

PAAS QUESTION KIT



IN A RUSH?
FIND QUESTIONS
ON PAGE 6

Are you a Product-as-a-Service (PaaS) entrepreneur with a circular business proposition in need for finance? Are you a financier willing to invest in PaaS? Then this PAAS Question Kit can help you to be either best prepared for a financial interview or to perform a financial assessment. The questions narrow the knowledge gap between PaaS entrepreneurs and financiers. Let's accelerate the transition to a circular economy together!

PAAS - THE THEORY

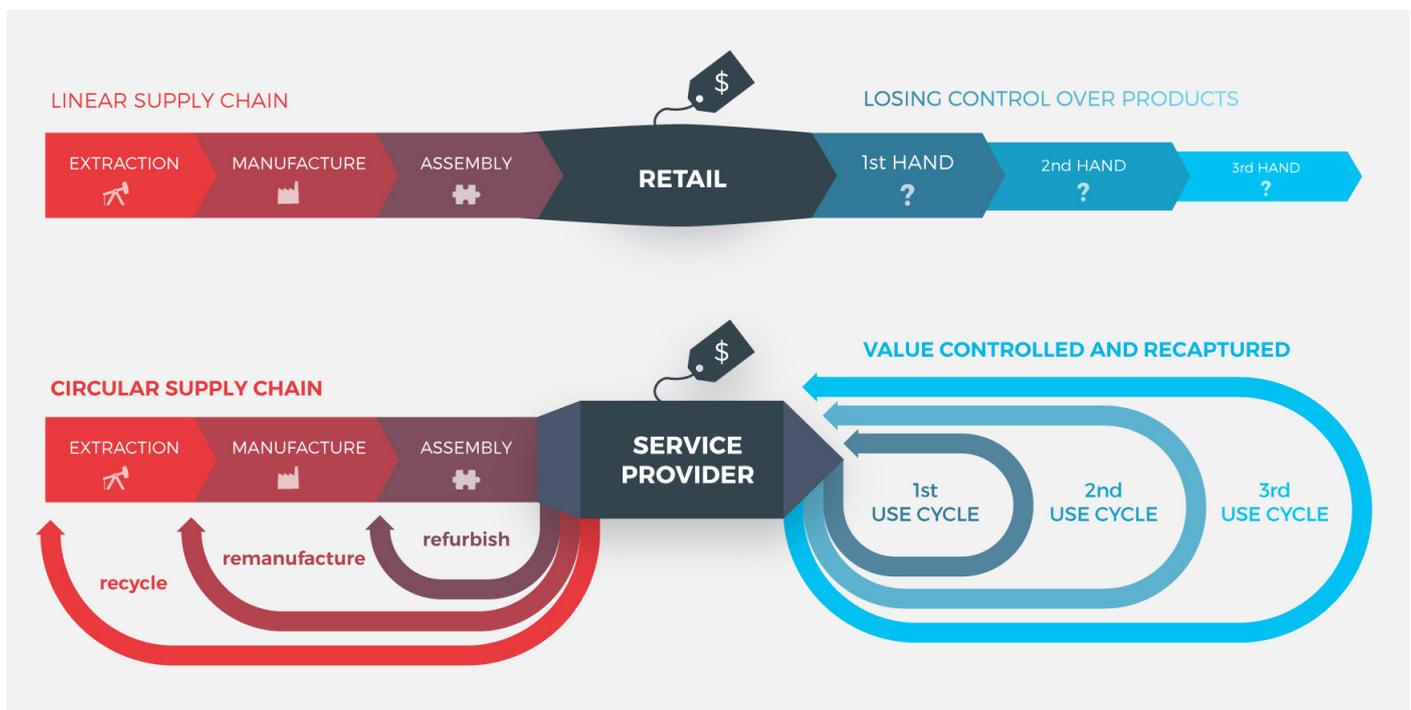
In a linear supply chain the economy follows the take-make-waste approach: commodities are extracted from the earth, processed, assembled and sold to the market. After the sale the producer loses control over the product. Most products eventually end up as landfill or are incinerated. There is a lack of incentive to produce

durable products. In contrast, producers are incentivised to manufacture products which last for a short period of time in order to increase (recurring) sales.

Figure 1 illustrates that in a PaaS circular supply chain the role of the retail/sales company is replaced by a service provider. Instead of paying for ownership of a product, in a PaaS business model the customer pays for access to the product and for the additional services provided in return for a recurring service fee.

In contrast to a for-sale business model, in a PaaS business model service providers retain ownership of the products and are therefore incentivised to create value by offering high-quality, durable products that can be easily upgraded, repaired, refurbished and/or taken back at the end of their useful life.

Figure 1. Controlling & recapturing value in multiple use cycles vs losing control over products (Fischer, Achterberg 2016)



Disclaimer: The information in this report is retrieved from interviews undertaken by Circle Economy and by articles from: Achterberg, Hinfelaar, Bocken (2016); Achterberg, van Tilburg (2016); ABN AMRO, ING, Rabobank (2018); FinanCE working group (2016); Fischer, Achterberg (2016); Toxopeus, Achterberg, Polzin (2018). Please see reference list at the end of this report.



NOT ALL PAAS BUSINESS MODELS ARE CIRCULAR

PaaS service providers are not always supporting the circular economy. Only when they provide an incentive to optimize the long-time use of a product, provide a vehicle with which to return the product after use and provide reasons to involve supply chain partners to stimulate circular design and the use of renewable and reusable materials do they promote the circular economy.

PAAS COMPLEXITIES

Financing a PaaS proposition is not straightforward. The complexities can be divided into:

THE CASH FLOW

In contrast to a linear business model, the incoming cash flow of the PaaS service provider is delayed as the customer pays a small service fee on a recurring basis instead of a one-off payment when buying the product.

THE CUSTOMER

Instead of a one-off relationship between a company and a customer as in a for-sales model, in a PaaS business model the relationship between the service provider and the customer is an ongoing engagement. The creditworthiness of the customer is crucial for the robustness of the cash flows.

THE SERVICE CONTRACT

The ongoing relationship between the service provider and the client is captured in a service contract. It is of utmost importance to assess these terms and conditions in order to be aware of the responsibilities of each party.

THE ASSETS

The underlying assets are most often less adequate as collateral, i.e. assets that are accepted by the financier as security for the loan and which can be seized by the financier in an event of default. If the assets are of low value (e.g. household appliances, clothing, mobile phones) they cannot easily serve as collateral.

THE CIRCULAR SUPPLY CHAIN

A circular supply chain is as strong as the weakest link in the chain. Risk exposure depends on the resilience of the network instead of that of a single company.

PAAS STRENGTHS

To counter the complexities, please take into account the PaaS strengths below:

PRODUCT LIFESPAN

As accountability for the product is shifted from the customer to the service provider, the incentive for the service provider is to increase resource and asset productivity and to prolong the lifetime of the product. This generates increased revenue.

CUSTOMER RETENTION

The combination of strong service contracts and the unbundling of the customer through taking care of maintenance, repair, recycling and other additional services can lead to an increase in customer retention. This benefit has the ability to generate stable, long-term revenue, compared to a traditional sales business model through which it is more difficult to establish long term relationships with customers.

SOURCING

The costs of purchasing inventory are less volatile as PaaS service providers are less exposed to price volatility of scarce resources. This follows from prioritization of reusable materials and ownership retention of the resources by the service provider.

USER DATA

Generated user data can be utilized for product development, for predictive maintenance and to measure environmental impact.

ENVIRONMENTAL IMPACT

Through optimization of usage of the asset and prioritizing existing material flows as input a positive impact on the environment is made.

I TO PAAS ENTREPRENEURS

The following part describes how to best prepare for a financial interview. Are you a PaaS Financier? Then please go to the next page to find more information on how to finance a PaaS service provider

BUSINESS ASSESSMENT

It is important to understand how your business will be assessed by the financier. A financier will analyse your business plan including financials in order to assess the organisational, commercial, and financial viability of your business. In general, the backbone of financial decision-making at the level of banks is based on historical financial data, available collateral and revenue generation. Early stage financiers will, due to a lack of historical financial data, primarily focus on forecasted financial data and qualitative aspects, such as the background and experience of the entrepreneur.

PERCEIVED RISKS

Perceived risks by financiers of circular business models can be overwhelming due to a lack of information and traditional ways of risk modelling, which fail to capture the advantages that circular business models present (FinanCE working group 2016). PaaS business models are considered to be new and innovative with a lot of market uncertainties. Market demand for a PaaS proposition is unclear and financiers have a lack of experience with other successful similar PaaS service providers. Therefore, a financier will consider a PaaS proposition as a high market risk proposition.

Next, the underlying assets in circular PaaS models are most often less adequate collateral as they generally have a low underlying value, can be costly to collect, especially in a B2C scenario, and most often the long-term market value is unproven.

Furthermore, as the PaaS service provider stays the owner of the asset, the financial risk for the asset throughout its lifetime will be carried by the service provider.

Lastly, the maintained ownership of the assets leads to a growing balance sheet with every new customer which negatively influences financial ratios (see box).

FINANCIAL RATIOS

Minimizing risk and maximizing return often defines the success of the financial industry. As from the scale-up phase, a financier will look at solvability, profitability and liquidity. Solvability is often regarded as a measure of a company's long term financial health and looks at the percentage of equity in comparison to the total size of the balance sheet. Liquidity looks at the short-term health, i.e. can the short-term debt obligations, e.g. interest to be paid on current loans, be covered by current assets? With respect to profitability many different ratios can be used, but bottom-line financiers would like to see that a positive pre-tax profit is made and positive cash flow is generated.

SECURING FINANCE CAN BE A REAL CHALLENGE!

Aim to involve financiers as early as possible. Inform financiers of your business progress, accomplishments and future goals. This builds up track record, trust and establishes a relationship.

IS THE ANSWER ON YOUR FINANCING REQUEST STILL NO?

Request your financier which improvements are needed to obtain a yes.

TO FINANCIERS

A PaaS business model requires financing to be based on the value of the service contracts, the creditworthiness of the customers and the quality of the underlying asset. Please take into account the remarks below in your assessment of the PaaS service provider.

Balance sheet growth negatively affects solvability

If the assets are purchased by the service provider and rented out, the assets will stay on the balance sheet of the service provider. A growing balance sheet negatively affects several financial ratios, amongst which solvability. Should a different threshold be set for PaaS service providers? Or alternatively, would leasing the assets be an option?

Delayed cash flows negatively affect short-term profitability

Revenues are delayed as products are rented out against a service fee. Profitability ratios will therefore be negatively affected. However, optimal usage of the product will extend longevity of the product and therefore revenues can be generated over a longer period of time. How can long-term profitability be incorporated in the financial assessment?

PaaS service providers are in for the long run

Circular businesses typically have a long-term strategy, focussing on long-lasting products and long-term relationships with their clients. The tenor of financial products should be able to reflect this. It should therefore be assessed what the most suitable tenor of a financial product would be for a PaaS service provider.

Grow along with the success of PaaS

A financial product can be structured in tranches based on certain success Key Performance Indicators of the PaaS service provider, which can be a combination of, for example, assets placed with customers, number of new customers, decreasing % defaulting customers. These factors will give a better insight into the health of the company than purely financial ratio analysis.

Match financing structure to the assets in use

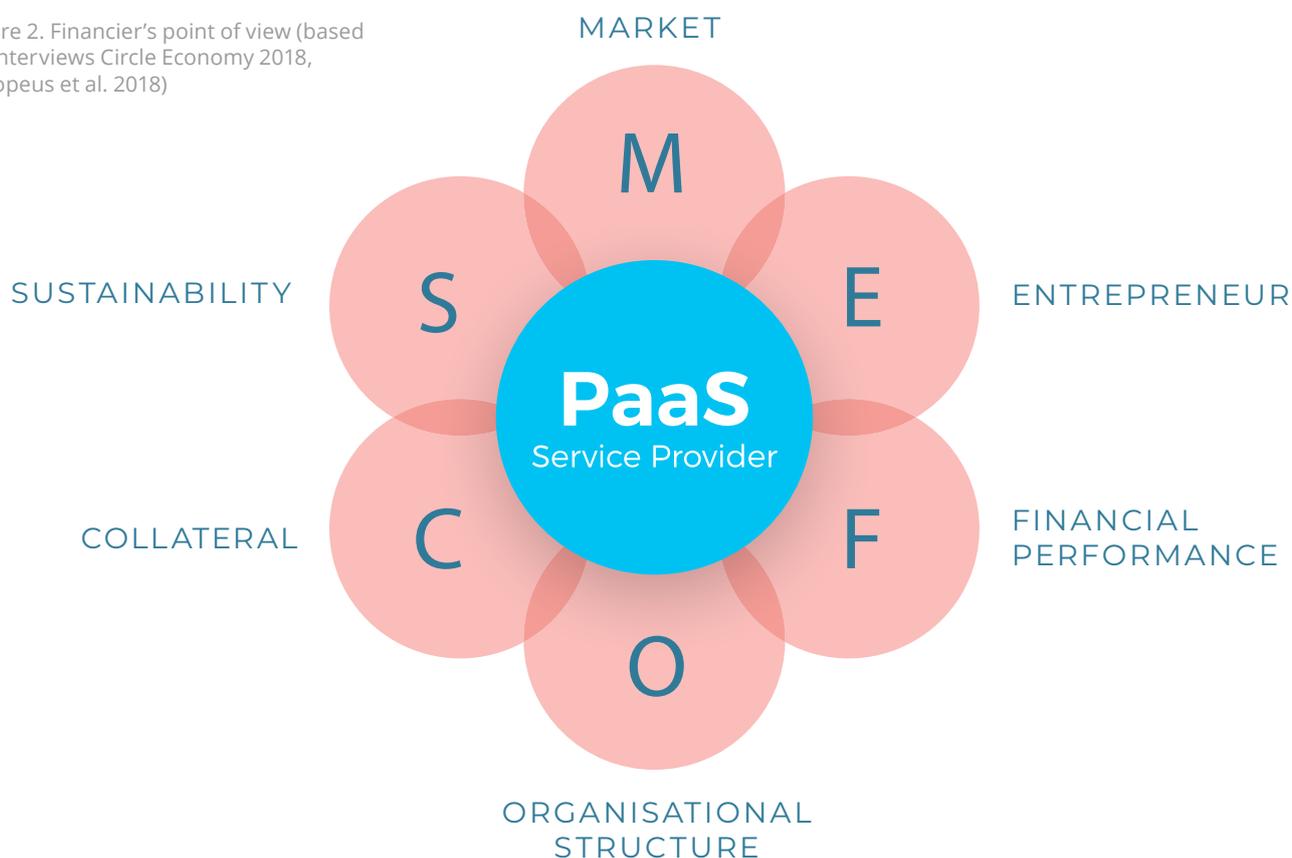
Lower financing costs can be reached by financing only assets, if they are suitable as collateral, that are actually set out to customers and therefore are generating cash flow. For example, these assets can be moved to a special entity holding all assets in use which can be the counterparty for the financing.

PAAS
QUESTIONS
&
MANUAL

PAAS QUESTIONS

Please find below 15 questions divided over six different aspects of the business model of a PaaS service provider. These six different aspects are taken from a financier's point of view. In the manual, as from the next page, the background to and reasoning for these questions is provided.

Figure 2. Financier's point of view (based on Interviews Circle Economy 2018, Toxopeus et al. 2018)



MARKET	What market analysis is performed? Who is the customer?
COLLATERAL	What type of collateral is available? Can the residual value be estimated? What is the strength of the service contract?
FINANCE	What is the earnings model? What is the robustness of the cash flow? What is the source of the start-up capital? What is the percentage of non-performing customers?
ENTREPRENEUR	Who is the entrepreneur?
SUSTAINABILITY	What is the positive environmental impact of the company?
ORGANIZATION	How is reverse logistics embedded in the value chain? What is the company structure? How to guarantee continuity of services in a default scenario? In what type of network does the service provider operate?

MARKET

WHAT MARKET ANALYSIS IS PERFORMED?

What is the current market share and what are the possibilities to scale? Who is the competition? Are there any entry or exit barriers? What are the technologies used? What government regulation is applicable? What makes the proposition unique?

To lower perceived operational risk the PaaS service provider can aim to work with proven production processes or technologies which already have an established track record.

WHO IS YOUR CUSTOMER?

A PaaS service provider can make a decision between targeting:

- businesses (B2B),
- governments (B2G), and/or,
- individual customers (B2C).

Targeting B2B and B2G markets have the advantage that the products to be serviced are less dispersed, which eases collection of collateral in case of default. Next, performing due diligence on and defining creditworthiness of business customers and of governments is relatively easier than of individual customers. Long-term signed contracts with creditworthy businesses or governments are an optimal source of collateral needed to provide funding. However, please keep in mind that dependency on a single customer brings in additional risk. Diversity and volume of service contracts are considered key for financiers when assessing the riskiness of the customer portfolio.

COLLATERAL

WHAT TYPE OF COLLATERAL IS AVAILABLE TO SERVE AS SECURITY FOR THE LOAN?

Which products are offered as-a-service? Are these new or refurbished products?

The financing request will be strengthened if the underlying assets are durable, flexible, moveable, standardized, easy to remove/disassemble and not too dispersed.

Keep in mind that the number of signed long-term service contracts with creditworthy customers can function as collateral for funding.

CAN THE RESIDUAL VALUE OF THE UNDERLYING ASSETS BE ESTIMATED?

Are there take-back schemes present in the circular value chain? Is there chain collaboration for refurbishment? Is there an active second hand market? As underlying assets in circular business models are sometimes innovative, no historical data on their residual value might be present. Companies should be able to explain how they validate the residual value.

Increasing the residual value of the underlying assets depends on how durable, flexible, moveable, modular and/or standardized the underlying assets are. Scoring positively on these aspects affects the marketability of the assets in multiple rounds of use (increase longevity of the product) and therefore lowers risk as collateral.

If the asset is a refurbished product, then how is the current valuation and future residual value established?

WHAT IS THE STRENGTH OF THE SERVICE CONTRACT?

It is important to clearly outline the responsibilities between the service provider and the customer in a legally binding contract. Important factors to consider are obligations of the service provider and customer, scope of services provided, and duration and opt-out clauses.

Given the shift in responsibility for the product to the service provider, customers might be tempted to treat the product with less care. Service specifications must be clearly translated into the service contract as providing a service does not mean service providers must pay for all the damage done by the user.

Longer duration of a service contract positively influences customer retention and subsequently the robustness of future cash flows. A monthly contract provides less comfort than an annual contract. The aim of the service provider is to prevent assets to stand idle. If the duration of a contract is short, then take into consideration the demand for the product (How many new customers join monthly?, Is there a waiting list?) and how easy and fast the asset can be placed with its next user. Can this be done without losing a service fee?

More difficult opt-out clauses positively affect customer retention. However, please keep in mind, some PaaS models are more likely to opt out than others. This also ties in with the question who the customer is: if part of the target group is expats who will move after a few years, then it can be assumed they will opt out.

FINANCE

WHAT IS THE EARNINGS MODEL?

How is the business going to be profitable? What are the customer benefits of the PaaS model compared to a regular sales model of the same product? How are customers made aware of these benefits? What are the additional services provided to unburden the customer? How does the price tag relate to buying the product? A transparent price build up is of added value for gaining customers' trust.

WHAT IS THE ROBUSTNESS OF THE CASH FLOW?

Robustness of cash flows relates to security of revenue generation and keeping costs under control, which leads to an increased capacity to repay the investment.

The additional services provided are an important cost driver. How realistic are the cost estimates made? Which reserves are built up to cover these costs and are these reserves expected to be sufficient? Is there any available historical data backing up the estimates?

Multiple use cycles can increase revenues significantly. Increased costs of monitoring, reverse logistics, maintenance, repair and refurbishment can be offset by the increased income from additional product use cycles.

Monitoring, through e.g. Internet of Things technology, provides opportunities to reduce maintenance costs. Through remote monitoring the utilization of the asset can be optimized which increases the lifetime expectancy of the product.

WHAT IS THE SOURCE OF THE START-UP CAPITAL?

A financier is obligated to perform a so-called Know-Your-Customer (KYC) procedure on each new funding request including questions regarding the source of the current financing to ensure the request is legitimate.

WHAT IS THE PERCENTAGE OF NON-PERFORMING CUSTOMERS?

A PaaS model with ongoing transactions creates the risk of customers defaulting on their obligation to pay for the service. Data should be available on the percentage of non-performance i.e. defaulting customers and/or theft. In the absence of relevant data reliable estimates should be made.

Checking with a credit rating agency (e.g. BKR), collaborating with a company specialised in credit checks (e.g. bank) and/or asking for a deposit or an upfront payment for the first months of the contract term are possible strategies to combat non-performance or theft.

Next, on which time interval is the account receivable book managed? What is the strategy with respect to late payments and defaulting customers? Which steps are taken? The PaaS service provider should ensure that the service can be disabled from a distance in the event of non-performance or theft.

ENTREPRENEUR

WHO IS THE ENTREPRENEUR?

One of the reasons physical interviews are undertaken is to meet the entrepreneur in person as providing financing is largely based on trust in the capabilities of the entrepreneur.

What is his/her background/experience? Who is in the team and what is the division of tasks? Is the business dependent upon one person, i.e. is there a key-man risk? What is the quality of requested information (e.g. quality of the business plan)? What are the salaries paid?

SUSTAINABILITY

WHAT IS THE POSITIVE ENVIRONMENTAL IMPACT OF THE COMPANY?

The financier will assess, both qualitatively and quantitatively, the social and environmental impact of the company with respect to, for example, CO2 emission, energy and water use, and waste generation.

Next, the impact on society is assessed with respect to human rights, labor conditions, gender equality and other determinants of human wellbeing. Quantifying and reporting the environmental impact of circular activities enables financiers to make decisions based on other values in addition to their financial assessment.

Taking into account social and environmental values is regarded as integrated thinking. The latter is a developing field in integrated reporting and this approach supports sustainable business practices.

ORGANIZATION

WHAT IS THE COMPANY STRUCTURE?

An organisational chart is needed to show the organisational structure, i.e. what activities take place in which entities. For the financier this is important in order to decide to which entity the money will be lent to or invested in.

Additional comfort for a financier can be retrieved if, for example, all assets which are generating income are placed in a separate operating entity, as that will be the entity which is attractive to finance. Or is there cash flow from other business entities which can guarantee the new circular business?

HOW TO GUARANTEE CONTINUITY OF SERVICES IN A DEFAULT SCENARIO?

The PaaS service provider should arrange how the services to the customer can be pursued by a third party in an event of default. If the contractual agreements can be continued to be met by the third party, incoming cash flow from the service fees can be maintained.

IN WHAT TYPE OF NETWORK DOES THE PAAS SERVICE PROVIDER OPERATE?

Embeddedness of a firm in networks indicate business proposition relevance to others. How is the cooperation within the network? What are the agreements with suppliers and other stakeholders? How are incentives aligned in the chain? How creditworthy and experienced are the stakeholders? Are certain stakeholders easy to replace in the event of default or non-performance? How are risk and rewards shared along the chain? How committed is each supply chain partner?

HOW IS REVERSE LOGISTICS EMBEDDED?

Is there a reverse logistics strategy embedded in the business plan in order to close the cycle? A solution can be a track and trace system in order to be less dependent upon virgin resources and to ensure assets are returned.

CIRCLE FINANCE PROGRAMME

The Circle Finance programme aims to accelerate the transition to circularity through the development and implementation of practical and scalable solutions for the finance sector in general, and for organisations in need of financing for circular business models.

PAPERS & REPORTS

The work of the Circle Finance programme, in cooperation with several other parties, has led to an extensive knowledge base, published in several papers and reports:

[Master Circular Business with the Value Hill](#)

[10 Step Guide to Creating a Financeable Circular Business](#)

[6 Guidelines to Empower Financial Decision-making in the Circular Economy](#)

[The Circular Phone](#)

[Building Value](#)

[The Circular Service Platform](#)

[Linear Risks](#)

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ABOUT CIRCLE ECONOMY

The mission of Circle Economy is to empower a global community of businesses, cities and governments to accelerate the transition to the circular economy through practical and scalable insights and solutions that address humanity's greatest challenges.

Founded only 7 years ago in The Netherlands, we are recognised internationally as a key player in the global circular economy ecosystem. We have dedicated programmes for cities, finance, textiles, design and the built environment.

For more information, please visit:
www.circle-economy.com