

META-CONCEPT OF ENABLING PLATFORM FOR REMOTE WORK IN THE FASHION SECTOR IN THE CONTEXT OF THE COVID-19 PANDEMIC

META-CONCEITO DE PLATAFORMA HABILITANTE PARA TRABALHO REMOTO NO SETOR DA MODA NO CONTEXTO DA PANDEMIA COVID-19

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ABSTRACT

This article explores enabling platforms for remote work in the fashion industry to promote sustainability, considering the context of the COVID-19 pandemic and the increased number of people adapting to remote work. The research team developed a meta-scenario for an enabling platform based on the Design Science Research method. The meta-scenario developed aimed to encourage remote work of artisans from Rio do Sul (SC) in association with the company Proposta Verde which specializes in fashion accessories production. The enabling platform goal was to use the company's production waste and value local knowledge. Through the development of the meta-scenario, it was possible to conclude that enabling platforms aimed at remote work aligned with sustainability principles can be a tool to allow a more advantageous form of remote work for the fashion sector.

KEYWORDS: Enabling platforms; distributed economy; fashion; remote work; sustainability.

RESUMO

Levando em conta o contexto da pandemia da COVID-19 e o aumento de pessoas adeptas ao trabalho remoto, o presente artigo explora o uso de plataformas habilitantes para o trabalho remoto no setor da moda, a fim de promover a sustentabilidade no setor. Orientado pelo método Design Science Research, neste trabalho foi desenvolvido um meta-cenário para uma plataforma habilitante para promover o trabalho remoto de artesãos de Rio do Sul (SC) em associação com uma empresa especializada na produção de acessórios da moda, fazendo o uso de resíduos de produção da empresa e valorizando os saberes locais. Através do desenvolvimento do meta-cenário foi possível concluir que plataformas habilitantes voltadas para o trabalho remoto alinhadas com princípios de sustentabilidade podem ser uma ferramenta para possibilitar uma forma de trabalho remoto mais vantajosa para o setor da moda.

PALAVRAS CHAVE: Plataformas habilitantes; economia distribuída; moda; trabalho remoto; sustentabilidade.



1. INTRODUCTION

The drastic increase in the adoption of remote work during the COVID-19 pandemic has offered new opportunities for enhancing sustainability in production and design in the fashion industry. Millions of workers had their activities impacted, adjusting to a new way of performing their work functions remotely from home (BRIDI *et al.*, 2020).

In her research, Galvão (2020) states that the fashion industry was one of the most affected by the effects of the pandemic. She shows that companies need to rearrange their relationships with their stakeholders, especially with their workforce. Galvão (2020) suggests taking measures such as testing employees, promoting information on COVID-19, adopting work from home procedures and aids for its adoption, suspending events and travels, using digital systems for remote work, and daily communications in digital workplaces.

Thus, in the context of the pandemic, there was an accelerated digital transformation process of this sector, and the fashion industry began to explore migration options for the virtual space throughout its value chain (AMORIM; BOLDT, 2020). From the perspective of this article, the impact of such practices on the implementation of production paradigms oriented towards the distributed economy is highlighted, with direct repercussions on the improvement of the sector's environmental, social and economic performance.

The distributed economy is a development network composed of several regional stakeholders, which, through small-scale and decentralized production and the use of local resources, strengthens the innovation of a region and enhances the network scaling of the industry, supporting the infrastructure and resources of the regional area (JOHANSSON *et al.*, 2005).

The Brazilian legislation system included remote work through Law No.13,467 of July 13, 2017 (Labor Reform). The law considers a remote worker a person who “provides service outside the dependence of their employer, and under telework conditions, they rely on information and communication technologies to carry out the same function, usually having a fixed location to perform their work.”. The same Law deals with the modality of work from home, characterized by the non-use of information technologies, and performed in the employee's home workspace (MIZIARA, 2017).

Taschetto and Froehlich (2019) present in their research some advantages and disadvantages of remote work for workers, being the advantages:

increased productivity, autonomy, schedule flexibility, less time to perform a task, reduced stress; and the disadvantages: distractions and temptations from the domestic environment, isolation, procrastination, lack of support, prejudice by family members, domestic noise, organization of the workspace inside the household.

The enabling platforms, defined by Manzini (2005, p.37) as “[...] systems of products, services, and organizational tools that allow individuals or communities to achieve a result using the best of their abilities and skills.”, are shown as a possibility to promote the network organization of workers in the fashion sector. These platforms contribute to the distributed economy and enhance the advantages and mitigate the disadvantages of remote work.

As the literature review illustrates, there is a need to extend the offer of enabling platforms to give opportunities for the expansion of sustainability in the means of production and design in the fashion industry, based on the assumption of the inevitable growth in the adoption of remote work in various industrial and service sectors.

This article intends to expose the development process of a meta-scenario for developing an enabling collaborative platform for workers in the fashion area that facilitates remote work, based on the partnership with a private company (Proposta Verde) that produces wood accessories. At the time of this study, the company sought to reinsert its productive waste in the market through a collaboration with artisans living in a housing complex in the municipality where the company is based.

1.1 THEORETICAL FOUNDATION

1.1.1 *Design for Sustainability and distributed Economia*

The concept of Sustainability in Design emerged in the 1960s, in a historical moment in which society started to question the logic of productivity as a means of achieving social well-being. The doubt about the market being able to promote adequate instruments to solve humanity's problems opens the way for reflections on the need for designers to turn to social reality and the negative impacts of mass production and consumption on the environment (CESCHIN & GAZIULUSOY, 2020).

Since then, theoreticians have developed several strategies for sustainability and applied them in the scope of design, starting in the 1990s with the green design, which seeks to redesign products to reduce their impacts and increase their efficiency. Recent studies started to apply these methods in the transition to sustainability, aiming to rearrange social and technical systems and relations through innovation in various sectors (CESCHIN & GAZIULUSOY, 2020).

The design for sustainability considers the three dimensions of sustainability: environmental, economic, and social, proposing several strategies to achieve sustainable development through design.

This work highlights the distributed economy that brings in its concept the production occurring in a decentralized way, on a small scale, and seeks to value local infrastructure and resources (SANTOS, 2018). It is important to contextualize that the search for a more distributed economy considers the characteristics of specific regions and the local community, its historical and economic aspects, the presence of natural resources, and the production chain already established.

1.2. Enabling platforms for remote work as a strategy for the distributed economy

Enabling Platforms is a term that derives from the concept of enabling solutions, which Manzini (2005, p.37) defines as “[...] systems of products, services, and organizational tools that enable individuals or communities to achieve an outcome using the best of their abilities and skills.”.

Only the material contribution as the physical aspect of these solutions (internet, tools, space, and other technologies) is not enough. It is important to note how such items are explored and generate value in promoting communities (OLIVEIRA, 2015).

Enabling platforms are advantageous as they valorize local skills and resources and contribute to better cohesion and social equity since they meet the sharing economy. Thus, within the process for a more distributed economy, Santos (2018, p.121) highlights that these initiatives “stimulate the spread of Maker Culture and Self-production.”

It is important to emphasize that adopting these mechanisms can bring some negative aspects, such as disregarding regulations or taxes and sharing-oriented services that can increase production demands, going against the precepts for sustainability (SANTOS, 2018).

By using the infrastructure available in enabling platforms in a community, it is possible to notice an increase in the bargaining power of local

actors. Thus, increasing the autonomy to understand their demands and valuing the knowledge and the diversity of local culture.

After explaining the concepts and central ideas of the enabling platforms, it is possible to point out ways for their application in creative communities considering the context of remote work.

The use of information technologies for home-office becomes inherent to the challenges exposed by the COVID-19 pandemic. Its adoption also indicates the need to reorganize work routines, explore skills, and adapt to new knowledge enclosed as a requirement for remote work (MENDES & HASTENREITER, 2020).

The fashion industry also sought adaptation and organization in the face of new pandemic challenges. Health authorities' recommendations for social isolation added to law nº 14.020 of July 6, 2020 (BRAZIL, 2020) exposed the need to adopt remote work practices. In this way, companies in the fashion sector need to resort to home-office methods to circumvent the imposition of the closure of commerce and industry during the pandemic period (DOS SANTOS GALVÃO, 2021).

Given this, the use of enabling platforms can point to solutions focused on developing or improving the practice of remote work since these tools mobilize users to connect in networks that share knowledge.

2. METHOD

The present study is the result of the theoretical-practical stage of the activities of the discipline “Sustainable Design,” carried out in the first quarter of 2021 in the Postgraduate Program in Design at UFPR, intending to apply the concepts studied in class in a project in partnership with the company Proposta Verde.

The method used was Design Science Research (DSR), characterized as a research method in which designers develop artifacts and evaluate their effectiveness for solving a class of problems. Artifacts are described here as everything that a person designs, including methods, tools, models, and services that contribute to problem-solving. Therefore, the Design Science Research method generates tacit knowledge by developing artifacts (SANTOS, 2018; LACERDA *et al.*, 2013).

According to Santos (2018), the research process is divided into five stages: understanding the problem, alternative generation, development, evaluation, and conclusion. Table 1 describes the stages of the adapted and applied DSR for the development of this work, the activities performed, and the tools used.

Table 1: DSR and Tools Used Source

Steps	Activities and Tools
Understanding the Problem	Literature review, interview, and questionnaire with stakeholders, persona, seeking to identify the key requirements for the system.
Alternative Generation and Development	Alternative generation and development using <i>Tomorrow headlines</i> , <i>storyboard</i> , <i>blueprint</i> , and <i>canvas</i> .
Evaluation	Assessment of requirements fulfillment via the artifact through a semi-structured interview with the stakeholder.
Conclusion / Reflection	Evaluation of the artifact's progress in relation to the theory reviewed and the problem identified, including reflections on implementation steps.

Source: Authors (2021)

Due to the pandemic, the study was thoroughly conducted remotely, impacting the strategy for its conduction. Other approaches for a more empathic integration of the project's users and clients and evaluation of the proposed artifact were not possible.

3. RESULTS AND ANALYSIS

3.1 Phase 1: Understanding the Problem

The first phase began with refining the project scope with the partner company, Proposta Verde. Subsequently, the research team applied semi-structured interviews and questionnaires to the company's directors seeking a holistic understanding of the problem. In this stage, we sought to identify, for example, the main stakeholders, their current relations, the perception of social, environmental, and economic problems, as well as barriers and opportunities perceived by the company as relevant to the design of a new system.

The presented problem was “how to enable the company to make use of its productive waste in partnership with artisans living in social housing developments of Rio do Sul during the COVID-19 pandemic, in which the work needs to be remote, taking into account the social, environmental and economic dimensions of sustainability”.

Afterwards, the researchers identified the company and artisans of Rio do Sul as the primary agents. The obstacles considered for the agents are the pandemic, the limited space in the residences, the impossibility of mass production and scaling the same product due to the different knowledge of each artisan, the lack of financial resources of the company to invest in the project, and the artisans' lack of network organization. Lastly, the opportunities appointed are the increase in the life cycle of raw materials, the possibility of valuing local knowledge and promoting a networked production corroborating with the distributed economy.

Given this understanding, the team developed a persona (figure 1) to represent the artisan's profile, one of the main stakeholders of the problem. Synthesized data from the artisan's register of the Secretariat of Social Assistance of the municipality of Chapecó/SC (LEITE & SEHNEM, 2017) was used as a basis for the development of the persona.



Teresa
Artisan

Company: Has been integrally working with handicrafts for more than ten years.
Age: 46
Gender: Female
Education: High School.
Social Media: Facebook and WhatsApp.
Goal: To live a comfortable life with handicrafts as her only source of income..
Challenges: To sell her handicrafts during the pandemic and have her work valued.
How my company can help her: By providing raw materials, valuing her knowledge, and promoting a platform for sales.

Figure 1 - Persona. Source: Authors (2021)

The design requirements (figure 2) established for the generation of alternatives and development phase was based on the information raised and the understanding of the principles to achieve the environmental, economic, and social dimensions of sustainability described in the literature by Sampaio *et al.* (2019), Santos *et al.* (2018), and Chaves *et al.* (2019).

Some requirements were associated with the dimensions of the sustainability to which they aim, and all of them were guided in subsequent stages.

Requirements	
	To be remote
	Low investment
Environmental	Increase the life cycle of the productive residues
Economical	Distributed production
	Increase the bargaining power of artisans
Social	Artisans working from home
	Value individual knowledge
	Network organization of artisans

Figure 2 - Design requirements. Source: Authors (2021)

3.2 Phase 2: Generation of Alternatives

Based on the design requirements, the research team brainstormed to generate a series of 3 newsletters using the technique “tomorrow’s headlines” (figures 3, 4, and 5). In project development, this tool is applied in the ideation stage to simulate magazines covers and newspaper or websites headlines that bring a future scene with the social impact to be achieved (GKATZIDOU; GIACOMIN and SKRYPCHUK, 2021).



Figure 03 - Tomorrow’s Headline 1. Source: Authors (2021)

The researchers created fictitious headlines to simulate meta-scenarios for the developed enabling platform using it as possible fictional

scenarios that underpinned the project’s development. The headlines portrayed the unfoldings of the partnership possibilities between the company and artisans.

The first alternative (figure 3) shows that, through the partnership, the local knowledge was valued and enhanced and displays the possibility of extra income for the involved artisan, highlighting the social aspect of the proposed requirements. The second headline (figure 4) focuses on the feasibility of remote work in the company’s line of products to exploit residues, which displays the environmental aspect. The last option (figure 5) is centered on the production potential of Proposta Verde when a partnership with the artisans is firm, corresponding to the requirements of the economic dimension.

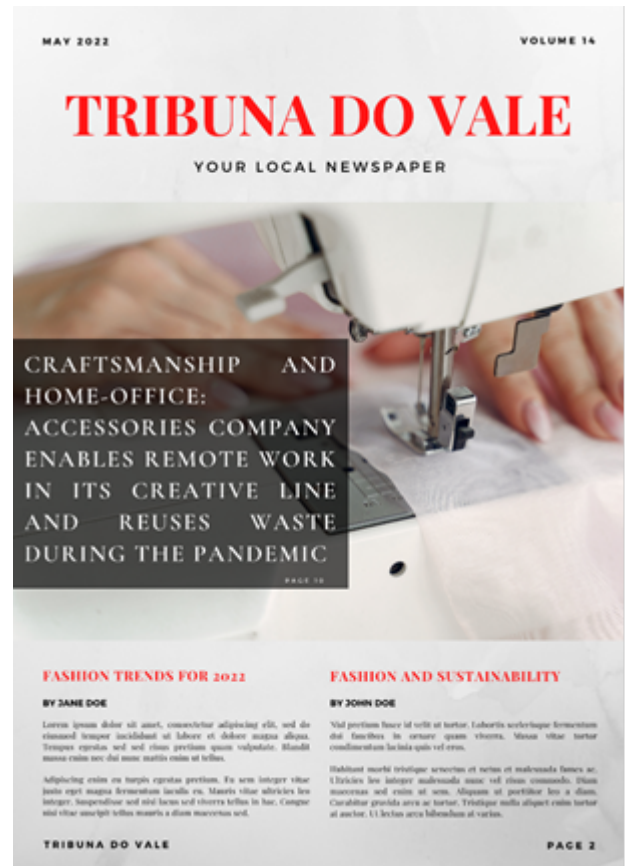


Figure 04 - Tomorrow’s Headline 2. Source: Autores (2021)



Figure 05 - Tomorrow's Headline 3. Source: Authors (2021)

The team evaluated the proposed meta-scenarios from the perspective of the design requirements opting for the Tomorrow Headline 1 (figure 1). The chosen meta-scenario involves the reuse of production waste from Proposta Verde, enabling the integration of the artisan community of Rio do Sul with the company, the sharing of local knowledge, the network organization of artisans while providing a way for artisans to earn income during the pandemic. Aside from highlighting the requirements aligned with the social dimension of sustainability, the headline meets the additional guidelines presented in the problem formulation and the other design requirements.

3.3 Phase 3: Development

The team developed the meta-concept, Plataforma Musas, based on enabling platform's concept from the chosen meta-scenario. Plataforma Musas valorizes the local knowledge by reusing production waste from Proposta Verde as its central satisfaction unit.

The name is based on the company project, Musas, which is described on their website as a way "to contribute to the valuation and collective strengthening of the people who work in the field of culture, such as fashion, providing them with opportunities for exchanging knowledge that value self-production." (MUSAS, 2021). The platform allows artisans to register online and connect to a network to share local knowledge and show what they produce. Also, it connects them to Proposta Verde as partners to use materials from the company's production waste in their work, ergo, contributing to social cohesion and a distributed economy.

Another goal of the platform is to attract people who seek life and consumption styles that align with sustainability principles through a monthly subscription, which Proposal Green manages. The company collects the products made by local artisans and sends them to the subscribers with the history of who made that product. In this way, it promotes a new source of income for artisans registered on the platform, increasing their bargaining power.

The subscription also makes possible the exchange of wooden products that would be discarded for discounts or points in the platform, contributing to the waste management and increasing the life cycle of these products.

In addition, the research team elaborated a blueprint of the Plataforma Musas (figure 7) to understand the services linked to the use of the platform. Therefore, it was understood that the proposed enabling platform fits into a service-product system.

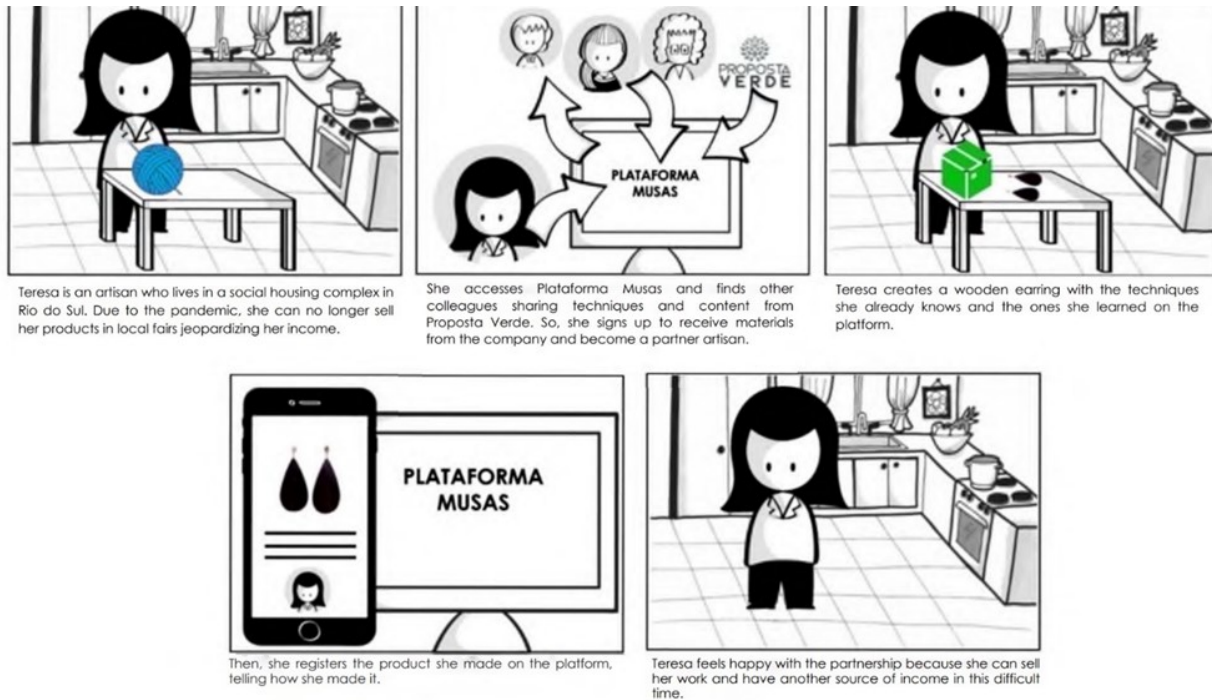


Figure 6 - Storyboard. Source: Authors (2021)

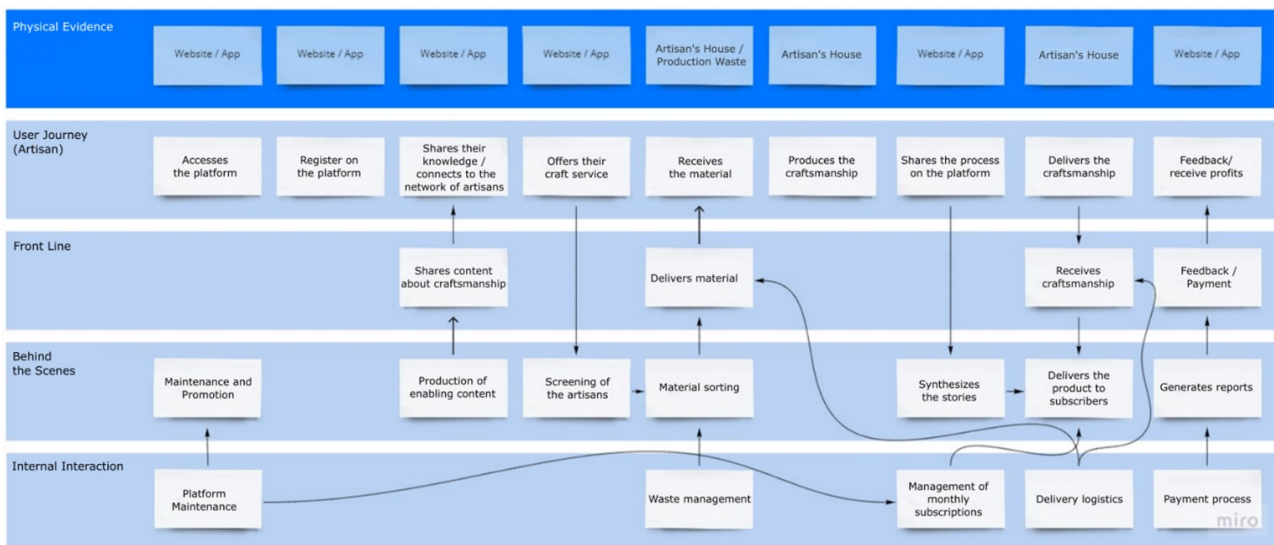


Figure 7 - Blueprint. Source: Authors (2021)

3.4 Evaluation

While developing the platform's meta-concept, the researchers carried out rounds of assessments in the format of group discussions done remotely with other students and guests of the discipline for which this work was proposed, considering aspects of the dimensions of sustainability. The focus of these evaluations was to converge the sustainability principles shown in class with the

development of meta-scenario alternatives to direct the development of the enabling platform to a scope aligned to the environmental, economic, and social dimensions of sustainability.

The research team and the company Proposta Verde held discussions for adjustments in the platform and its implementation process. These discussions pointed out some issues on the viability of the platform's implementation due to



required financial resources. The team also discussed the degree of maturity of the artisans concerning their productive techniques, as artisans with little domain of techniques would be unable to be part of the sales cycle of the platform.

On these accounts, the team reflected on ways to enable the platform's implementation by creating a transition phase in which the platform would start as a section of Proposta Verde e-commerce, and the selected artisans would be able to share their knowledge and sell their creations made with the company's productive waste.

3.5 Reflection

Some of the strategies found in the literature were used in the development of the meta-scenario for the creation of an enabling platform for remote work in the fashion industry, aiming at new opportunities for expansions of sustainability, such as:

- Product-service Systems (PSS);
- Eco-design;
- Distributed Economy;
- Increased life cycle of raw materials;
- Social Business.

In this context, it was possible to observe that the enabling platform, besides the contributions to sustainability, can also provide better conditions for remote work for artisans in the fashion industry since it promotes autonomy, flexibility, support, and the possibility of extra income. However, some challenges of remote work still do not have their solution in the enabling platforms, for example, the organization of workspace and domestic noise.

It is also worth mentioning that because this is a meta-concept, the platform will have to go through rounds of assessments and co-creative development to adapt to the scenario and agents involved, especially in reinserting the company's productive waste in the market through the partnership with the target artisans.

4 CONCLUSION

This paper demonstrates the potential of developing enabling platforms for remote work in the fashion industry by designing PSS meta-scenarios in the context of the COVID-19 pandemic.

Despite the significant challenges arising from the pandemic, the scenario brings a set of opportunities, them being: the exploration of the distributed economy in the context of remote work, the promotion of networked connections of creative communities, the social innovation, the initiatives of sustainability, the income generation, and the increased bargaining power of vulnerable groups.

In conclusion, we believe that subsequent studies are necessary for evaluating the platform regarding the co-creative process of mock-up development, prototypes of low, medium and high fidelity, and usability tests with artisans and other stakeholders. In such a way, it will be possible to evaluate the actual effectiveness of the enabling platform as a proponent of opportunities for sustainability and improvement of remote work in the fashion industry.

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