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provide protection against environmental influences such as heat, corrosion, or mechanical strain. They can also be used to change an object's surface-material properties such as electrical conductivity, elasticity, or water and air permeability.

There is a range of processes available for applying seamless and permanently adhesive surface layers to an object. These include various chemical, mechanical, thermal, or thermo-mechanical processes like vaporizing and spraying, or immersion in electroplating baths. Coatings are often quite complex in and of themselves, consisting of several separate cohesive layers that perform different yet coordinating functions.

In addition to defining the particular physical and chemical properties of an object's surface, coatings play an important role in the interface between consumer and product. By determining the outward presentation (color, (→) haptic features) of any given product, coatings are often key factors in determining its market success or failure. In a world where the functions and attributes of designed products are increasingly difficult to distinguish from one another, coatings have also become critical to the process of product differentiation and (→) branding.

In recent years, as developers have come to fully recognize the significance of coatings in brand recognition, sales, and functionality, advances in design technologies have made it possible to provide an increasing number of products with sophisticated and function-specific designable coatings. A growing number of products today are designed with coatings intended to address specific (→) target groups through the use of aesthetic (→) styling. In this way, coatings are also significant at the semiotic level (→ *Semiotics*), reflecting the general socio-cultural (→) trends of the market at any given moment. In an age where production cycles are getting shorter and product differentiation is key, coatings are taking on a new degree of significance for designers today. AAU + MF |

→ *Customization, Interface Design, Materials*

Goldschmidt, A., and H. J. Strakberger. 2003. *BASF handbook on basics of coating technology*. Hannover: Vincentz Verlag.  
Nanetti, P. 2006. *Coatings from A to Z*. Hannover: Vincentz Verlag.

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## COLLABORATIVE DESIGN

Until relatively recently, design was commonly perceived as a predominantly individual activity; the designer, trained in his or her (→) craft, was expected to identify, frame, and solve a design problem more or less in isolation from others. In the twenty-first century, however, this perception of the (→) design process is becoming increasingly removed from actual practice. Designers today routinely work in teams, collaborating to create processes and products that reflect the different kinds of expertise amongst the team members—and designers who are not skilled as collaborators are increasingly unlikely to be successful. Even in the most prototypically individualistic ventures, designers have always worked with others, whether directly or indi-

rectly. The needs and desires of clients and endusers for instance affect both the processes and products that designers create. At a very broad level, the consuming public's embrace or disdain of a designer's work is a large-scale collaboration with the designer, noticeably influencing what the designer does next. All design always has been and always will be collaborative in the sense that multiple parties commission, influence, and require iterative change in what any given designer does.

Design as a process is akin to other activities that have often been conceptualized as isolated practices but in reality require collaborative and dialogic contexts (as argued by multiple social scientists and theorists). For instance, design is collaborative in the same sense that the tennis player's ace depends not only of the tennis player's own efforts, but also on the opponent's not returning it—or in the sense that in conversation, a speaker shifts and molds her utterances based on her partner's ongoing mum-mum's and what's. Whenever a designer changes a (→) prototype based on a client or user's real or even anticipated feedback, a form of collaborative design has taken place. Therefore, even in situations where there is a single credited designer, there are multiple collaborators involved, whether imagined (the product's eventual users) or real (the client or consumers who provide iterative feedback at various points in the design process).

Despite the fact that all design can be said to be inherently collaborative, the term "collaborative design" most typically refers to design activities carried out within design teams. These teams consist of various collaborators (team members) who are active in the creative process. Some teams have a single leader who is ultimately responsible for the process and outcome, while others involve a more distributed and consensual process with no one party in charge. They may be composed of individuals with drastically different areas of expertise, or similar backgrounds and fields of practice. The process of design differs according to the composition and structure of the team. When team members come from similar fields of expertise, they generally approach the design problem from a similar working methodology. On the other hand, when there is a wide and disparate range of expertise involved, the process is as much about coordinating the activity of design as well as it is about producing the outcome. Collaborative design of this sort is quintessentially Interdisciplinary (→ Discipline), and requires a breadth of understanding beyond what solo or discipline-specific collaborative designs require.

No matter the structure or nature of the team, methods of clear communication are central to collaborative design. The process involves the same human dynamics that are present in any other group effort, with dimensions of power, politeness,

social distance, and cross-cultural differences clearly at work. Although many design teams still utilize group (→) brainstorming sessions around a table (as embodied in the studio model), the rise of cross-global design projects (→ Cross-cultural Design, Globalization) has necessitated members of the same team communicating solely via remote media. This shift has resulted in a growing need to understand the elements of collaborative skill, and how those skills differ in the context of different communication media (face to face vs. via asynchronous blogs vs. instant messaging vs. desktop video-conferencing, and so on) and in a variety of languages. (→) Research is currently being conducted into the dynamics of design teams, and although it is unlikely that definitive outcomes outlining successful collaborations will be reached, it is clear that understanding collaborative skill will become an increasingly important element of putting together teams, facilitating their work, and training the next generations of designers. MS 1

→ Communications, Integration, Participatory Design, Problem Solving

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## COLLECTIONS

→ Design Museums, Fashion Design

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## COMMERCIAL

→ Advertisement

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## COMMUNICATION DESIGN

→ Graphic Design, Visual Communication

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## COMMUNICATIONS

*The word "communication" means "to impart, share," literally "to make common." It is derived from the Latin: communicate or communis. Communis is a combination of com (meaning "together," "common") and moenia ("defensive walls") which is related to murus ("wall"). As a literal translation from the Latin, "communication" can thus be described as something along the lines of "walking around within the same walls." This description of the word leads to a curious and, ultimately, plausible contradiction: it indicates that communication basically describes a process that is bounded. In other words, it suggests that communication is based on exclusiveness and not open-ended (→) integration.*

On reflection, the paradox inherent in a universally accepted definition of communication is appropriate, because those who participate in communication are privy to a shared language and congruent knowledge of all the relevant signs (including gestures, body language, fashion), which excludes all those not familiar with the foreign national language or regional cultural system. This reality is problematic because, historically as well as today, communication is ardently (even ideologically) presented as an enthusiastic promoter of openness and integration—and design in particular often professes to develop communicative methods for as many as possible, ideally for everyone.

This problem has become even more aggravated over the past few decades. Increasing migration has led to more drastic national linguistic and regional cultural barriers, fueling social segregation and partially dissolving communicative bonds. On the other hand, this complexity has generated hybrid forms of language and spawned other means of communication, making the task of defining communication media all the more difficult.

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# Design Dictionary

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Perspectives on Design Terminology

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Birkhäuser  
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