

## Bauhaus of Transitions

### Management of the Unknown and Engineering of Transitions

#### Institute of Design-Oriented Management Science

Around a hundred years ago at the Bauhaus, against the backdrop of 20<sup>th</sup>-century socio-economic change, theorists and practitioners of design, masters of form and masters of material worked together to free the creative forces of their students so that they could shape a new society. On 15 October 2020, the President of the European Commission called for the development of new Bauhauses to meet contemporary challenges.

The purpose of an Institute of Design-Oriented Management Science would be to experiment with one of these Bauhauses: a Bauhaus of transitions where the leaders of inventive collectives could acquire and develop the new languages and practices of 'forms' (conceptual rationality, organization, and governance in the unknown, etc.) and 'materials' (health, mobility, data, energy, materials, etc.) that contemporary transitions require; a 21<sup>st</sup>-century Bauhaus that would train designers of creative collectives, organizers of exploration of the unknown.

The following paragraphs first propose a diagnosis: to amplify contemporary transitions and make them sustainable, one of the main challenges is to increase the capacity for collective action in the unknown, and in the second part the state of the art highlights major assets for developing this capacity. It identifies a research programme on the development of a theory of creation heritage to foster forms of collective action (methods, processes, organization, governance) that are generative, resilient, and responsible. This diagnosis and state of the art lead to the proposal, in the last part, of an Institute of Design-Oriented Management Science that organizes training in the management of the unknowns of transition, with three main objectives: to train design leaders; to develop the science of management in the unknown; and to have a proven socio-economic impact.

Diagnosis: amplifying transitions and making them sustainable by increasing the capacity for collective action in the unknown

### **The unknowns of contemporary transitions: risks or opportunities for preservation-oriented creation**

Faced with the challenges posed by the multiple contemporary transitions (climate change, sustainable development objectives, industrial revival, etc.), the solutions available today are uncertain and controversial; they lead to a proliferation of contradictory alternatives and even sacrificial dilemmas.

The manager-decision maker will be tempted to reduce uncertainties, ensure social acceptability, and deal with crises in a reactive way by prioritizing immediate execution. The manager-design expert, on the other hand, will organize action in times of crisis and transition in a resilient and proactive way. The challenge will be to collectively explore the unknowns of transitions, in order to design new alternatives that are more sustainable and more resilient. To this end, all of the inventive resources of science, the arts, industry and society will be mobilized to design future prosperity and power.

Despite the urgency, the unknowns of transitions call for a new regime of innovation – not a regime of Schumpeterian destructive creation, but rather one that makes it possible to decide what should be preserved with a new creation: a regime of innovation that is a preservation-oriented creation.

Far from being an additional risk, these unknowns of transitions afford an opportunity for action and a means of reducing risk – but to do so they require a new management approach.

### **Managing the unknowns of transition: new design responsibilities, new management needs**

Managing the unknowns of transition cannot rely solely on a planning approach (which neglects the exploration of the unknown) or an entrepreneurship approach (which, however deep tech it may be, remains limited in its collective design capacities). Managing the unknowns of transition requires leaders trained in collective design, capable not only of drawing on existing design organizations (R&D, design, marketing, etc.) but also of involving all the other relevant players.

In addition to R&D and innovation management experts, all the players involved in transition are concerned: the main business areas of the company (R&D, RID, and beyond R&D: marketing, sales, production, legal, HR, IT, etc.), as well as players outside the company (universities, research institutes, innovation intermediaries and industry and ecosystem organizers, professional organizations, public administrations, NGOs and unions, etc.).

Given the unknowns of transition, these leaders have to assume a new form of responsibility, a design responsibility. They find themselves in charge of contributing to the development of solidarity-oriented and sustainable collective design capabilities, which are strongly exploratory while also being deeply integrative.

As is always the case in management science, they simultaneously have to invent new collectives and the new worlds that these collectives convey.

### **The new design skills expected of managers, scientists and leaders facing transition**

These new design responsibilities require new skills: in addition to administrative and financial skills, the ability to integrate various types of knowledge (on science, techniques, social trends, customs, law, etc.); beyond decision-making rationality, the ability to reason rigorously about the unknown (identify it, explore it, regenerate it) and to master creative rationality; the ability to include the most diverse design experts, whether professional or not, to diagnose their fixations and to help them overcome them; the ability to put in place new methods, tools, processes, organizations, governance, and management standards to deal with the unknowns of transition; the ability to organize the acquisition of new knowledge and the enrichment of imaginaries; the ability to manage a multi-scale integration (in particular multiple spaces and timeframes, from quick and smart to long-term pre-positioning).

[State of the art and scientific agenda: a theory of creation heritage for resilient and responsible generative collective action](#)

### **Tools still to be developed for managing the unknown of transitions**

In recent years, innovation and entrepreneurship management has led to the development of new methods, combining user involvement and prototyping (open innovation, design thinking, POC development, Agile methods, etc.). But these methods, lacking sound

theoretical underpinnings, do not adequately integrate the issue of the unknown, which they tend to confuse with uncertainty. They can therefore prove unsuitable or even counterproductive for dealing with contemporary issues. For instance, design thinking implicitly induces a fixation on existing uses; open innovation can work only in a situation where the problem is well identified and the solutions are almost available; the methods derived from creativity neglect expertise and the distinction between known and unknown; and most of these methods neglect the issues of fixation and defixation, which are now considered to be critical for exploring the unknown.

### **The need for sound theoretical underpinnings to manage the unknown**

The question of managing the unknown has actually been raised by researchers for the past 15 years (cf. Loch, De Meyer and Pich 2006), but these same authors quickly equated unknowns with issues of uncertainty to be minimized through series of tests (parallel or sequential). The idea of “managing as designing” (Boland and Collopy, 2004) dates from the same period. The formula was promising, but design was ultimately reduced to an individual talent that allowed the demiurgic emergence of an original and consensual solution. The authors lacked the theoretical foundations for conceptualizing rationality in the unknown and for developing its operational implications in terms of responsible and sustainable collective action. They moreover neglected the questions of governance that these processes of collective creation invite one to reconsider.

### **Scientific advances in design theory and innovative enterprise governance**

In recent years, advances in design theory (C-K theory) have afforded a better understanding of this rationality in the unknown. These formal foundations have allowed for the development of the tools and processes of an efficient “Innovation” function, reinforcing the historical generative power of R&D. Moving from R&D to RID, companies have been able to use a portfolio of methods tailored to structuring the unknown (KCP, C-K invent, C-K expert, C-K reference frameworks, challenging leadership, etc.). This already rich corpus has been disseminated mainly to professional design experts in innovation departments. It is now beginning to be deepened, expanded, and tailored to other actors within the organization or outside (design factory, design commercial department, design ecosystems, etc.), and to be

integrated into all business management tools and methods, particularly decision-making tools, which are still unsuited to the design of decisions in the unknown.

C-K theory has also served to lay the foundations of a theory of the enterprise as a capacity for collective creation, and to propose new principles and new forms of governance for the innovative enterprise. These new principles were enshrined in the Pacte Law in France, with the mission-based enterprise which restores and preserves a space of exploration for the enterprise.

### **Implications of a theory of creation heritage to organize resilient, collective, and responsible regimes of generativity - Governance of innovative collective action**

The unknowns of transition are driving the development of design theory and the theory of governance of innovative collective action:

- First, to conceive of the action of collectives in contemporary transformations, it is necessary to have better models of the logics of generativity, which today are discussed in the widest range of environments and disciplines: not only generative algorithms, technological ecosystems, computer science, organization science, and law, but also learning, linguistics, psychology, etc. They are however often poorly formalized and are reduced to a combinatorial logic.
- Second, logics of preservation (of nature, resources, biodiversity, cultural and scientific heritage, skills, social links, etc.) must be integrated into these logics of generativity, while avoiding the pitfalls of disruptive innovation and creative destruction.

Contemporary issues call for us to *stop opposing these logics* and to think of their creative combination; in other words, to explore the logics of *creation heritage* that allow, support, and amplify creation, and the preservation of which requires an additional innovation effort – in the way that great scientists or artists open new paradigms while preserving accumulated heritages. It is therefore necessary to develop a theory of creation heritage that will make it possible to organize regimes of resilient, collective, and responsible generativity, and to propose appropriate forms of management and governance of these regimes.

The project: a Design-Oriented Management Institute – training and research for managing the unknowns of transition

Recent scientific advances offer solid foundations on which it is now possible to envisage *the joint development of training-action and research programmes. A network of leaders and managers could thus be trained, who design transitions while developing the new doctrine and engineering of managing the unknowns of transition.*

### **The goal: training, research, impact**

The Design-Oriented Management Institute's goal is threefold:

- Training in the management of unknowns for (current and future) transition managers and leaders, to enhance their skills in organizing collective design action (from tools to principles of governance). This involves the extension of managerial language to the *design* of decisions in all areas where these skills are needed today.
- Related research: theory of creation heritage; organizations and tools for managing the unknowns of transition; models of collective, resilient, and responsible generativity regimes; and governance of these regimes.
- Socio-economic impact: to promote the subjects of transition in companies and their ecosystems (cities, health, digital technology, energy, food, mobility, education, etc.), to reconstitute the networks and design environments suited to these forms of action and, more generally, to develop a set of principles for design-oriented management in situations of transition characterized by unknowns.

### **A multi-partner Institute of Design-Oriented Management for training and research**

To fulfil its threefold mission, the Institute of Design-Oriented Management is supported by several partners: public institutions, existing Chairs (in particular, the TMCI chair), and socio-economic partners (companies, etc.).

It relies on a worldwide network of reference teams (universities, companies, public authorities, etc.) in the fields necessary for the training, particularly: cognitive science, engineering science (materials, energy, computer science, geoscience, generative data science, etc.), industrial property, design, philosophy, history, socio-bio-ecosystems, co-design & POC, complex intelligent systems, biomimicry, and so forth.

***The Institute of Design-Oriented Management Sciences would be based on three pillars:***

- 1- A Bauhaus training-action-research course on transition
- 2- A “design-oriented management science” research programme
- 3- “Anomalies found, anomalies desired” workshops.

**1- A training-action-research course with a dual impact (socio-economic and scientific)  
- Bauhaus of transitions**

The institute offers a dual impact training-action-research course structured as follows:

- *Training-action*: the partner organizations each offer (annually or according to a schedule defined with the partners) one of their high-potential transition management executives the opportunity to take part in a “dual impact” training-action course on a relevant transition-related topic (digitization or even virtualization, decarbonization, frugal materials, sustainable energy, relocation and new productive geographies, etc.). Executives acquire skills in action, and the training is applied directly on the subject in question. Companies can entrust their managers with difficult subjects, on which external contributions seem essential.
- *Action for transitions*: each manager-design expert works on the subject given by their company *and* on a second subject of general interest given by a non-company partner (civil society organization, administration, urban community, research institute, etc.). This is an opportunity to discover an alternative system of action and transitional subjects. This second topic will be built on the first one.
- *Dual socio-economic and scientific impact*: each manager-design expert works in a pair with a young researcher (post-doc or doctoral student), and each pair has two objectives: exploration of the unknowns of transitions; and scientific contribution to design-oriented management (theory, models, methods, etc.). The managers thus acquire new capabilities and also advance science. In this sense, this is training through research.
- *A multi-faceted research dimension*: the course will enable research to be conducted with the manager-design experts to develop new models for managing the unknown, on the basis of their experiences. The course will also give researchers and teachers from all disciplines the opportunity to develop original teaching methods enabling

manager-design experts to master the most advanced technical knowledge required today to manage the unknowns of transitions (with a view to training managers in innovative techniques).

- *The constitution of a conceptual environment*: each course is designed to form a conceptual environment linking together: the pairs of managers and young researchers working together on two subjects (per pair); the Institute's researchers; the internal company referents who support the managers in training and ensure regular contact between the trainee and the Institute; and the internal referents of the other transition actors involved (administrations, non-profit organizations, etc.).

## **2- A research programme on design-oriented management**

The institute conducts a research programme on a range of subjects, including:

- 1- design theory and creation heritage
- 2- science and design (generativity in science; management of science; governance of science)
- 3- design-oriented management (management of design experts (new RID, design assets, etc.); design-oriented management for non-design professionals (decision making in the unknown, economic calculation in the unknown, etc.)
- 4- HR-cognition-leadership-education and the unknown
- 5- new institutions in the unknown and policies in the unknown (new "third parties" – colleges, architects, inter-ecosystem third parties, etc. –; management standards in the unknown).

## **3- "Observed anomalies, desired anomalies" workshops**

The institute organizes workshops and research on the conception of "contemporary management utopias", a space in which to overcome the fixations of management. As this approach can be extended to other disciplines, the institute invites scientists from various backgrounds who are developing or exploring new scientific anomalies and have put forward original proposals related to questions of generativity and the unknown.



## **The Institute of Design-Oriented Management: a comprehensive response to issues that are too often treated separately**

- Training of managers, leaders, and scientists responsible for managing collective action for transitions; acquisition of conceptual management skills (ability to reason in the unknown; ability to manage a collective in the unknown; mastery of appropriate management and governance methods).
- Ensuring the necessary scientific progress on these issues.
- Enabling the development of a design environment where several major actors in a design ecosystem collaborate and develop a common language and models for action (private/public/associative, etc.)
- Combining continuing education (of company executives) and initial training (of young researchers).

The idea is that training, based on a sound theoretical and methodological corpus, must serve to overcome the divisions that impede the management of transitions (public organizations/private companies; subjects of private interest/subjects of public interest; initial training/continuing education; managers/researchers; arts/sciences/industry, etc.)

### **Development of the project**

- Incubation in the TMCI Chair from 2022 – “quick & smart” version at the start of the 2022 academic year – in connection with the current courses and research projects.
- Establishment of the research programme as an extension of the Chair in 2023.
- Development of partnerships in 2022-23.
- Inauguration of the Institute in 2023.