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# Review and Development Of Revenue Models For A Co-Creation Platform In The Furniture Sector

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## Abstract

Pricing is one of the most important, but underestimated tool, to enhance a company's profitability. Especially in the furniture sector, customers place a special interest in cost-efficient products and easy processes. Individualised and sustainable furniture can help to create a unique selling point and deliver real value to the customers. Therefore, a platform to create designs together is needed and can involve several stakeholders in the design and production phase. However, in order to include several stakeholders, the pricing and revenue model need to reflect individual needs and be a benefit to all. In this paper, the initial situation and potential revenue model options will be presented. Furthermore, multiple scenarios for practical use will be discovered and an overview given.

## Keywords

Revenue models, pricing; value-based pricing; co-creation; platform; do-it-together

## 1. Introduction

Nowadays, the furniture industry mass-produces low-cost furniture, where the products are characterized primarily by short life and low quality [1]. High competition is pushing smaller companies out of the market and aspects of product individualization to meet different living spaces and lifestyle requirements are increasingly taking a back seat. If the desire for an individualized, innovative, and sustainable piece of furniture arises, there are currently various suppliers, but they often do not meet all criteria and have long delivery times, high prices and low customer involvement [2]. Therefore, there is a need for a platform where customized, innovative, and sustainable furniture is produced and traded at a fair price. According to the "do-it-together" approach [3], a business ecosystem must be created that creates added value not only for customers, but also for designers, suppliers, and manufacturing companies. This new form of collaboration also requires rethinking potential revenue models and creating incentives for sharing the platform. The goal is to ensure the strategic fit of platform users and suitable revenue models and to optimize the use of the platform for all. Therefore, different revenue model types must be evaluated regarding their entry barriers, revenue potential, customer loyalty, and transparency. In principle, it is possible to offer different models for different stakeholders to ensure the strategic fit and enable the use of the platform.

To identify the best revenue models three steps are undertaken. First, an extensive literature research is conducted to analyse several types of revenue models. These can be categorized into freemium, subscription-based and revenue-based [4]. Subsequently matching case studies for each of the models are identified and a practical example for each of the different revenue models is examined in more detail. Furthermore, it is analysed how the respective revenue model can be implemented. Lastly, an expert workshop is conducted,

presenting the results of the case analysis, and assessing advantages and disadvantages of the models. As a result, the best possible revenue models for general public, designers and manufacturers are identified.

## 2. Theoretical background

### 2.1 Revenue Models

The desk research has shown that there are three main revenue models for platforms, which can be further divided into different models. The main models are free/freemium, subscription-based, and revenue-based and have distinctive characteristics and sub models (Figure 1).

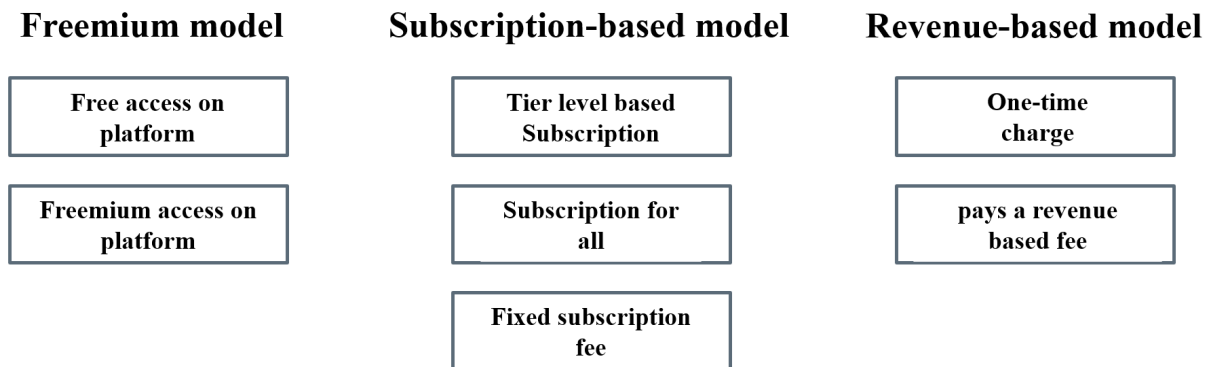


Figure 1: Main revenue models for platforms

The first revenue model is the freemium model. This model is based on free and paid access. Customers can access the basic product for free and must pay a monthly or yearly fee for the extended product. The pricing is based on availability and is usually a flat rate. In this model, the inclusion of social features is very important, as they influence the willingness to pay for premium content and thus have a strong impact on customers [5]. That means, the number of users or amount of blog entries are important attributes [6]. Furthermore, users who are more active in the community are also more willing to subscribe [7]. Therefore, there should definitely be social features or at least the possibility to integrate social media, as this leads to the product being spread and new markets being opened up [5]. However too many free offerings eliminate the incentive for users to upgrade to the paid version [7]. *Free users* should be valued highly as they provide feedback on the usability of the product and features, as well as advertise for free [8]. Research shows that freemium models fail when a low value is placed on *free users*. Other aspects that are crucial to the success of the freemium model are product bundling and cooperation with powerful and proven market players [5]. This is used to further drive awareness and distribution of the products.

Secondly, the subscription-based model is analysed with a focus on the shift towards an ad-sponsored model. In the subscription-based model, customers must commit to a paid subscription to access content on the platform, because the platform is financed by these fees [9]. The advertising-based model works slightly differently. Customers can access the platform free of charge, but other companies and brands place advertisements on the platform and pay the platform operator for this. As a customer, you pay indirectly for the platform by viewing the advertisements and possibly being encouraged to buy the products [10]. By changing between these revenue models, it is possible to influence life cycle revenues. For example, switching from a subscription-based to an ad-based model maximises life cycle revenue under certain market conditions. Shifting in the other direction is less effective. It is a challenge to convince customers who have free access to the platform in the ad-based model to switch to a subscription-based model. The right incentive must be created, as a subscription-based model has high entry barriers due to the obligation to pay. When changing the business model to maximise the life cycle revenue, direction and proactive planning are crucial, because the optimal pricing tactic differs across strategies [11].

Finally, the revenue-based model is examined. In this model, the platform operator works with independent sellers on their platform and receives a percentage of the realised revenues [12]. It is quite common that the platform operator sells high-runner items and collaborates with independent sellers on niche products due to low volumes and high fixed costs. However, this results in sellers trying to disguise high demand by minimising service to reduce early, high sales. Customer reviews can help platform owners to get to know the true level of demand. Furthermore, customer reviews counteract poor service, which is detrimental to the platform’s reputation. The platform operator must set a fee, depending on the type of the manufacturer. Additionally, they try to anticipate whether a manufacturer hides its high demand when setting the level of fees. So, if there is a low probability, that the seller’s sales are high then the platform operator should charge a low fee. Low fees also mean that manufacturers with all demand types can access the platform, thus increasing the platform’s reach [13].

### 3. Research method

The case study analysis [14] identified different revenue models that are in use that serve to integrate the respective stakeholders (Table 1). In this research the focus lies on general public, designers, and manufacturers, because they are an integral part of the value creation. Platform providers are not further considered, because their role within the co-creation platform is yet to be determined.

Table 1: Overview of revenue models in-use

	General public	Designers	Manufacturers
Free/Freemium Model	eBay, Vinted Pinterest, rebuy, momox, quirky Spotify, amazon, Joyn	Behance, Faberin Freelance.de, workingnotworking, Canva, dribble	Hero, bluarbeit, wirsindhandwerk
Subscription-based Model		Peopleperhour AIGA, kimp	shopify, Handwerker-in
Revenue-based model		fiverr, DesignCrowd, Etsy, upwork	Cratejoy, MyHammer, yo!kart

For the general public, platforms with free access and freemium access are analysed. Subscription and revenue-based models are not further considered, because they require a payment, and it is intended to keep the barriers low for the general public. A very well-known platform with free access for its customers is Pinterest. Pinterest is an online pinboard where customers can share photos or graphics. The main characteristics are the free use and creation of accounts on the platforms [15]. Therefore, the entry barriers for this type of platform are low. However, for a customer there is no possibility to distinguish oneself from other customers since every customer gets the same offer. Mostly, the platform is financed through advertisements, as no direct income can be generated through the customers. The freemium model is a mixture of freely accessible content and premium content for which the general public must pay. A well-known case for this is amazon. Amazon can be used either as Basic access or Premium access [16]. With Basic access, the platform can be used free of charge, but postage costs are charged for orders. Premium access eliminates the postage costs and gives access to additional services such as films or music. However, there is an annual subscription fee. Subscription payments are made monthly or annual. Often, certain social groups, such as students, receive a reduced subscription fee. As with the free access model, the barriers to entry are low. The platform can only generate revenue from customers if there are enough incentives for them to subscribe. A positive aspect of this model is that the customer is provided with a possibility of differentiation through the subscription.

For designers, five different platform types are examined, which occur with varying frequency. The revenue-based business model is most common, such as Etsy [17]. Here, the designers pay a fee to the platform and the amount is based on the turnover generated by the respective designer. Access to the platform and the creation of accounts is usually free of charge. Only when the offered products are sold costs arise for the designers. Depending on the platform, it is sometimes possible to get premium access and thus additional services such as workshops. This results in additional monthly costs. The main advantage of the model is that payments are only made when the designers generate income and that no advance payments are necessary. In addition, the designers benefit from already established platforms and thus reach a wide range of customers. A well-known platform for designers with a freemium model is Dribbble. The platform Dribbble is both a self-promotion platform and a social network for designers, where designers can offer jobs and be recruited by clients [18]. As a basic customer, it is possible to post or accept a job offer at no additional cost. However, the possibilities for personalising the account are limited. By taking out a Pro subscription, designers can personalise their profiles and sell their own products. The payment of the subscription is either monthly or annually. Because the basic use of the platforms is free, the entry barriers for designers are low and a high network potential is created. The possibility of a premium account and the accompanying personalisation of the user profile makes it possible for designers to distinguish themselves from each other. Another business model on platforms for designers is the free access model as shown by Faberin [19]. On this platform designers collaborate with manufacturers. The concept of the Faberin platform is that designers design furniture that is produced by manufacturers. The designers receive a fee per piece of furniture sold. The platform takes care of the sale and production allowing designers to focus completely on their creative work. On the platforms with this business model, there are no additional costs for the designers. This means that designers can contact manufacturers or private customers for free, depending on the context of the platform. However, there is no possibility to customise the user profile according to one's own wishes. With this business model, production and sales are often taken over by the platform, which allows the designers to focus on the creative work. Another advantage are the low entry barriers because the use and creation of a profile are free. For the platform operators, however, this means that they do not receive any direct income from the designers. The Kimp platform is showing the contrasting revenue model of a subscription-based model [20]. Kimp is a subscription-based unlimited design service where manufacturers, start-ups and the like can work with a design team. It is mandatory for the designers to sign up for a subscription. The designers can choose between different subscription models, such as video or graphics, depending on the focus of their creative work. Subscriptions are paid either monthly or annually. In this model, the barriers to entry are higher than in the other business models, but the payments also create a lock-in effect for the designers. Thus, the exit barriers are comparatively high. The last model found in practice for designers is the tier level-based business model. On the platform peopleperhour, access and creation of a user profile on the platform is free for all designers [21]. This leads to low barriers to enter. Payments arise for designer depending on the number of orders or turnover. Here, the amount of the charges varies and depend on the platform. For example, less than 10 orders per month mean the platform is still free of charge. The next tier could be 10-20 orders and a corresponding fee is set. This goes then on.

On the platforms for manufacturers, similar business models are identified as those for the general public or designers. At the focus are three forms. These are the business models of freemium access, the mandatory subscription, and the revenue-based fees. With the freemium business model, producers can choose between free access and premium access. The platform [wirsindhandwerk.de](http://wirsindhandwerk.de) is a recommendation platform for the manufacturer sector. It is chosen as an example for freemium access for manufacturers on platforms because it connects craftsmen with customers. As with other freemium platforms, basic access and account creation is for free. Access to exclusive features, such as quality labels or certificates, is possible by taking out a subscription. Due to the free use, it creates low entry barriers, which attracts many customers. Premium access, however, is based on payments, which are made either monthly or annually. This business model stands out due to its transparency, as payments are clearly marked by a subscription and no hidden payments

are made, for example, by accepting orders. In the fixed subscription business model, access to the platform and its features is only possible through a subscription for which monthly or annual payments are charged. A very well-known platform on which manufacturers pay a fixed subscription fee is Shopify. The platform provides an e-commerce software, which enables manufacturers to create an online shop to outsource their logistics [22]. Manufacturers can choose between different subscriptions, depending on the orientation of the company. Due to the reach of the platform, manufacturers do not have to engage in customer acquisition and can thus concentrate on the execution of orders. In addition, the platform provides support in creating the user profile or shop and in processing payments. Since every user of the platform also must pay subscription fees, the revenue potential from this business model is high for the platform operators. Lastly, the revenue-based business model on platforms for manufacturers is examined. myhammer is a good example of a revenue-based online marketplace for manufacturers [23]. The manufacturers can initially create a profile on the platform for free, which is checked by the platform operators. A fee is not charged until manufacturers accept an offer. The amount of the fee then depends on the order size and the trade. This is characterised by the fact that the payments to the platform are adjusted to the turnover or the number of orders of the manufacturers. The amount of the payments varies depending on the platform. Although the manufacturers must give up a share of their turnover, there are still important benefits from using the platform. For example, the platform makes it easier for customers to contact manufacturers. In addition, the manufacturers benefit from the reach of the platform and its already existing customer base.

#### **4. Revenue models for a co-creation platform**

The results of the case study are presented to experts from the industry in the form of a workshop. The aim of the expert workshops is to find the most fitting revenue model for each stakeholder group. Therefore, the experts could formulate arguments for and against each of the revenue models. With this methodology, experts and stakeholders are invited to participate to create a suitable, stimulating, and constructive discourse between the stakeholders. In the transdisciplinary workshops, experts and stakeholders are invited to engage in a rule-based and systematic discourse based on their knowledge. Through direct exchange, new knowledge is produced. [24] The workshop consisted of twenty-seven experts and stakeholders that involved three manufacturers, five designers, two potential platform providers and seventeen representatives of the general public. The participants come from eight different European countries. In the end a voting is held on which model is most suitable for the general public, designers, and manufacturers. For the voting each of the twenty-seven participants had one vote for a revenue model for the general public, designers, and manufacturers. It was not possible to vote for multiple revenue models for one stakeholder group.

##### **4.1 General public**

A free access model, like Pinterest, offers a high potential for adaptation for the co-creation platform. For example, potential customers could post their ideas for furniture on the platform and share them with designers or manufacturers. In addition, customers could also see ideas from other customers and thus be inspired. Furthermore, this type of platform also offers a high network potential. The low entry barriers and easy access to the platform speak in favour of this model. This makes it possible for potential customers to try out the platform first without being directly bound to it or having to pay money. Furthermore, this model promotes the formation of a community and thus facilitates creative exchange. As the platform is free of charge, problems may arise. For example, the operators do not generate any direct revenue for the customers in the form of a subscription and it remains open how the platform is financed. In addition, the customers have no incentive to finish their projects. The community aspect could also be a hindrance to the actual production because potential customers may be more interested in the exchange of ideas. Out of twenty-seven participants, thirteen are in favour of the business model with free access on the platform.

The other model for the general public is the freemium model. Regarding the co-creation platform, it would also be possible to offer a premium membership, in which customers would receive further support in designing furniture. Since access to the platform remains free of charge, the barriers to entry are also low in this model. Through the premium membership, however, the platform operators can generate direct revenue from the customers, which is the biggest advantage compared to the business model with free access. Furthermore, the premium membership offers an opportunity to sell additional services and thus make the platform more attractive. Also, subscribing to a premium membership signals the serious intentions of the customers, which can be helpful to create attraction for designers and manufacturers. However, implementing a subscription model in the furniture sector could be difficult because many people purchase furniture only once or only once every few years. It also remains open how customers can be incentivized to subscribe to the premium membership, since furniture can also be purchased from other designers or on other platforms. Another difficulty is the amount of the subscription fee. This must be set in such a way that the platform is financially secure, but customers do not get the impression of overpaying. In total, fourteen out of twenty-seven participants voted for this model.

## 4.2 Designers

For designers, five different models are identified in the case study analysis. The free model offers a good applicability in the ramp-up phase, as the entry barriers are low and thus the formation of a community is enabled. The payment of a commission benefits the platform. However, due to the free access to the platform, designers who do not have serious intentions are attracted in addition to professional designers. This could have a negative impact on the platform's reputation. One solution to this problem would be to include verification on the platform. This, in turn, would involve additional work for the platform operators. The low entry barriers could lead to an oversupply of designers, which in turn could have a negative impact on the quality of the products. Only one participant out of twenty-seven voted for this model.

A revenue model for the co-creation platform could also be freemium. For example, designers can establish contact with manufacturers or the general public for free, but personalisation of the account is only possible with a paid membership. A positive aspect of this model is the revenue is generated through the subscription fees and the low entry barriers due to the voluntary aspect of the paid membership. Since the designers' profile can be personalised through the subscription and thus the visibility is increased, this is a solution where everyone benefits for designers and the platform. Although the designers pay a small fee, they also potentially receive more orders, and the platform can finance itself through the subscription fees. It is important that the incentive to take out a subscription is great enough because the platform is only generating income through the paid members. However, designers need to have a certain customer base before they subscribe, as they need to cover their costs. Again, only one of twenty-seven participants voted for this model.

The subscription-based model can also be applied to the co-creation platform. Designers or the general public could collaborate with a design team of furniture specialists and elaborate their ideas. For the subscription models, it would be possible to distinguish between different furniture styles, such as Scandi, Industrial or Modern. A positive aspect of this model is that the platform earns direct revenue from subscription fees. For the designers, the subscription also has positive effects, as they can customise their profile and specialise additionally. This model is good if a certain customer base has already been built up, but it is difficult to implement in the initial phase due to the high entry barriers. The monthly costs put pressure on designers to design as many pieces of furniture as possible. This could have a negative impact on quality. Since the negative aspects of this model outweigh the positive ones, only one participant voted for this model.

The tier-level-based subscription is beneficial for the designers because it minimizes their risks. Since the cost do not increase proportionally to the orders, but in steps. This enables designers to participate on the platform and to populate it in the process. The lowest tier can be for free, thus creating an extremely low

entry barrier. However, the different tiers are unclear now and if they should refer to number of orders or revenue generated. If it refers to orders, then designers may be incentivized to charge unreasonable prices and increase their revenue on each order, but the platform is not generating more income. Also, high competition due to low entry barriers could lead to a lack in quality. Eight out of twenty-seven experts voted for this revenue model.

Last, the revenue-based fee offers a fair and transparent payment structure for designers. Therefore, high accessibility is guaranteed, and the designers are treated as an equal partner on the platform. Moreover, there is no preferential treatment of any designer and non-serious designers may not be willing to engage on the platform. Also, the designer only has costs if s/he partakes in a project. However, the designer's turnover must be higher than the fee to make the participation worthwhile. Also, some designers may regard the fee as too high. Considering the benefits of this model, eight out of twenty-seven participants voted for this model.

### **4.3 Manufacturers**

For manufacturers, three different models applicable to co-creation platform are identified. The first model is a freemium approach for the manufacturers. Manufacturers can receive orders and ratings from the general public and benefit from the platform's reach. The general public would be able to see the performance of the individual manufacturers through the ratings of other users and would thus have an assurance of performance. A potentially negative aspect of this model is the free access to the platform. This could mean that manufacturers who are not trustworthy are also attracted. An examination of the individual manufacturers by the platform operators could reduce this aspect. Also, the free access of the manufacturers is positive, as many manufacturers are attracted, hence the general public has a large variety to choose from. The model favours the formation of a community through the possible exchange among each other and the evaluation possibilities. Although there are arguments in favour of this model, it is considered inappropriate for the stakeholder group of manufacturers. In the vote, none of the experts supported the freemium model for manufacturers.

Another potential model is the fixed subscription fee. Manufacturers can choose between different subscriptions and view their business reports and statistics, which are provided by the platform. Due to the obligatory subscription, manufacturers must pay fees even if they have no revenues. This could lead to manufacturers leaving the platform if they receive few orders. The barriers to entry are quite high in this model and thus the experts consider it to be unfavourable for the introduction phase. Only one of the experts voted for this model.

The last model for manufacturers is the revenue-based model. This is a very fair model, because the payments depend on the turnover a manufacturer is generating. Regarding the co-creation platform, it would therefore be possible for the general public to publish production orders on the platform and be connected directly to the right manufacturer. The manufacturers then pay a fee to the platform. Since the platform assigns the order directly to the right manufacturer, the acquisition does not represent a significant effort for the manufacturer. This model is very flexible for the stakeholders and fits very well with the platform's vision of producing personal one-off furniture. Due to the positive aspects of this model, eighteen out of twenty-seven experts voted for this model. For the manufacturers, a revenue-based model should therefore be implemented. Figure 2 shows the results of the voting for each stakeholder group.

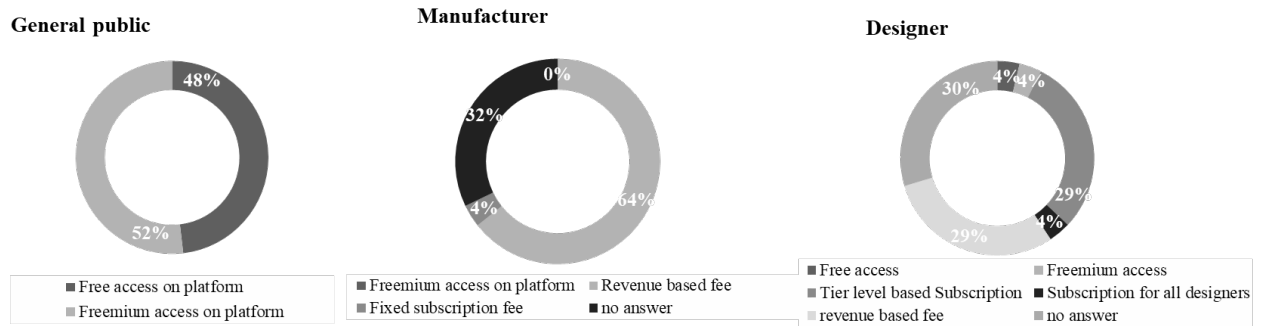


Figure 2: Outcome of the voting for the revenue models

## 5. Conclusion and outlook

The aim of this paper is to develop suitable revenue models, so that the stakeholder on a co-creation platform in the furniture sector have the highest possible incentives to use it. For this purpose, different revenue models are presented and further analysed by well-known practical examples. During an expert workshop, various arguments for and against the models are made.

For the general public, the free and the freemium model is considered. In the case of the former, a high network potential is quickly formed, as customers are given a simple, unproblematic entry point. In the freemium model, access also remains free, but the functions and possibilities can only be expanded by a premium membership. Since the decision between the free access and freemium access model is close in the expert workshop, it is advised to first go to market with a free offer and then offer a freemium model after the launch to further develop premium content. These two models build on each other, therefore it is possible to first build a community through the free model and then use the experience to add premium content.

The most difficult model to develop is for the designers. Three models are not further considered due to the difficult set-up phase, a previously required customer base or pressure on the designers, which means that the quality of the products suffers. The experts voted equally for either a tier-level-based subscription or a revenue based free model. Subscription minimizes the risk for designers, which makes the platform more popular. Here, the risk lies in the lack of revenue for the platform. The revenue-based free model, on the other hand, is characterized by fair payment and transparency, but puts pressure on the designers and might discourage them. Therefore, a further analysis or a focus group study with designers must be done.

In contrast, the desire for a revenue-based model is clear for the manufacturers. In this model, the manufacturer starts with a free profile and only pays a fee once an order is received. This fee depends on the size of the project and the trade. Hence, this model should be implemented.

The co-creation platform must consist of at least two different revenue models: a free/freemium and a revenue-based one to cater to the needs of the different stakeholder groups. By conducting literature analysis, case study research and an expert workshop a comprehensive and differentiated view on revenue models is achieved. Further research is necessary for the designers and the financial structure of the platform needs to be analysed to assess the profitability of the platform.

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## Biography



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