. If the user does not like the offer, an app is simply deleted or a subscription cancelled during the test period.

Pay-per-use based offers must therefore generate a significantly higher and tangible added value than products that are purchased in order to be successful and to generate long-term revenues.



Purchased products must shine in the store. Pay-per-use based offers must bring real benefits.



Holding period of apps

Source: Appboy.com (App Customer Retention Spring Report 2018)

Problem 1: Missing test procedures

There are no test procedures
which check the value added.

Functional security and usability are necessary,
but not sufficient.

With fright, we remember the times when usability was still a borrowed word and technical devices in our households or user interfaces in public spaces could not be operated without instructions. What began with Apple's first computer became a *conditio sine qua non* with the triumph of smartphones and apps: If products cannot be operated intuitively, they can rarely be marketed successfully.

Customers are even more tolerant when it comes to the reliability of digital services. Apps and now even safety-relevant features of cars are given to customers as beta versions and are mostly accepted by early customers.

For usability and function, service providers have now developed a variety of test procedures that reliably identify weaknesses before the launch. So far, no test procedure is known for the systematic evaluation and quantification of customer benefit. With the approach presented in this white paper, UScale introduces an agile and cross-industry applicable test procedure for the determination of customer value.

→ In addition to function and usability, founders and product owners of innovative products must test whether their product generates sufficient added value in order to be used.



Problem 2: Missing key figures

Product usage can be easily measured. But there are no indicators for the acceptance of *future* customers.

The reasons for non-usage are more important for companies than the reasons for usage.

In the digital world, there is a long list of proven metrics for usage, such as daily or monthly active users. For example websites, Google Analytics reliably measures them in real-time and generates clear and colourful dashboards.

Whoever brings an innovative product to market starts from scratch and has to laboriously acquire a user. Whatever the business model looks like: The proportion of non-users is far greater than that of users.

At the beginning of an innovative product, it is decisive to win customers at all. For a product to diffuse successfully within a market, the reasons of the not-yet-users for non-usage are more important than a dashboard with the usage behaviour of the already acquired users. Even the highly regarded customer satisfaction only becomes relevant as soon as there are enough customers on board to survive.

The test procedure presented in this white paper provides KPIs for the Product-Market Fit.

→ For companies, knowledge about the motives of non-users is more important than knowledge about the customers already acquired.



*"You can't manage
what you don't measure."*

Peter Drucker

Problem 3: Wrong customer construct

The Business Model Canvas is a proven model for founders.
Unfortunately, one crucial aspect is missing.

Why do people use a product?

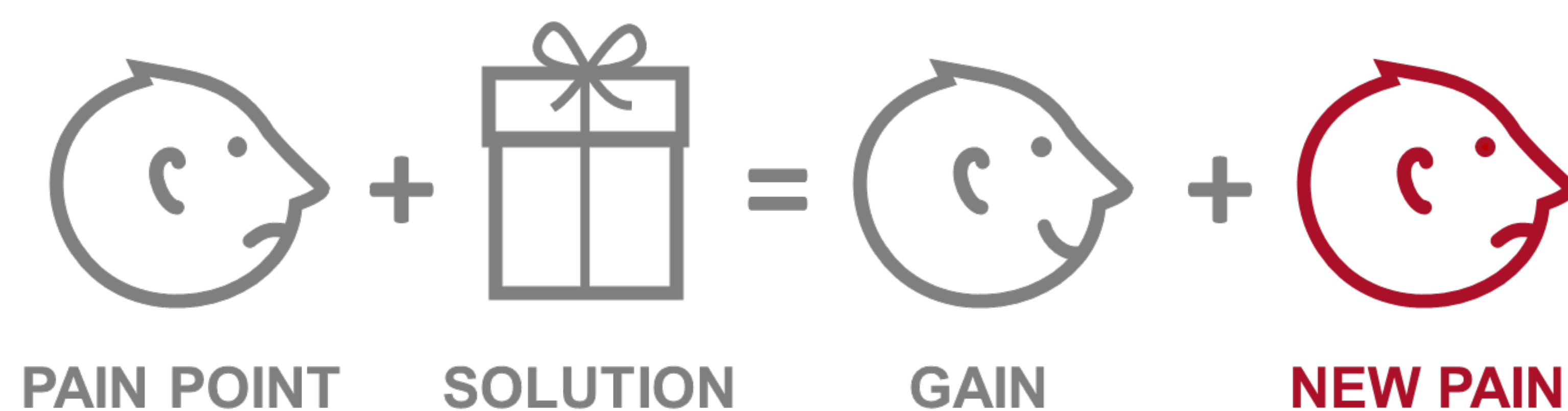
Probably there is no team of founders, no innovation lab, whose employees have not attended long workshops in search of pain points that they can solve with an innovative offer. The focal point of every innovation is the value proposition that should solve these pain points.

This view overlooks a decisive factor: The decision to use an innovative product is only 50% influenced by whether a product solves a pain point and creates added value.

In the best case, every product, every service, every app solves a pain point, but at the same time always creates *new* problems. This can be the effort of getting used to a new service, depositing a means of payment, embedding the new product into the existing IT ecosystem or adapting behavioral habits.

Whether people use a product does not primarily depend on the added value that a product creates, but on the ratio of added value, the GAIN, to these expenses, the NEW PAIN.

→ Every product creates GAIN, but always creates NEW PAIN, too. Firms must have *both* in view.



Ideally, an innovation solves a pain point, but always generates new pain. The ratio of NEW PAINs to GAINs is crucial for market success.

Habit is a strong motive

In order to be noticed, New must shine much brighter than Old.

New vs. Old

Every product, every established service has its weaknesses. As a user, you are often antagonised, however, you accommodate the dysfunctional, try to work around it and accept the imperfect. A new offer may be better than the status quo if it delivers what it promises. But before the first test, it is merely a promise.

Many have internalized the recommendation "Never change a running system" for valid reasons and are aware that the new and supposedly better is seldom available for free. The new can never be achieved without the effort associated with a changeover and the acceptance of other disadvantages. On top of this comes a portion of uncertainty that the new product is may be new, but not necessarily better.

GAINs and New PAINs can be of very different nature. Nevertheless, the addressed target group easily compares "apples to oranges" at the moment of the usage decision, weighs up financial, time, comfort, image and other aspects and decides in a matter of seconds whether the new product has a chance or not.



Developers and marketers of innovations should understand how customers decide.



In order to step out of the shadow of the Old and familiar, the New must offer a lot.

Individual adoption processes

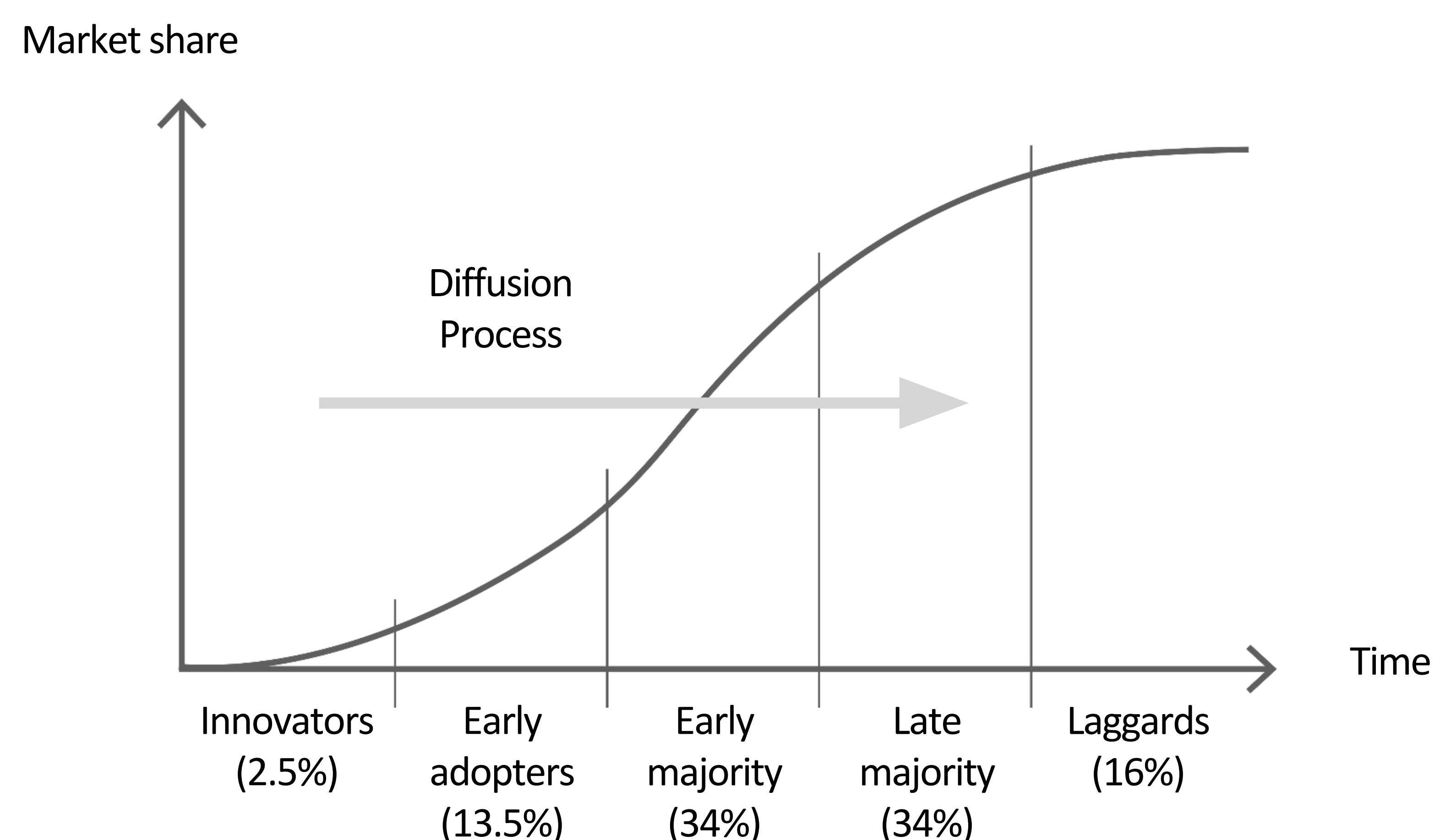
Successful segmentation
in the world of innovation.

Target group segmentation in the ramp-up of innovative products and services

For new products to be successful, it is not enough to inspire innovators. Only when the early majority group, which follows the early adopters, can be convinced, successful diffusion is possible. The relevant research was conducted by sociologist Everett Rogers, who divides user groups during market diffusion into innovators, early adopters, early and late majority and laggards.

Adoption research has found that each group takes the experience and recommendations of the previous segment as a reference and makes its own transition decision depending on the vote of the previous segment. The individual reasons are different for each segment: While innovators are curious and also accept the beta version of a product, early adopters and their successor segments have higher expectations. They are less tolerant of technical errors and often pay more attention to monetary advantages.

→ Managers of innovative products and services must divide their target customers according to adopter segments and address them one after another.



Customer segmentation for innovative products: Adopter segments according to Rogers

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The PAIN-GAIN test procedure

A universal and agile acceptance test with a strong reference to economic success, which can be understood even without having studied psychology

Cognition processes as the basis of the PAIN-GAIN test

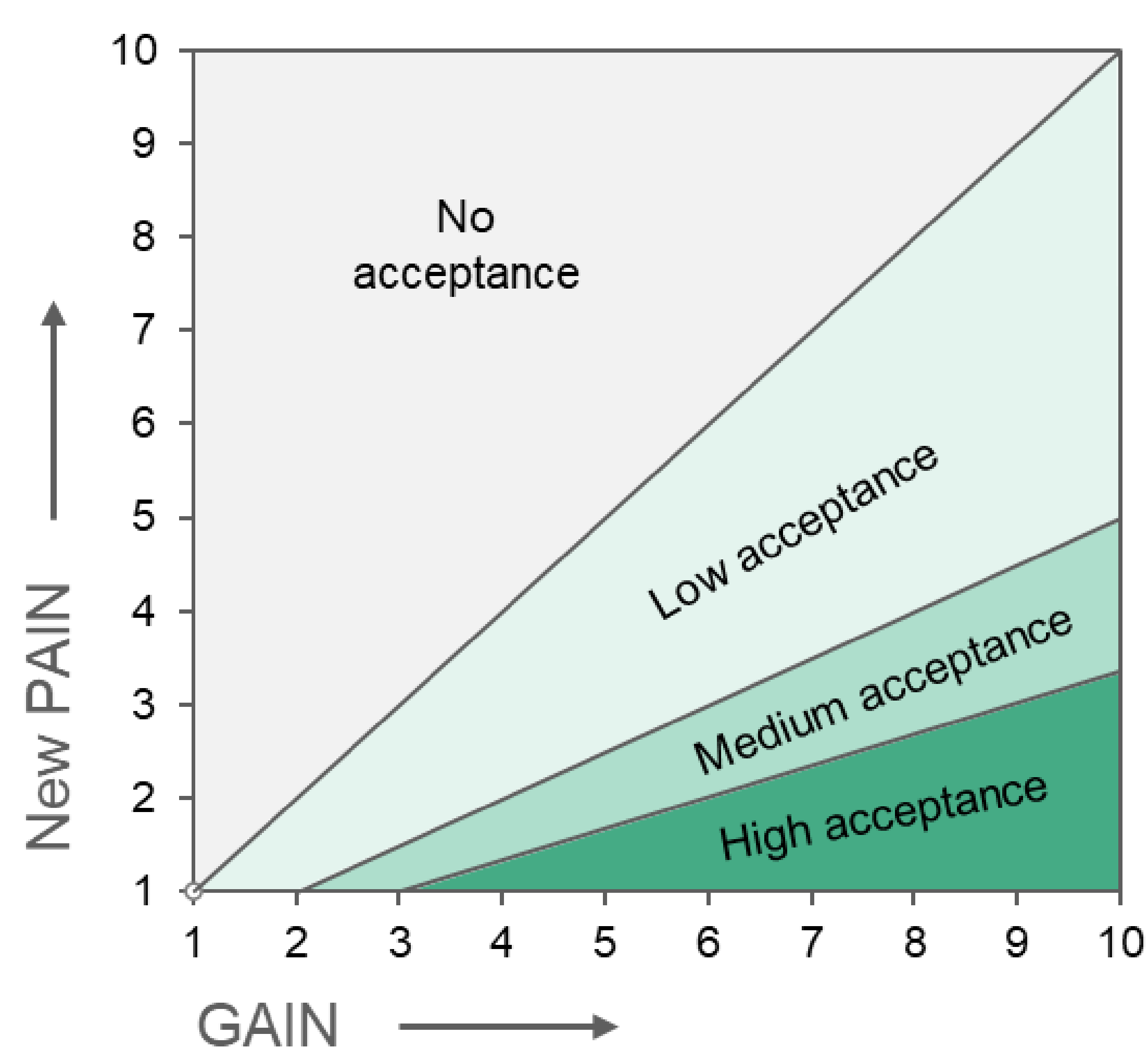
Innovations create added value, but always new problems as well. Whether the target group will use an innovative product or service depends on the ratio of added value (GAIN) to the effort for individual adoption (new PAIN). Which GAINS and PAINs the target group perceives and how they are evaluated varies from person to person.



The PAIN-GAIN-Test quantifies GAINS and new PAINs, making them tangible. The ratio of both, the PAIN-GAIN-INDEX® (PGI®), is a strong indicator of acceptance, i.e. the actual use and thus the economic success of the product:

$$\text{PAIN-GAIN-INDEX}^{\circledR} (\text{PGI}^{\circledR}) = \frac{\text{GAIN}}{\text{new PAIN}}$$

→ The PAIN-GAIN-INDEX is a KPI for customer acceptance and thus, the economic success of an innovative product or service.



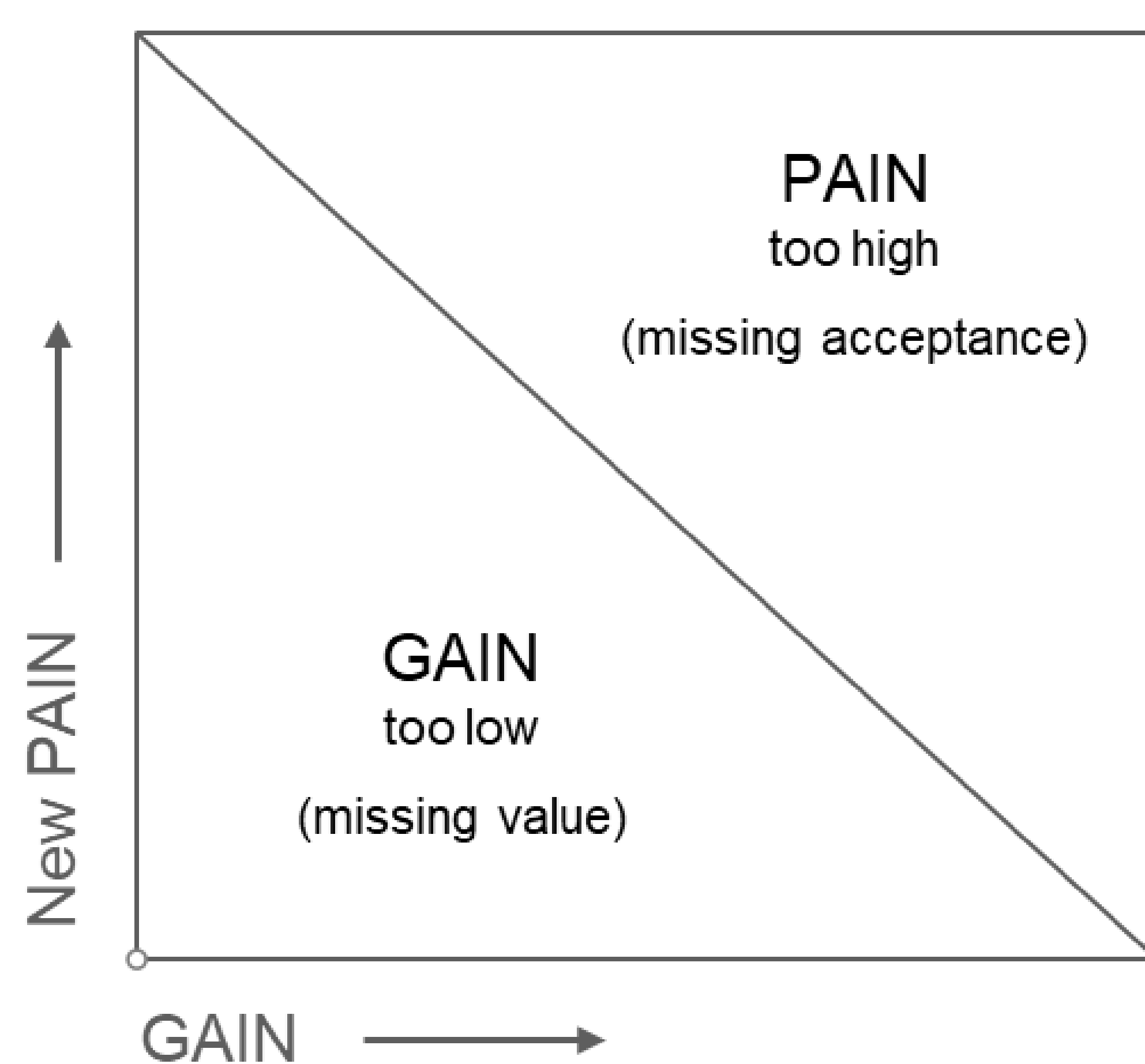
The central result of the PAIN-GAIN test, the PAIN-GAIN-INDEX® (PGI®), shows whether a product, a service or a business model will be accepted and used by the tested target group.

Results of the PAIN-GAIN-Test

The test shows whether and to what extent a product will be successful with a specific target group and delivers prioritized to-dos.

Five steps to Product-Market Fit.

1. The PAIN-GAIN-INDEX (PGI) shows whether an innovative product will be successful on the market. For the target group to accept an innovative product, the expected GAINS must be greater than the assumed PAIN. Prior research has determined a factor of 3 as the critical value that must be reached for the target group to change. Values around 2 will cause some to change but will make many hesitant. If the ratio of GAIN to new PAIN is less than 2 or even 1, customers will not adopt voluntarily.
2. PAIN-GAIN-Tests are often conducted with a heterogeneous target group. If the PGI is < 3 , it is usually possible to identify sub-segments within the target group that can be successfully addressed and those that should only be addressed in the second step. In certain cases, it becomes clear that the development of two product alternatives is advisable.
3. If an innovative product with a $PGI < 3$ is to be pursued further with the target group, the PAIN and GAIN values show whether the value proposition needs to be increased, the usage barriers reduced or whether work needs to be done on both parameters.
4. If PAINs have to be reduced, the detailed usage barriers show where the next Euro needs to be invested to achieve maximum benefit.
5. Before marketing, the prioritized usage drivers show how a product can be marketed most successfully to the respective target groups.



The PAIN-GAIN test shows the need for action for success and prioritizes the levers where the next invested Euro will bring the highest success.

Examples

Exemplary PGI results and their implications.

How figures can be turned into need for actions

Depending on GAIN and new PAIN differing implications arise for the product owner. Four examples:

Example A:

The value added of the product is low, the usage barriers high.
Product A cannot be successful in the market.

$$PGI = \frac{GAIN}{new\ PAIN} = \frac{4}{8} = 0,5$$

Example B1:

Future users perceive a high added value in the B1 product, but unfortunately also very high barriers to usage.

Approach: Reduce barriers

$$PGI = \frac{GAIN}{new\ PAIN} = \frac{8}{8} = 1,0 \Rightarrow PGI_{new} = \frac{8}{2} = 4,0$$

Example B2:

Prospects see low barriers to usage, but at the same time only a low value added.

Approach: Increase value proposition

$$PGI = \frac{GAIN}{new\ PAIN} = \frac{3}{3} = 1,0 \Rightarrow PGI_{new} = \frac{9}{3} = 3,0$$

Example C:

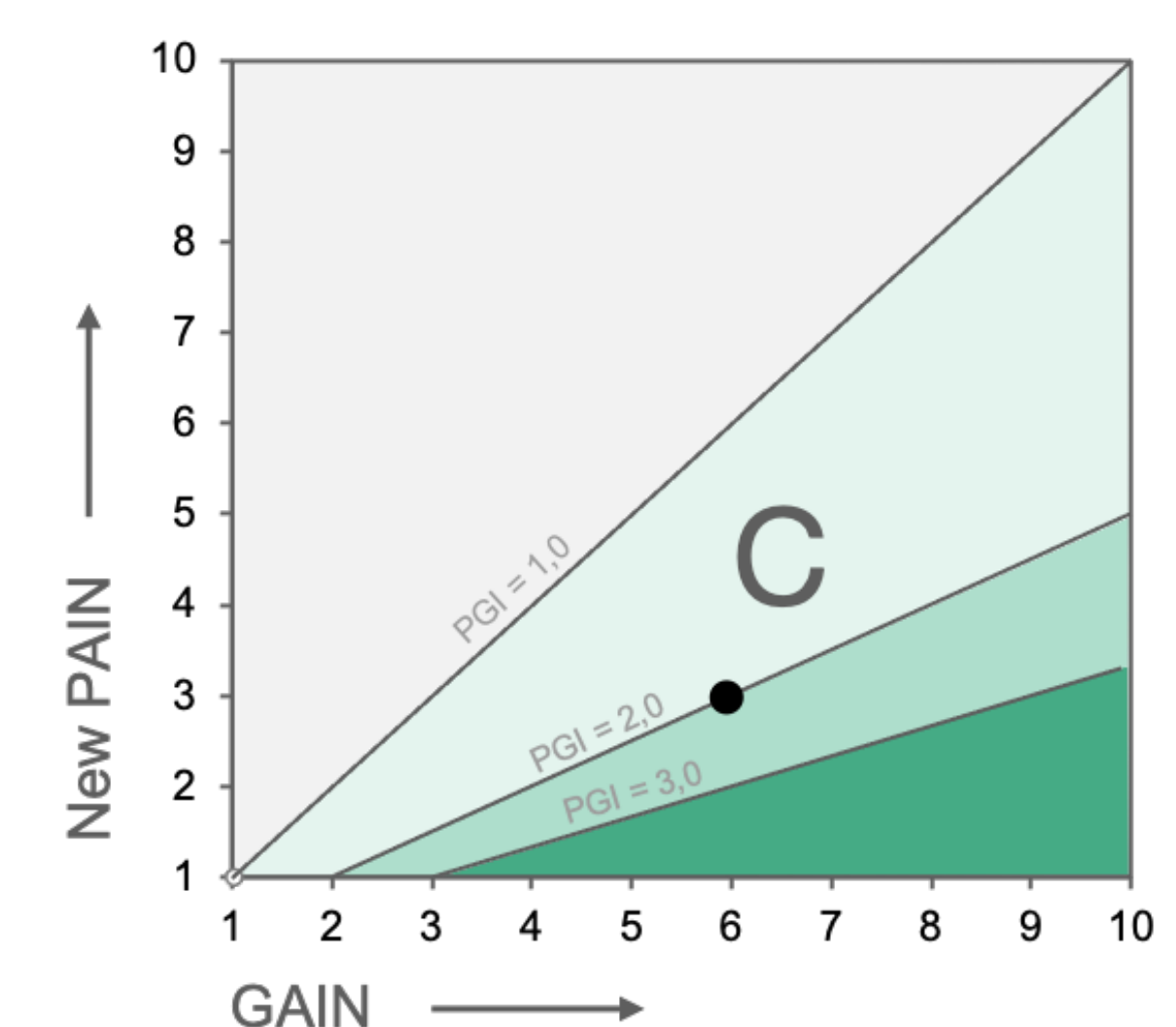
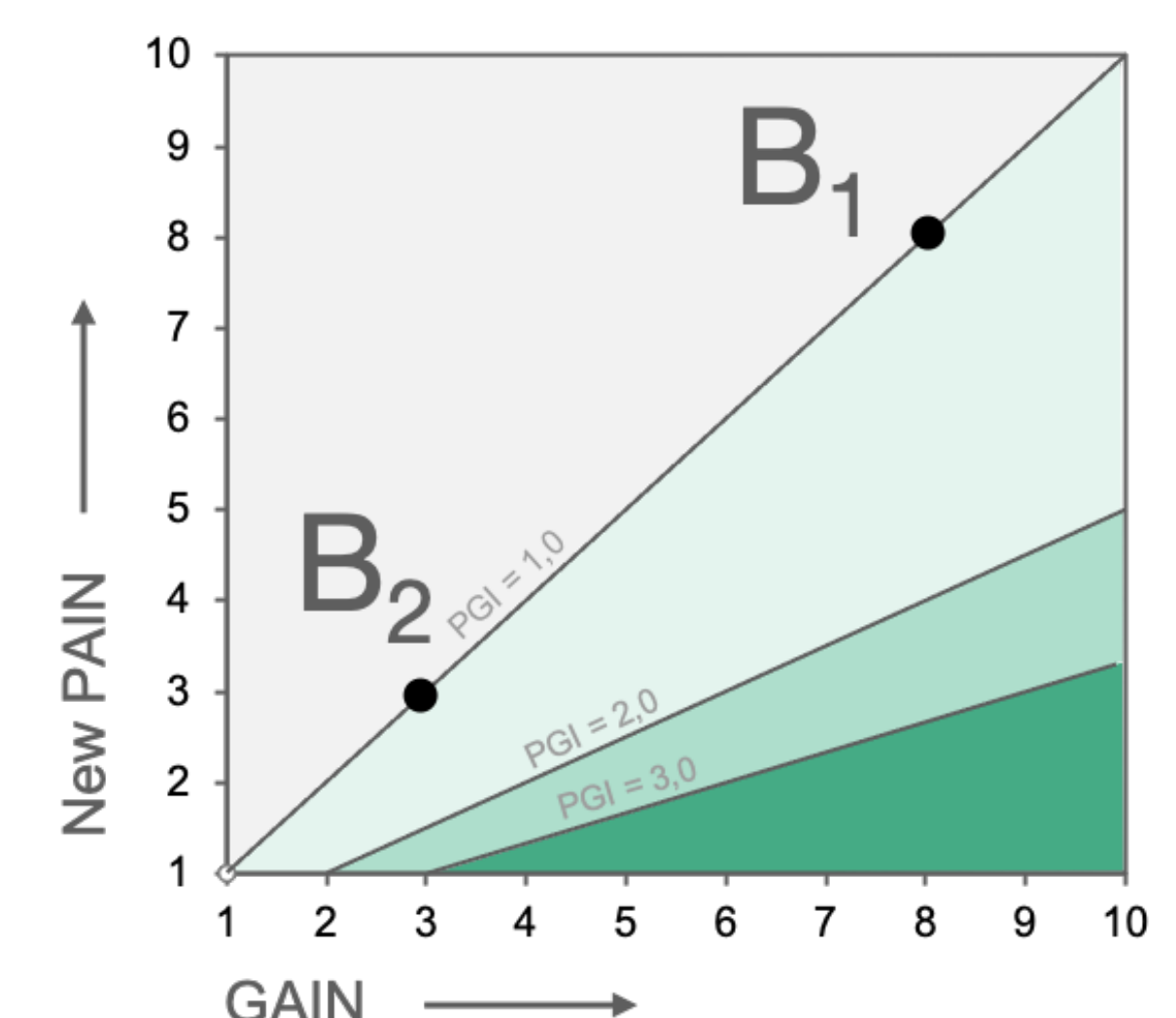
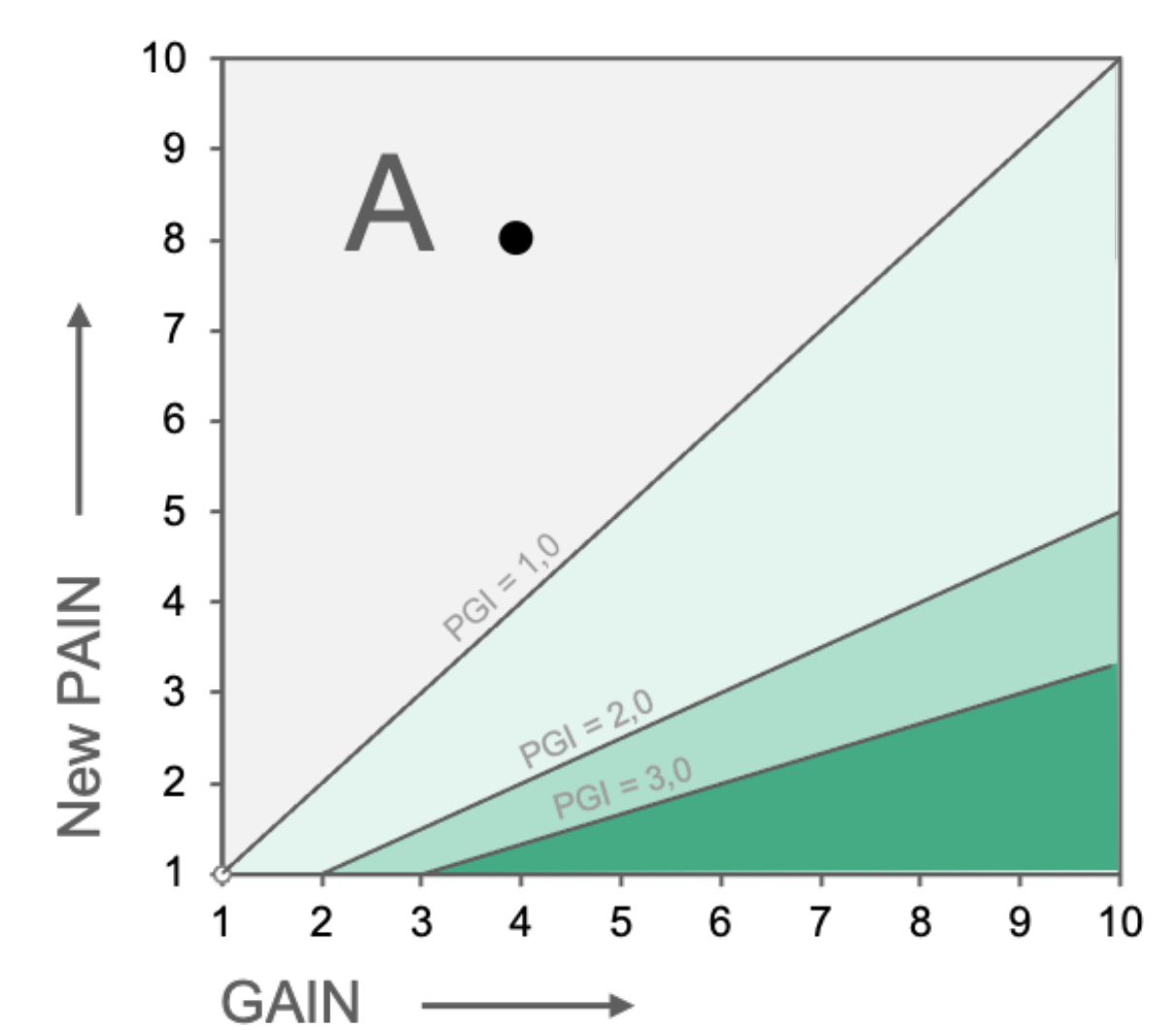
The perceived value added is significantly higher than the barriers to usage. Nevertheless, the product will find it difficult to penetrate the market.

Approach 1: Increase value proposition

$$PGI = \frac{GAIN}{new\ PAIN} = \frac{6}{3} = 2,0 \Rightarrow PGI_{new} = \frac{9}{3} = 3,0$$

Approach 2: Reduce barriers

$$PGI = \frac{GAIN}{new\ PAIN} = \frac{6}{2} = 3,0 \Rightarrow PGI_{new} = \frac{6}{2} = 3,0$$



The details of the analysis show which levers can best be used to increase the value proposition and / or reduce barriers..

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Customer KPIs for the innovation lifecycle: Early Phase

The Product-Market Fit as a criterion for investment and prioritization of ideas

1. Portfolio management: prioritizing innovations

Many companies have outsourced their innovation departments into independent companies. These companies systematically coordinate innovative ideas and manage development and marketing. Prioritization is problematic: Usually, there are more ideas, than the number of ideas which can be implemented with the available resources.

With the PAIN-GAIN test, a wide variety of ideas can be tested comparatively according to a uniform standard for expected market success. This results in a prioritization of ideas from the user's perspective.

What our customers get out of it:

- Resources are directed to the ideas with the greatest potential on the basis of user data.
- The prioritization is carried out with a scientifically proven method.

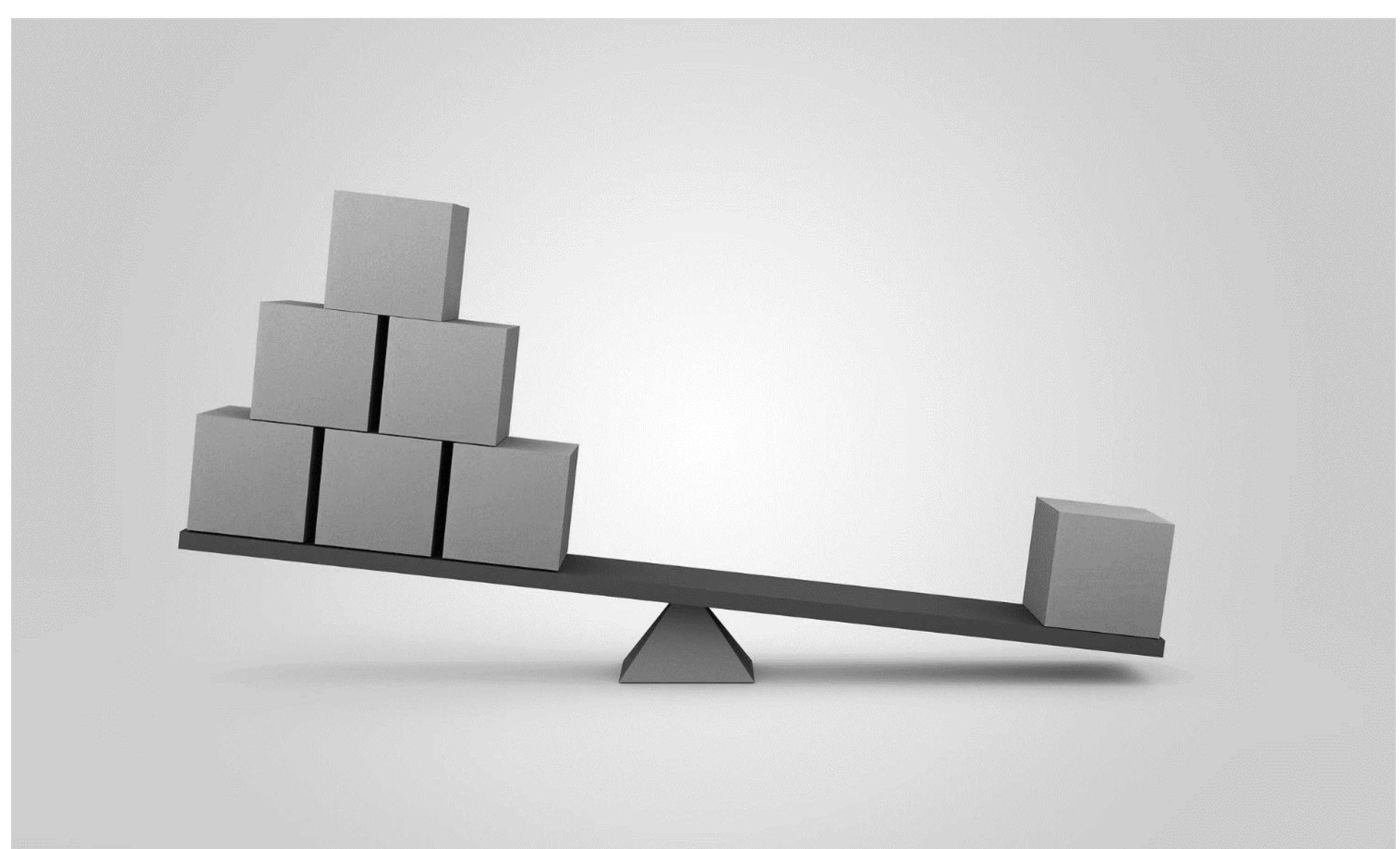
2. Investment of investors: Due Diligence from the customer's point of view

Investors are permanently looking for promising business models and start-up teams with promising ideas. The assessment of whether an investment will be successful or not is usually based solely on the experience of investment managers. In addition, sometimes there is feedback from a few pilot clients which, however, cannot be transferred to the mainstream customer.

The effort and costs of an agile PAIN-GAIN test as part of the due diligence process are small in relation to the added value of securing the decision with reliable data.

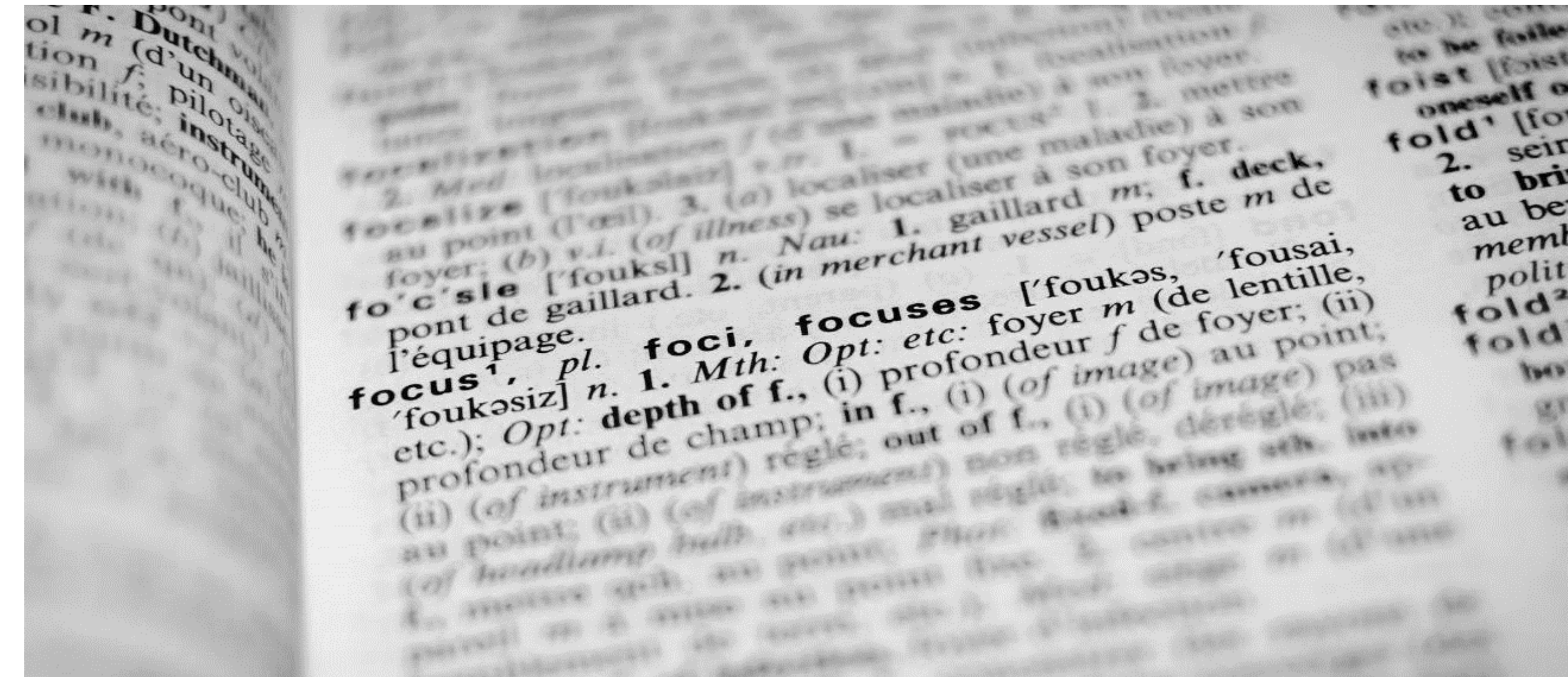
What our customers get out of it:

- The revenue side of investment decisions is secured.
- The flop rate is significantly reduced.
- Investors can control their investees with customer data.



Customer KPIs for the innovation lifecycle: Development and Launch

The Product-Market Fit for requirements definition of products and the optimal target customer approach



3. Development and IT: Requirements definition for the creation of specifications

Technical development and UX design are more than ensuring technical functionality and usability. The "how" of implementation has a significant influence on the success of a product.

The PAIN-GAIN test provides the development team with the necessary details required for a successful implementation. This allows the development team to focus on the features with the greatest potential and to omit less important ones. This also helps the backlog of an already finished product: Which additional features should be developed first? Which ones should be put on hold?

What our customers get out of it:

- Save time by avoiding unnecessary loops.
- Reduce costs by focusing on the features that are of relevance to the customer.

4. Marketing: Determination of the relevant USPs

Especially companies that have been working for a long time on the development of an innovative product have a strong focus on the technical superiority of a system or an algorithm. The perspective of the future users easily falls out of sight.

The PAIN-GAIN test shows which messages can be used most successfully to address the target group. The USPs from the PAIN-GAIN test form a high-quality list of requirements for the marketing agencies' briefing.

What our customers get out of it:

- Cost reduction in sales and marketing through a tailored target group approach.
- Higher turnover through successful targeting.

Customer KPIs for the innovation lifecycle: Diffusion and Conversion

Shorten the marathon: A KPI for successful diffusion and more conversion in the field.

5. Market share: acceleration of market diffusion

The segmentation according to Rogers makes clear that the users who successively adopt a product have very different reasons and barriers for usage. The successful start with the innovators cannot automatically be transferred to the early adopters. If the early adopters are then on board, it does not mean that the next segment, the early majority, can also be acquired. This means that many start-ups get "stuck" after initial successes, without any clear reasons.

The PAIN-GAIN test shows the drivers and barriers for each target segment and thus allows targeted and successive addressing of the segments as a prerequisite for successful diffusion.

What our customers get out of it:

- Cost reduction by reducing distribution costs.
- Higher sales through accelerated diffusion.

6. Growth: development and conversion

After the launch is before the launch. Especially for digital products, work is already underway on the next release before the launch. The list of ideas for further features is usually long.

This is where the circle closes: as described above, the PAIN-GAIN test reliably shows which product characteristics and features will make the greatest contribution to further economic success as the company continues to grow and where investments are needed.

What our customers get out of it:

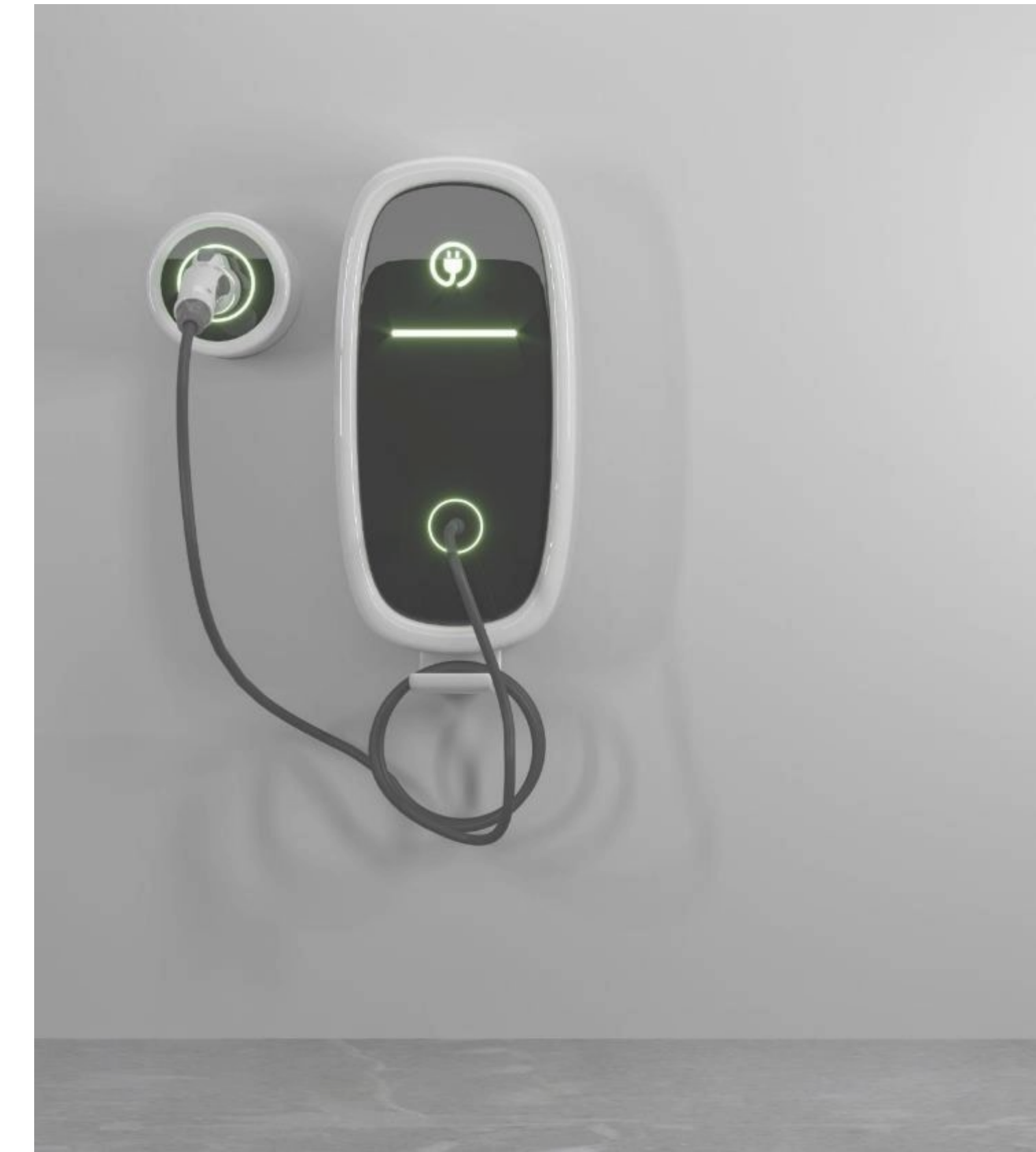
- Accelerated growth through "real" customer orientation.
- Increase in sales and revenues through growth.



Case Study 1

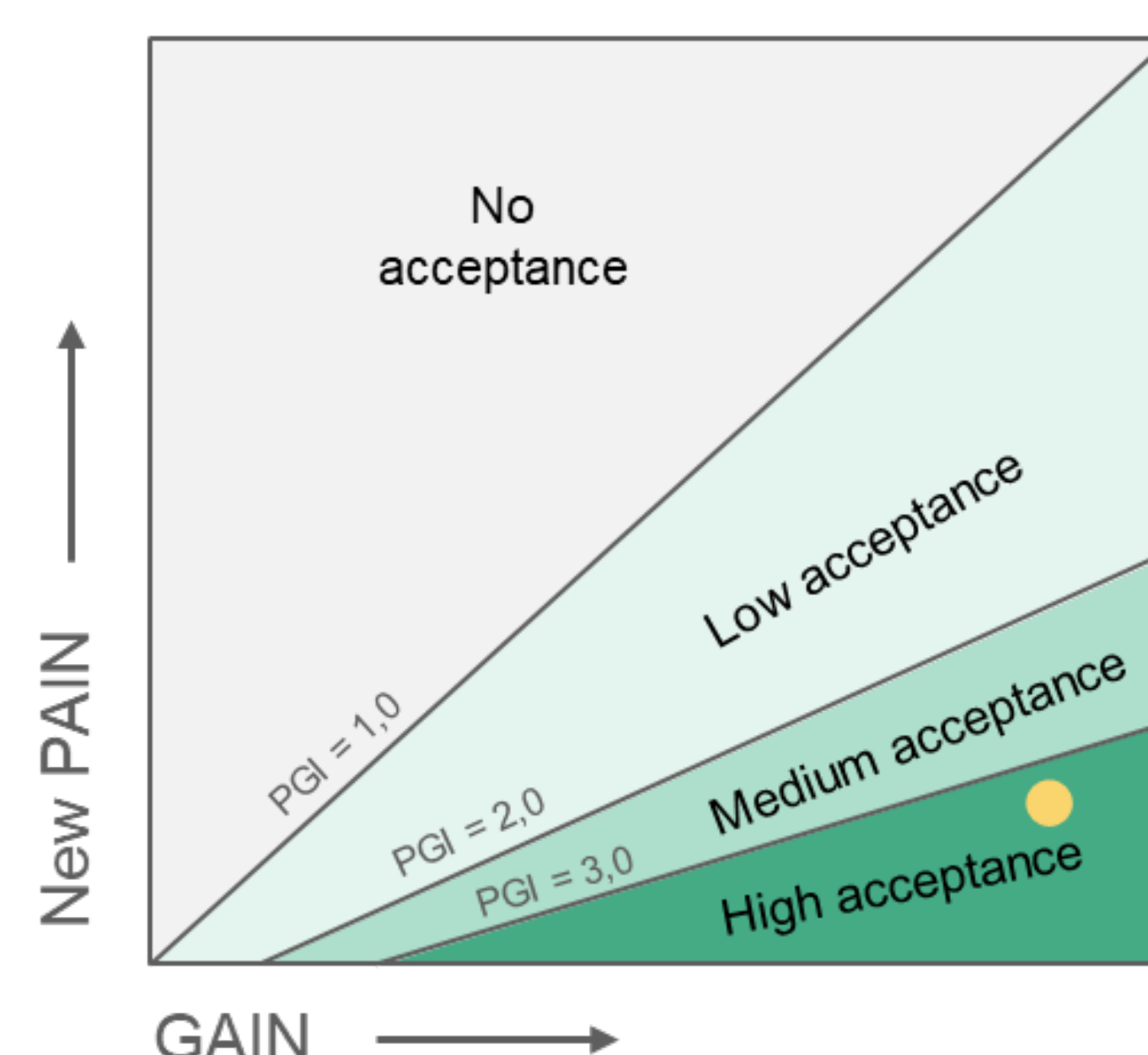
Go- / no-go decision before development starts.

Customer	envia Mitteldeutsche Energie AG (enviaM)
Initial situation	The energy industry agrees that all in all, there is sufficient electricity available for the transition to e-mobility. However, the temporal distribution on demand is problematic. In order to reduce peak loads in the power grid, a tariff for grid-friendly EV charging needs to be developed.
Goal	The aim of the study was to determine whether and under which conditions e-car drivers are willing to transfer to tariffs with grid-friendly charging, despite the disadvantages. Based on the analysis, a decision is to be made as to which product should be developed at this point in time and with which properties.
Approach	In the survey, 150 EV drivers were presented with a tariff model for grid-friendly charging with its advantages and disadvantages.
Results	The current e-car drivers belong to the group of innovators and are strongly convinced of the ecological advantages of e-mobility. The willingness to use a tariff for grid-friendly charging is correspondingly high: The PAIN-GAIN-INDEX (PGI) shows values well above 3. Despite the high intrinsic motivation, users expect the changeover to "pay off" in monetary terms and name saving expectations that result in high demands on product developers. The details of the analysis show further levers for successful implementation for different target groups.



"Developing products in a customer-centered and manageable way is our top priority. With the help of the Pain-Gain-Index, we have learned what moves our customers. UScale has thus provided us with a perfect basis for the further development of the product!"

Anke Tallig
Product developer
envia Mitteldeutsche Energie AG



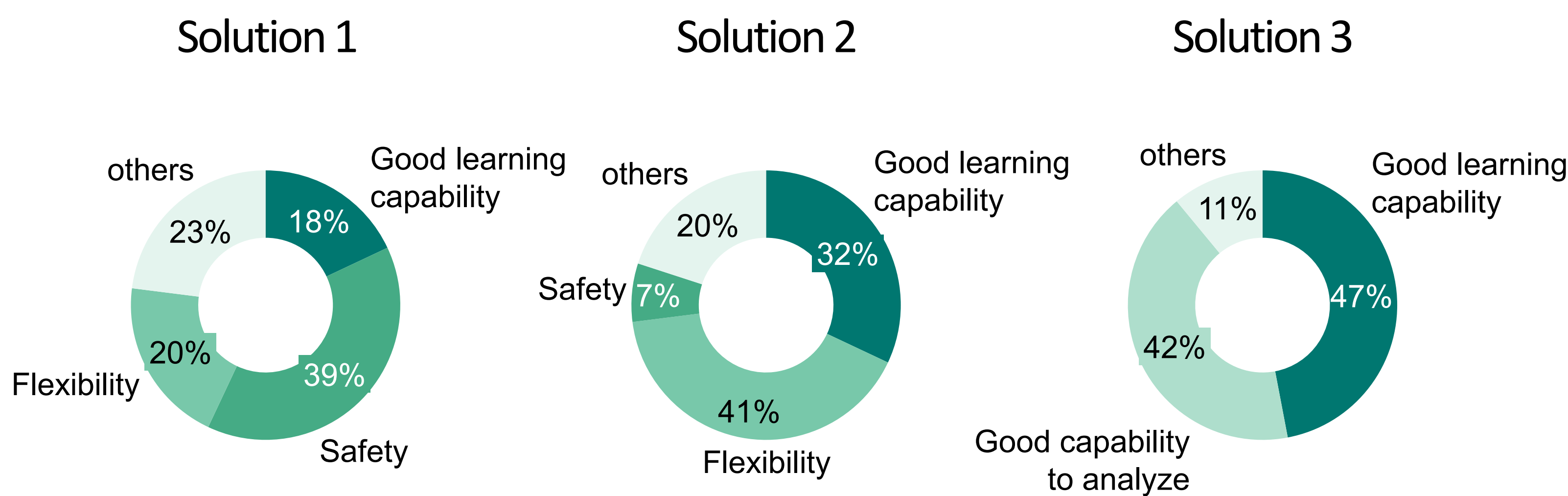
High acceptance values of grid-friendly charging are achieved among the target group

Further steps	The acceptance evaluation provided enviaM with the necessary basis for the strategic decision to develop an offer for grid-friendly charging.
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Case Study 2

Prioritization of solution approaches in the early phase of product development.

Customer	SDP Digitale Produkte GmbH
Initial situation	The use case "sawing under voltage" is a very dangerous and demanding task for emergency services, e.g. after storms. SDP has developed three new digital training approaches.
Goal	The test should clarify which of the three ideas will have the greatest success with the target group and which characteristics should be paid particular attention to during development.
Approach	Three solutions for evaluation were presented to emergency services and heads of operations of professional and voluntary fire departments, THW and forest workers.
Results	With PAIN-GAIN-INDICES between 2.2 and 2.9, there exist great differences between the solutions. The advantages of the three solutions as perceived by users differ greatly. While the testers appreciate the security aspect in the learning environment with solution 1, the flexible application is the most important marketing aspect of solution 2. Solution 3 is certified to have very good analysis possibilities, but disadvantages in practical handling (not shown here). Similar to the usage drivers, the usage barriers show the limits of the individual solutions. These can still be considered in the implementation.



"For us, the Pain-Gain-Index is a valuable building block in the evaluation of ideas and business models and is now a fixed component of our toolbox!

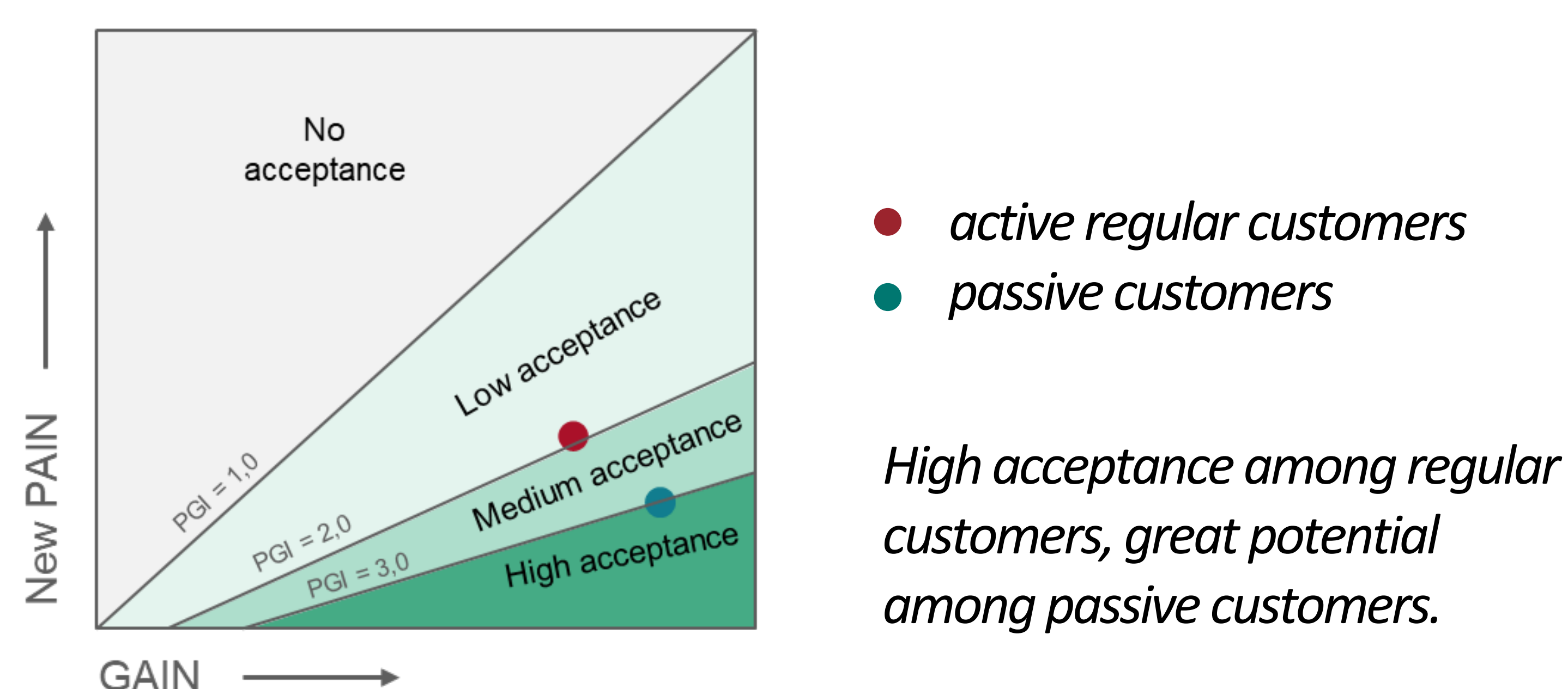
Kai Blisch
 Director Products & Operations
 SDP Digitale Produkte GmbH

Further steps	Based on the results, SDP has decided to stop the previously favored solution. Instead, the two other approaches will be pursued further. The details show where the technology still needs to be sharpened and concerns addressed and provide guidance for marketing to easily reachable target groups.
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Case Study 3

Pushing the diffusion after a successful market launch.

Customer	LASERHUB GmbH
Initial situation	LASERHUB operates a b2b platform with which processing orders for sheet metal processing are calculated and processed via external producers. Six months after the market launch, the company wanted to grow and was looking for an investor.
Goal	There were many ideas for further growth, but it was not clear where to invest. Which measure will have the greatest impact on sales? And how can passive users be activated?
Approach	The PAIN-GAIN test identified the usage drivers and barriers of regular and passive customers.
Results	With high GAIN ratings of its regular customers, the LASERHUB platform offers a very high-value proposition. Despite low PAIN values, there is potential: better operation and greater transparency in the workflow can further reduce PAIN values. The feedback from passive customers shows how this customer group can be activated, i.e. led to sales.



"UScale's approach has shown us our strengths and the barriers to higher conversion. Now we have robust information to optimize our offer for our customers".

Christoph Rößner
Managing Director
LASERHUB GmbH

Further steps The results provided leverage for further increasing the sales of active customers. By making small changes to the product range, customer loyalty can be further increased before new competitors enter the market.

Surprisingly, many passive customers saw the platform's USP in a different place than their regular customers. This resulted in an additional business model.



Scale your User
Scale your Business

UScale is a consulting firm specializing in the product-market fit of innovative products and services. Our main focus is on New Mobility.

We develop customer KPI systems and strategies for the successful development and marketing of innovative products and services.

Our customers are innovation hubs of large and medium-sized companies, investors, start-ups, car manufacturers and energy suppliers, IT companies and service providers.

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