BİLİŞİM VADİSİ

Creative and Cultural Industries Technology and Scaling Meetings

Industrial Design and Circular Innovation From Sustainable Production to Strategic Growth

SESSION REPORT

March 2026

Istanbul

YEKON
Yaratıcı Endüstriler Konseyi Derneği

Organisation

Management and Vision
Sezen Güngör, Bilişim Vadisi
Sertaç Ersayın, Creative Industries Council Association (YEKON)

Conceptual Design and Series Coordination
Dr. Sare Rabia Öztürk, Bilişim Vadisi

Event Operations
Nur Seda Dağdeviren, Bilişim Vadisi

Session Report

Moderator
Prof. Çiğdem Kaya, Istanbul Technical University,
Department of Industrial Design

Rapporteur
Zeynep Serra Akman, Istanbul Technical University,
Department of Industrial Design

Editor
Dr. Sare Rabia Öztürk, Bilişim Vadisi

Graphic Designer
Yusuf Özgür Yılmaz, Bilişim Vadisi

Photography
Cevdet Çon, Bilişim Vadisi

EXECUTIVE SUMMARY

This roundtable meeting, which constitutes the third session of the Creative and Cultural Industries: Technology and Scaling Meetings, addressed the position of industrial design within Türkiye's production, technology development, and scaling dynamics from a multi-layered perspective. Contributions fromparticipants representing academia, independent design practices, entrepreneurship, corporate product development, and deep technology fields indicate that design can be considered not only as an applied field but also as a strategic value creation mechanism.

The discussions revealed that Türkiye's design ecosystem possesses significant capacity, and that strengthening its integration with production systems—particularly at earlier stages—constitutes an important area for development. It was emphasized that design is often introduced into processes after the technical framework has been defined, and that this affects problem definition and the identification of user needs. The effective use of prototyping at early stages and early engagement with users were identified as critical factors that can support more predictable product development processes.

Material innovation and circular production approaches are gaining increasing importance in parallel with the sustainability agenda. It was noted that material choices are often determined not by design decisions but by cost, supply, and production infrastructure, which may limit the scale at which circular approaches can be implemented. At the same time, in sectors where product performance, user experience, and brand differentiation are decisive, such approaches were observed to have the potential to create competitive advantage by strengthening the overall value proposition of products despite cost pressures.

The relationship between design thinking and entrepreneurship emerged as a key theme of the meeting. Strengthening the interaction between design education and entrepreneurial practices, clarifying problem definitions at early stages, and more systematically linking product development processes with commercialization and investment stages were identified as important areas for development. In this context, it was emphasized that mechanisms supporting the transformation of product outputs beyond the prototype stage into sustainable business models, brands, or scalable ventures could be further developed.

In terms of scaling and internationalization, it was noted that design-driven products developed in Türkiye have the potential to compete in global markets, and that this potential can be strengthened through brand development, intellectual property generation, and integration into global value chains. Additionally, it was highlighted that the transfer of methods and technologies across sectors remains limited, and that certain design and production methodologies are adopted at different speeds across industries.

The meeting also drew attention to the intersections between industrial design and the creative and cultural industries. It was observed that design plays a bridging role between physical production processes, user experience, and digital production domains, enabling knowledge and methodological transfer across different forms of production.

Overall, the session demonstrates that industrial design in Türkiye is grounded in a strong base of production and knowledge, and that aligning this capacity more systematically, strategically, and at earlier stages with production, entrepreneurship, and scaling processes presents significant opportunities.

PARTICIPANT PROFILES

This roundtable meeting was designed to bring together the experiences and perspectives of actors operating at the intersection of industrial design, advanced manufacturing, circular innovation, and the creative and cultural industries. Participants were selected from independent design practices, entrepreneurship and next-generation production approaches, corporate design and product development processes, deep technology fields, as well as ecosystem and interface institutions. Below, the participating organizations and the domains they represent are presented with consideration of their positions within the ecosystem.

Independent Design and Creative Practices

Orhan Irmak Design
Participants: Dr. Orhan Irmak

ZADO Custom & Design Studio
Participants: Zafer Uluçay

Design and Production Consultancy (Independent)
Participants: Izak Eşkinazi

Entrepreneurship and Next-Generation Production Approaches

Osteoid
Participants: Deniz Karaşahin

ClaimCarbon
Participants: Pınar Öncel

Deep Technology and Industrial Applications

Saha Robotik
Participants: Ayşe Beren Ergülen

Corporate Design and Product Development

Beko
Participants: Özgür Mutlu Öz

Vestel
Participants:
Dr. Can Uçkan Yüksel

Ecosystem, Interface, and Institutional Structures

Istanbul Chamber of Industry
Participants: Ömrüm Özgül

Bilişim Vadisi
Participants: Kemal Sözbir

Structural and Sectoral Representation

TOBB Creative Industries Council
Participants: Sertaç Ersayın

1.INTRODUCTION

INTRODUCTION

Not limiting its role within Türkiye's technology and innovation ecosystem to advanced technology production and entrepreneurship activities, Bilişim Vadisi considers the creative and cultural industries as an integral and transformative component of this ecosystem. In this context, industrial design is positioned within the Creative and Cultural Industries (CCI) as a discipline that establishes connections between physical production, user experience, and digital production domains. In a context where digital production practices are diversifying and where sustainability and resource efficiency are becoming increasingly decisive, industrial design—together with material innovation, production technologies, and user-centered development processes—emerges as a critical component of technology-driven innovation. Bilişim Vadisi frames this field not merely as a part of product development processes, but as a mode of production that redefines scaling, competitiveness, and sustainable production approaches.

In line with this approach, the third session of the Creative and Cultural Industries: Technology and Scaling Meetings was held under the title Industrial Design and Circular Innovation: From Sustainable Production to Strategic Growth. The session addressed the relationship between industrial design and production processes through the lenses of material selection, circular production approaches, entrepreneurial models, and scaling dynamics. Discussions indicated that design should be considered not only as an aesthetic or functional contribution, but as a component that directly influences the efficiency, sustainability, and market positioning of production systems.

The evaluations conducted within the scope of the session focused particularly on how design processes are integrated into product development cycles, the relationship between material innovation and production and cost structures, and the scale at which circular approaches can be implemented. In this context, it was emphasized that positioning design more effectively at earlier stages can contribute to more accurate identification of user needs and to more efficient product development processes. Similarly, it was noted that sustainable material and production approaches can offer a strategic area for competitive differentiation under certain conditions.

Participants highlighted that production in the field of industrial design exhibits a multi-layered structure spanning academia, independent design practices, entrepreneurial structures, corporate product development processes, and advanced technology applications. Within this structure, it was emphasized that addressing design more holistically along the technology–entrepreneurship–innovation axis could contribute to the development of scalable and sustainable production models.

Within this framework, the session opened up discussion on the conditions under which industrial design becomes a strategic value creation mechanism, how circular innovation relates to production systems, and which areas can be strengthened to achieve sustainable scaling in a global competitive context. The discussions generated concrete insights particularly regarding the positioning of design within production processes, the determination of material and production decisions, and the relationship between design-driven production and entrepreneurship and scaling processes.

2.DISCUSSION FRAMEWORK AND GUIDING QUESTIONS

DISCUSSION FRAMEWORK AND GUIDING QUESTIONS

The discussions conducted within the scope of the third session of the Creative and Cultural Industries: Technology and Scaling Meetings series were carried out within an analytical framework addressing industrial design and circular innovation through the lenses of production processes, material innovation, entrepreneurial dynamics, and scaling approaches. The experiences of participants representing different layers of production and representation enabled a joint evaluation of recurring structural dynamics within the design ecosystem.

The questions posed throughout the session aimed to make visible the position of industrial design within the production chain; the stage and level at which design is integrated into product development processes; how material and sustainability approaches relate to production, cost, and supply dynamics; under which conditions design-driven thinking and entrepreneurial practices are strengthened; the scaling dynamics of design-based production; and the intersection and interaction areas between industrial design and the creative and cultural industries. During the discussion, these questions were addressed from multiple perspectives, expanded, and grounded in the direct experiences of participants.

The discussions enabled these themes to be addressed not only at a conceptual level, but also through concrete examples drawn from the direct experiences of participants. The discussion framework was structured around five main axes. These axes also form the basis of the analytical sections that follow in the report.

The Position of Industrial Design within the Ecosystem and Its Relationship with Production Processes

This theme examined the stage at which industrial design is incorporated into product development processes and the implications of this positioning for the final value of products. Discussions indicated that, in practice, design is often introduced after the technical framework has been defined, whereas its integration at earlier stages can play a decisive role in problem definition, the identification of user needs, and the overall direction of product development processes. It was also noted that the quality of problem definition and design briefs may vary, and that this variability can directly affect the effectiveness of design processes.

Material Innovation and Circular Production Approaches

This theme addressed the relationship between material choices, sustainability, cost, and production infrastructure. It was noted that while the use of circular materials is technically feasible, such choices are often determined by cost structures, supply chains, and production processes. This situation may limit the broader implementation of circular production approaches, while at the same time, in sectors where product performance, user experience, and brand differentiation are decisive, such approaches were considered to have the potential to create competitive advantage by strengthening the overall value proposition of products.

Design-Driven Thinking and Entrepreneurship

This theme explored the relationship between design processes and entrepreneurial dynamics. Discussions highlighted that problem definition is often shaped by technical requirements, with insufficient attention to user context. It was emphasized that integrating design-driven thinking at earlier stages can support the development of solutions grounded in user needs. In addition, it was noted that mechanisms that support the transformation of product outputs beyond the prototype stage into sustainable business models, brands, or scalable ventures could be further developed.

Scaling, Branding, and Internationalization Dynamics

The evaluations conducted under this theme demonstrated that design-driven production is not limited to product development and should be addressed together with brand building, intellectual property generation, and the organization of production processes. In this context, it was emphasized that design emerges as a critical component in determining the market positioning and perceived value of products, and that, in addition to Türkiye's existing production capacity, value-creation processes can be further developed along these lines. It was also noted that the transfer of methods and technologies across different sectors remains limited, and that certain design and production approaches are adopted at varying speeds across industries. In the context of internationalization, it was underlined that not only access to markets, but also how products and brands are positioned within different cultural contexts, is a determining factor.

The Intersection of Design with Creative Industries and the Experience Economy

This theme addressed the relationships established by industrial design between physical production processes, user experience, and digital production domains. Discussions indicated that design plays a bridging role across different modes of production, enabling the transfer of knowledge and methodologies between sectors. It was also noted that the role of designers is expanding beyond product development into areas such as user experience, branding, and strategy, contributing to the diversification of value creation processes.

3.DISCUSSION AND ANALYSIS

THE POSITION OF INDUSTRIAL DESIGN WITHIN THE ECOSYSTEM AND ITS RELATIONSHIP WITH PRODUCTION PROCESSES

The discussions conducted under this theme focused on how industrial design is incorporated into production processes. Participants stated that in many projects, product development processes begin with the definition of technical requirements, while design is introduced only after this framework has been established. In such an approach, design is often addressed through the form or mode of use of an existing solution; therefore, it does not play a determining role at the stage of problem definition.

It was expressed that this situation has direct implications, particularly for the identification of user needs. Participants noted that failing to test user-related hypotheses early may require redesign during development. Such iterations were stated to complicate the process in terms of both time and cost. By contrast, in cases where early contact with users is established and prototyping processes are implemented from the outset, the development process was observed to progress in a more predictable manner. Participants also emphasized that the quality of briefs used in product development processes is a determining factor; in particular, when problem definitions are not sufficiently clear, design processes may struggle to establish direction.

Participants indicated that when design is introduced late in the process, designers often assume the role of improving existing technical solutions or addressing emerging issues. In such cases, it was noted that design may shift from a role that defines direction to one that adapts to an existing structure; this, in turn, limits the impact of design within the process.

SERTAÇ ERSAYIN

SEZEN GÜNGÖR

During the discussions, cases in which prototyping is used not only for technical validation but also as a decision-making tool were also addressed. Participants stated that physical or digital prototypes play a critical role in generating user feedback, testing hypotheses, and making internal team communication more tangible. It was expressed that in the absence of such an approach, design and production decisions may proceed based on abstract assumptions. Participants also noted that systematically feeding back data obtained from the real-life use of products into design processes can contribute to shaping decisions on the basis of more concrete and objective data.

Participants also drew attention to the fact that the position of design within production processes varies depending on organizational structures. It was stated that in large-scale corporate structures, design is defined within specific processes and teams, whereas in smaller teams or startups, design is often positioned as a function that is activated as needs arise. It was expressed that this differentiation directly affects the influence of design within processes and its level of participation in decision-making mechanisms.

At the same time, participants noted that the early inclusion of design in production processes can influence not only the relationship between the product and the user, but also production-related decisions. It was stated that decisions regarding material selection, production methods, and cost structures are closely linked to the directions established at the beginning of the design process. In this context, it was emphasized that design can assume a role that shapes the process from the outset, rather than being positioned merely as an application layer introduced at later stages.

MATERIAL INNOVATION AND CIRCULAR PRODUCTION APPROACHES

The discussions conducted under this theme examined how material selection and production decisions relate to the design process. Participants stated that the use of sustainable or circular materials is, in many cases, determined not by design decisions but by cost, supply conditions, and production infrastructure. This situation may lead to circular approaches remaining limited in practice.

It was expressed that circular production approaches are often treated not as a primary design criterion, but as a secondary consideration evaluated within the constraints of existing production and cost conditions. It was noted that such an approach can make it difficult for circularity to evolve into a systematic production model.

Participants also indicated that access to alternative and sustainable materials is another factor influencing decision-making processes. Limited access to certain materials or uncertainties in supply processes may make their practical use more difficult.

It was also discussed that while the use of alternative materials may be technically feasible, their integration into production processes is not always equally achievable. In particular, the fact that existing production lines are optimized for specific materials was identified as a factor that complicates the transition to new materials. In this context, it was emphasized that material choices are shaped not only by design intent but also by the existing capacity of production systems.

Participants also drew attention to the direct relationship between circular production approaches and cost structures. It was noted that, in some cases, recycled or sustainable materials may be more expensive, which can influence decision-making processes, particularly in product categories with high price sensitivity. At the same time, it was stated that in certain niche areas, such material choices can be used as a differentiating factor in product positioning.

The discussions also highlighted that material selection is evaluated not only in terms of environmental sustainability, but also in relation to the product's mode of use and performance. Participants noted that material choices can directly affect weight, durability, and the physical relationship between the product and the user; accordingly, material decisions were seen as closely linked to the functional dimension of the design process.

In addition, it was emphasized that design decisions alone are not sufficient for the broader implementation of circular production approaches. It was stated that supply chains, production infrastructure, and cost structures need to be aligned with these approaches; otherwise, circular applications tend to remain project-based and limited in scope.

ORHAN IRMAK

ÖMRÜM ÖZGÜL

ÖZGÜR MUTLU ÖZ

SARE RABİA ÖZTÜRK

IZAK EŞKİNAZİ

PINAR ÖNCEL

DESIGN PROCESSES, PROBLEM DEFINITION, AND ENTREPRENEURSHIP

The discussions conducted under this theme focused on how design processes begin with problem definition and how this process relates to entrepreneurial dynamics. Participants stated that in many projects, problem definition is primarily based on technical requirements or existing solution frameworks, while user-related factors are often considered only at a later stage. It was noted that this situation stems from the predominantly engineering-driven structuring of production processes.

It was expressed that this approach may lead to a loss of direction in product development processes. Participants noted that in projects that progress without a clearly defined problem at the outset, the need to repeatedly change direction emerges throughout the process, and that this situation directly affects the use of time and resources. It was also emphasized that such uncertainties become more pronounced in entrepreneurial processes.

During the discussions, cases were addressed in which prototyping is used not only as a development stage but also as a tool for testing problem definition. Participants stated that prototypes developed at early stages are critical for generating user feedback, and that such feedback enables the direction of the project to be reassessed based on concrete data. In the absence of this approach, it was noted that decision-making processes tend to proceed based on assumptions.

Participants also drew attention to the limited relationship between design education and entrepreneurial practices. It was stated that educational processes are largely focused on product development and technical competence, while issues such as how these products are commercialized, positioned, and transformed into sustainable structures are addressed to a more limited extent.

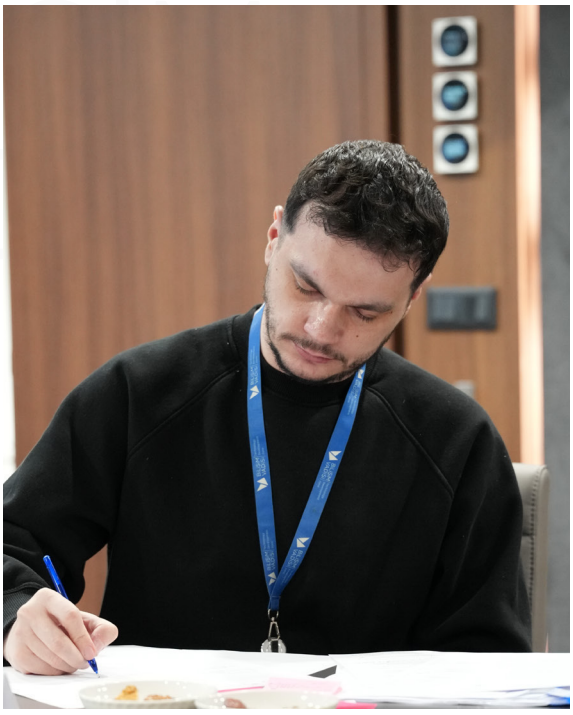
It was also emphasized that entrepreneurship should be understood not as an individual inclination, but as a competence that can be developed. However, it was noted that this competence is not systematically addressed within design education or production processes. The discussions indicated that, as a result, designers' transition into entrepreneurial processes remains largely dependent on individual effort and experience.

It was noted that guidance and support mechanisms to help designers sustain the products they develop from an entrepreneurial perspective could be further strengthened. The participants emphasized that product development processes often conclude at the prototype stage, and that more systematic approaches could be developed to support the transformation of these outputs into independent ventures, brands, or scalable structures. In this context, it was noted that increasing structured support in areas such as mentorship, business model development, investment readiness, and market access could facilitate designers' transition into entrepreneurship. In this regard, participants underlined the importance of addressing design processes not only in terms of product development but also in conjunction with business model development, market analysis, and strategic positioning.

ÇİĞDEM KAYA

DENİZ KARAŞAHİN

NUR SEDA DAĞDEVİREN



KEMAL SÖZBİR

SCALING, BRANDING, AND INTERNATIONALIZATION

The discussions conducted under this theme focused on the conditions under which design-based products can scale along the process extending from production to the market. Participants stated that product development alone is not sufficient for scaling, and that production, organizational structures, and the relationship established with the market need to be addressed together.

In the discussions, it was expressed that Türkiye has strong production capacity, and that, in addition to this capacity, value creation processes can be further developed. Participants noted that design should be considered not only as a component that contributes to product development, but also as a factor that can enhance the market value of products. In this context, it was stated that design can assume a role in strengthening the relationship between production and brand value.

Participants also indicated that the processes through which design-based products evolve into brands progress through a limited number of examples. It was noted that many developed products remain at a certain production or project stage, and that long-term planning, positioning, and organizational processes required for transforming these products into sustainable brand structures could be addressed more systematically.

It was also emphasized that the generation and protection of intellectual property constitute an important part of the scaling process. Participants stated that treating design outputs not only as physical products but also as intellectual assets—and ensuring their protection and management—can be a determining factor in accessing international markets.

ZAFER ULUÇAY

CAN UÇKAN YÜKSEL

In the context of internationalization, it was expressed that access to global markets is technically possible. It was also expressed that transforming this access into a sustainable positioning requires different capabilities. Participants noted that product positioning in the target market, brand language, user expectations, and competitive conditions need to be evaluated together. It was emphasized that entering global markets is not limited to access to distribution channels, but that the way products and brands are perceived in those markets is also decisive. Participants also stated that user habits and cultural contexts across different geographies can directly influence design decisions, and that design therefore needs to be reinterpreted within each context in international markets.

Participants also indicated that investments in production and design are directly related to economic conditions. In environments where necessary financial conditions—such as a long-term investment perspective and the manageability of risk—are limited, investing in production and product development may be perceived as a longer-term and higher-risk choice. It was stated that this situation can indirectly affect the scaling processes of design-driven ventures.

The relationship between production capacity and scaling was also addressed in the discussions. Participants emphasized the importance of structuring production infrastructure and supply processes in ways that support growth beyond a certain scale. It was stated that continuity in production processes and the maintenance of quality standards are particularly critical in building trust in international markets.

THE INTERSECTION OF DESIGN WITH CREATIVE INDUSTRIES AND THE EXPERIENCE ECONOMY

The evaluations conducted under this theme addressed the relationships that industrial design establishes with different domains of production. Participants stated that design practice is not limited to the development of physical products, and that it can assume a transitional role across different sectors.

During the discussions, examples were shared of industrial designers moving into areas such as user experience, digital product development, and content production. Participants noted that design capabilities can be adapted to different modes of production, indicating that design constitutes a field of value creation that is not limited to physical production. They also emphasized that the role of industrial designers is expanding, and that they increasingly take on active roles not only in product development processes but also in areas such as user experience, branding, and strategy.

In this context, it was expressed that design can act as a point of transition between physical production processes, user experience, and digital production domains. Participants stated that design provides a shared language and set of methods across these different modes of production, positioning it as a tool capable of establishing connections between domains. They also noted that access-based models, such as sharing platforms and subscription services, offer new design opportunities compared with ownership-based models.

It was expressed that the value of a well-designed product is determined not only by its technical features, but also by its positioning and the relationship it establishes with the user. In this context, examples were shared of technology companies that, by investing early in user experience, transformed their product development approaches. It was noted that such approaches point to the need to consider design not only in relation to product development, but also in conjunction with understanding users and positioning products in the market.

The discussions also included examples illustrating the limited transfer of methods and technologies across different sectors. Participants noted that approaches such as rapid prototyping and digital product development, which have long been used in industrial design, have been adopted more slowly in sectors such as ready-to-wear and fashion. It was stated that this situation highlights the importance of strengthening interdisciplinary interaction.

Participants also drew attention to the fact that high-standard production and design methodologies developed in the defense industry are not sufficiently transferred to other sectors. It was expressed that the wider dissemination of these methodologies across the broader production ecosystem could contribute to quality and competitiveness in different sectors.

It was also noted that forms of value creation differ across different production domains. In production processes based on physical manufacturing, value creation tends to follow a longer and more resource-intensive structure, whereas in digital and content-based production, faster and different scaling dynamics may emerge. It was stated that this situation necessitates a reconsideration of the role that design assumes across different production domains.

Within this framework, the evaluations demonstrate that the relationship established by industrial design with creative production domains can be understood not through a fixed sectoral definition, but through the transitions between different modes of production.

AYŞE BEREN ERGÜLEN

ZEYNEP SERRA AKMAN

4. CONCLUSION AND OVERALL ASSESSMENT

CONCLUSION AND OVERALL ASSESSMENT

The discussions conducted within the scope of this roundtable meeting revealed that industrial design in Türkiye occupies a multi-layered position in relation to production, technological development, and entrepreneurial dynamics. Participant evaluations indicate that design is not merely a discipline that contributes to product development processes, but one that has a broad sphere of influence extending from production decisions to user experience, and from material selection to market positioning.

A key topic that emerged throughout the meeting was the timing and manner in which design is incorporated into production processes. Participants emphasized that involving design at an early stage can help identify user needs more accurately and support more efficient product development. This highlights the potential of addressing the role of design within production processes through a more holistic approach.

Evaluations related to material innovation and circular production approaches revealed that this field should be addressed not only from the perspective of environmental sustainability, but also in relation to production infrastructure, cost structures, and supply chain dynamics. Attention was drawn to the importance of structural alignments that go beyond design decisions for the broader implementation of circular approaches.

The relationship between design processes and entrepreneurial dynamics constituted another prominent dimension of the meeting. It was stated that clarifying problem definition at early stages, effectively utilizing prototyping processes, and strengthening mechanisms that support designers' transition into entrepreneurial processes are among the key areas for development in this field.

Evaluations in the context of scaling and internationalization indicate that design-based production is not limited to product development alone, but should be addressed together with brand building, intellectual property generation, and positioning in global markets. It was expressed that, within these processes, design can assume a role in strengthening the relationship between production capacity and value creation.

The meeting also made visible the relationships that industrial design establishes across different modes of production. It was noted that design can assume a role that enables transitions between physical production processes and digital and content-based production domains; this, in turn, provides a basis for the transfer of methods, knowledge, and approaches across different sectors.

Overall, this session demonstrates that industrial design in Türkiye is grounded in a strong foundation of knowledge and practical capacity. It also shows that more holistic and systematic alignment of this capacity with production, entrepreneurship, and scaling processes will create significant opportunities. The discussions indicate that design can be considered not merely as an area of application, but as a component capable of shaping the direction of production and value creation processes.

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