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Technologies of Organizational Analysis: Charting 'Organization' as a Practical and Epistemic Object

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Technologies of Organizational Analysis: Charting 'Organization' as a Practical and Epistemic Object

Signe Vikkelsø

Historians of science Lorraine Daston and Peter Galison argue that any science "must deal with the problem of selecting and constituting 'working objects' as opposed to the too plentiful and too various natural objects" (2007: 19). In the paper, which is written for my inaugural lecture at Copenhagen Business School, I analyze the fate of the organization chart as a central working object in classic organization and management theory. By contrasting the way it was once used and discussed by classic authors such as Luther Gulick and Lyndon Urwick (1937) with the way organization charts were used in contingency theory and finally with their disappearance in contemporary organization studies and altered role in the self-representation of modern organizations, I describe a history of changing forms of visualization in organization theory and managerial practice. I also discuss the practical and political consequences of this development.

Introduction

In general, Science and Technology Studies have tended to address the 'hard' sciences and technologies – physics, medicine, computers etc. – whereas the social sciences and humanities and their repertoire of 'soft' techniques have been studied less systematically. Among other things, this means that the there is surprisingly little analysis of the tools and techniques with which the social sciences and humanities builds themselves and generate their knowledge. Likewise, the practical, political and epistemic impetuses and consequences of 'technological changes' in these disciplines go largely unnoticed. The field of organization theory and organization studies is an example in case. Within a century it has developed into a heterogeneous community comprising multiple approaches, methods and styles, and a broad range of academic journals with different agendas and outlooks. This development is typically described as one of growing sophistication in which a 'rationalist' and simplistic origin has been gradually replaced by a richer and intellectually more advanced repertoire. However, it is also a development that has been met with concerns for the coherence and practical relevance of the field today. One of its current key debates is the debate of "rigor versus relevance": Should the field strive for getting even more intellectually and/or scientifically sophisticated and 'rigorous'? Or should it accept that practical organization and management need something else than what is published in top academic journals?

A significant contribution of STS is its persistent analyses of scientific paradigms and changes in these as socio-materially constituted. For STS there is no such thing as a 'natural discipline' or a 'given fact'. Instead, such entities are considered temporarily stabilized accomplishments arising from social and material practices. In this light, debates such as the 'rigor versus relevance' are never 'natural' debates, but part of particular material and social changes and ruptures within fields of systematized knowledge – in this case, organization theory and organization studies. Indeed, the development from "Organization Theory", to "organization theory and organization studies" is not likely to simply reflect 'intellectual progress' or 'societal changes', but actively shaping what is defined as 'progress' and 'societal change'. To begin understanding such deeper changes in the field of organization theory and organization studies, the following paper focuses upon a classic object in organization theory – the organizational chart – and its role and fate over time. The paper is written for my inaugural lecture for a professorship with special responsibilities in "technologies of organizational analysis" at Co-

penhagen Business School. Its form reflects this occasion, but I hope it can also be read as a standard paper.

Changes in 'organization' as a working object

In the presentation, I want to speak about some changes in the notion of organization, or more precisely how organization was once defined and illustrated and what has happened to that way of thinking and analyzing. On the one hand, it will be a critical lecture, since I think that an important tool and way of analyzing has disappeared. On the other, it is also driven by curiosity: How has this happened? What has come to replace it? What are the effects of black-boxing organizational hierarchy and role-system?

Together with colleagues in the What Makes Organization?-project at CBS funded by the Velux-foundation, I have investigated and discussed this theme for some time now. Our method has basically been to gather a broad selection of the classic texts, talks and descriptions of organization and contrast them with the way organization is discussed and defined in contemporary texts, talks and practical life (Du Gay & Vikkelsø, 2017). I have myself, for instance, been interested in the way that task and purpose once were crucial concepts in the understanding of organization, but today is more or less absent from organization studies and discussions (Vikkelsø, 2015).

With this interest in the history of organization theory and the contemporary state of affairs, some has seen our research group as nurturing a sentimental outlook, but as I hope to be able to show today, there can be other reasons for digging into our conceptual past than sentimentality. Through various analyses, we describe a change in Organization Theory from being a practical science focused upon effectively arranging and responsibly managing organizations towards their purpose or task, to being a field increasingly coming together in what historian of ideas Ian Hunter calls "a moment of theory". (Hunter, 2006). This stance is skeptical towards

empirical experience, which it regards as foreclosing a higher or transcendental level of experience and cultivates therefore open ness to 'breakthrough phenomena' of various kinds. It can be found in otherwise disparate theoretical vernaculars such as mainstream organization studies focusing upon learning, change, flexibility and creativity; in the economically oriented strategic management literature emphasizing micro agents and dynamic capabilities, and also among critical management theorists and address of post-structuralism and 'lines of flight'. What unites them in this moment of theory is a wholesale rejection of entities that prevent or curb breakthrough experiences and emergence (such as 'bureaucracy', 'regulation', 'stability' and 'authority').

Today, I want to present a short history of one of the lost objects in organization theory: a visual form that is no longer considered of much relevance to contemporary organization studies, and which in practical life has undergone some interesting changes. That object is the organization chart or the 'organigram' as it is also called. Let me first, however, begin with a short quote from the book *Objectivity* by Lorraine Daston and Peter Galison (2007) where they demonstrate how that phenomenon, 'objectivity', has changed visually and conceptually over time: "All sciences must deal with the problem of selecting and constituting 'working objects' as opposed to the too plentiful and too various natural objects (ibid, p. 19)", they say. It is my claim that the organization chart was once one of the fundamental working objects in a practically oriented organization theory, but that it gradually was replaced by other objects and lost its status. It is also my claim that we should not think of this as a 'natural' course of development, but something that may be connected to spiritual, political and economic changes in society at large and that its disappearance has had a number of consequences – not only positive consequences.

The organizational chart and the classic scholars

Let me begin with an organization chart taken from a book by Luther Gulick and Lyndon Urwick from 1937 [Figure 1]. It is just one out of many charts provided in a chapter on *Organization as a Technical Problem* and shows "the coordination of all functions in a British infantry division as it was organized during the Great War" (Gulick & Urwick, 1937/1955, p. 72). In the accompanying text, Gulick and Urwick point to what they think are some important aspects of organization that is illustrated by this chart. Let me mention a few of these. One of the is that: (a) there are officers at every level of command that assist the commander in executing his functions of command; another (2) is that there is a clear line of command, but that this does not prevent a high degree of specialization and different methods of organizing for every function; and finally 3) that despite the multiplication of functions there are clear lines of command at the same times as every service and subject has clear channels of communication and action. According to Gulick and Urwick coordination is one of the crucial aspects of organization, and they quote Mooney & Reiley for saying: "This term [that is 'coordination'] expresses the principle of organization *in toto*, nothing less. This does not mean that there are no subordinated principles; it simply means that all the others are contained in this one of co-ordination. The others are simply the principles through which co-ordination operates, and thus becomes effective" (ibid, p. 49). In their eyes, the organization chart is an expedient and clear way of illustrating that core principle of coordination. It tells us in a tangible and yet detailed manner how a particular organization – in this case an army division – is specifically organized to secure that.

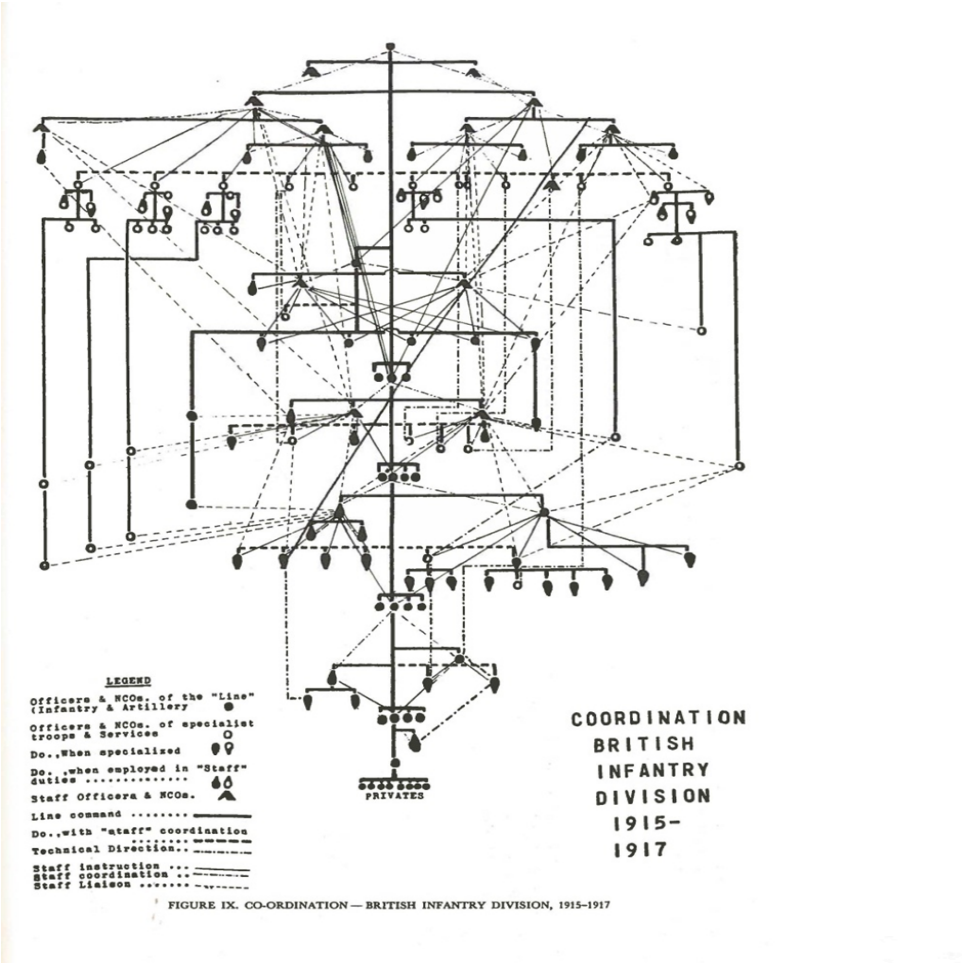


Figure 1

Take a look at the chart and you would be able to orient yourself if you were a manager or an employee in this organizational system, or if you were an outsider wanting to know whom to consult or how a particular unit is connected with other units. Take a closer look, and you might be able to formulate hypotheses about the organiza-

tional system that you could further investigate and perhaps would give you useful knowledge and ideas as a manager, a staff member, an external consultant, a researcher or simply a curious citizen.
Let me present another chart from their book [Figure 2].

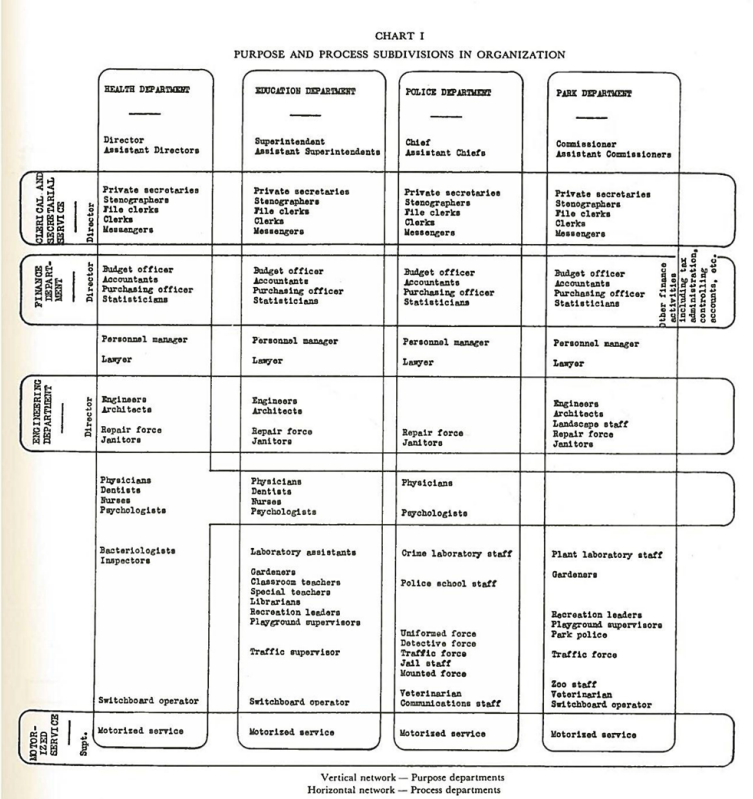


Figure 2

It is a chart showing the interrelations of different departments in a city administration: Just like coordination is a crucial concept – a core object – in classic organization theory, so is 'purpose' and 'process' as Gulick and Urwick call it (but which might also be called 'service'). The chart shows how this particular city administration has four co-existing purposes: to deliver health care, to educate, to police and to maintain city parks, and that each of these departments are equipped with the type of staff needed for accomplishing those purposes. It also shows how the purposes are dependent on a number of general services from other departments – the secretarial service department, the finance department, the engineering department and the motorized service department – and where their activities intersect.

In a subsequent chart [figure 3] they show how such departments established on quite different principles may be "woven together to form a single fabric", as they formulate it, by arranging different ways of working together across units and divisions.

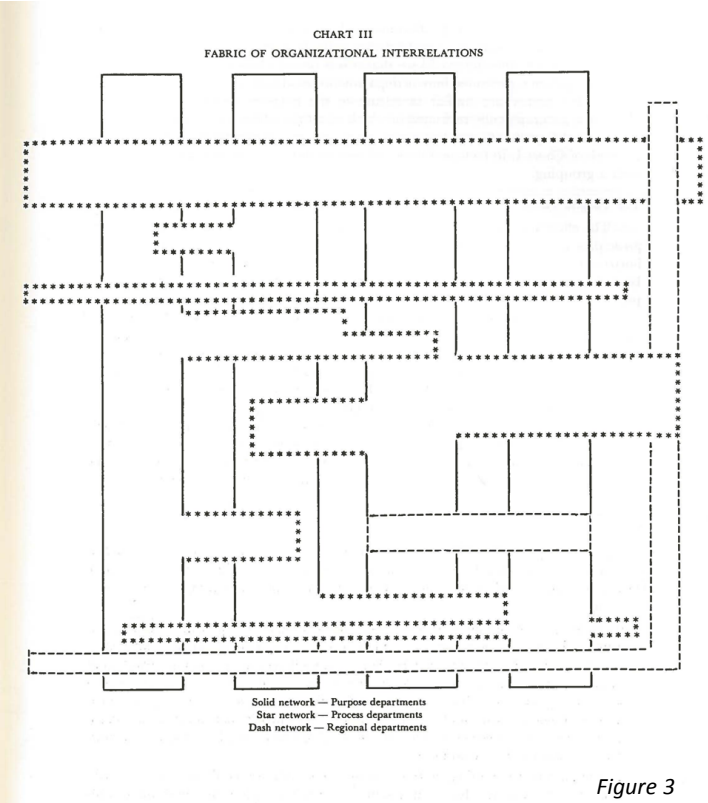


Figure 3

The chart is not meant to be a realistic depiction, they explain, but a thought experiment on how different parts of the organizations could be tied together in relevant ways across units and divisions. Gulick and Urwick explain that charts like these serve to "bring out major questions and considerations which arise in the practice and theory of organization" (page 20). One consideration could, for instance be: Is there any advantage in placing specialized services like private secretaries or filing clerks in each department being part of a 'cross unit team' or should they be located in a specialized unit and work from there? In the book, they discuss situations in which would call for one or the other arrangement. They also explain that "from the standpoint of coordination, it would seem that the heads of departments should visualize and understand the network in which they belong so that they may proceed intelligently and energetically not only to carry out the work under their direction, but to see that that part of their work which falls within the overlapping purpose, or process, or regional area of another department may be fitted together harmoniously. Such an approach [they argue] may serve to dispel the feeling of exclusive ownership and jealousy so common in government departments. The chief executive, by the same token, should understand the network of the organization and should make a special endeavor to watch the areas of overlap and friction…so that they may not interfere with the accomplishment of the major purposes of government" (ibid, p. 21).

Besides the interesting observation that notions of network, process and matrix organization were already part of the organizational vocabulary in 1937 (and not something we have just discovered as we sometimes think), the comments of Gulick and Urwick accompanying the charts also serve to indicate that the act of visualizing organization in terms of functions, relationships, coordination and lines of command was not simply about providing an appendix to organization, but about establishing an important resource for imagining, analyzing, thinking through and balancing organization. In Daston and Galison's optic, the charts formed a crucial working object for organization theory and practice by depicting organizations as particular arrangements of tasks, functions, roles and relations that could then be analyzed and further experimented with. They were not depictions to work *from*, but objects to work *with*.

Organizational charts as typologies

Some decades later, organization theory was still interested in the actual arrangement and coordination of organizations, but particularly focused upon the way that organizations tend to develop different structures depending on their specific business, size and relationships to the environment. One of the organizational forms that attracted attention was the 'multidivisional structure', which was described and analyzed among others by Alfred D. Chandler. In Chandler's book *Strategy and Structure* (1962/1990), the following chart is presented [figure 4].

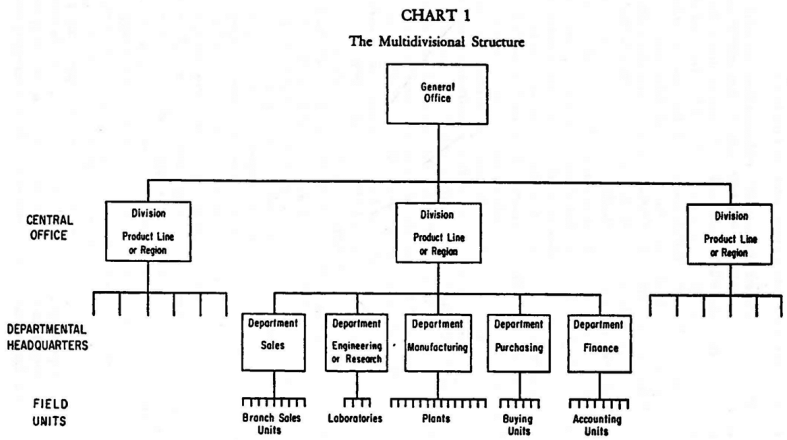


Figure 4

Chandler's book explains that this form gradually developed as big Western companies began to invest into new regional or national

markets or diversify into new product lines and there was a need for an organizational structure that was capable of administering a more complex set of business activities. Analyzing concrete organization charts from many American companies, he developed a generic chart presenting what he found was the general characteristics of the new structure. He pointed to two basic features of this type of organization: that there must be a centralized control over strategic decision making related to the different investment areas; and that operational decision making can be delegated to divisions that are monitored as profit centers. Whereas Chandler also presents the different charts from the companies that he had investigated, this 'generic chart' exemplifies a turn that had begun in organization theory, and should spread and become a general tendency: Organizations were increasingly understood as *forms* – and types of forms – rather than specific *arrangements*, although it is fair to say that the early proponents of this development were acutely aware of the need not to skip a detailed analysis of the particular ways in which companies and institutions were assuming one or the other form, and the specific challenges arising from this.

The next slide, illustrates how the interest in types or forms of organization at one point reached its illustrative heights [figure 5].

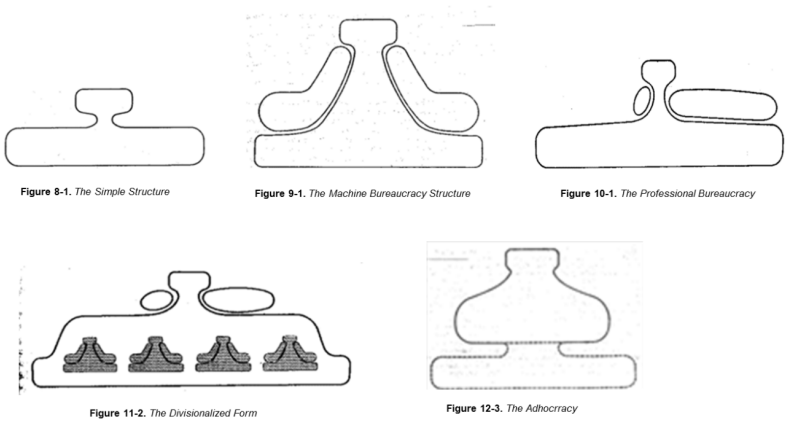


Figure 5

The charts show the five basic organizational forms that were presented by Henry Mintzberg in his book *The Structuring of Organizations* (1979). Drawing together what he found was the key findings of organizational theoretical research, he proposed that organizations typically have family resemblance to one of five organizational 'configurations', as he called them, which differ from one another with regard to the size of five basic parts of the organization and their prime coordinating mechanism. The value of thinking in terms of such organizational arch types is according to Mintzberg that we avoid being overwhelmed by too many design parameters and particular factors and elements and become sensitive instead to the "natural clustering of elements, whether they be stars, ants, or the characteristics of organizations" as he phrases it (ibid, p. 300). Not anything goes with anything, he warns us. Effective and harmonious organization is a matter of finding a natural balance among many elements and situational characteristics.

Flat is good, round is better

Mintzberg's book was one of the last books in organization theory in which charts were taken seriously as a way to discuss, analyze and theorize organization. At the same time his charts epitomize a line of development in which organizations had increasingly been studied, depicted and sorted in terms of different geometrical forms and in particular in terms of whether they were more of a hierarchical, triangular shape or more of a flat, network shape.

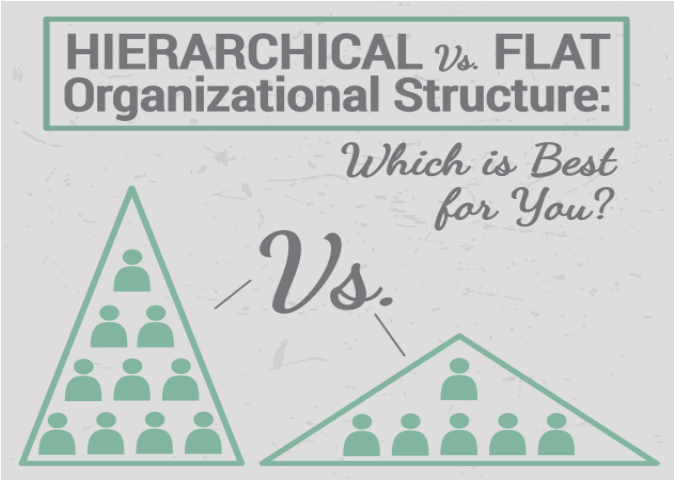


Figure 6

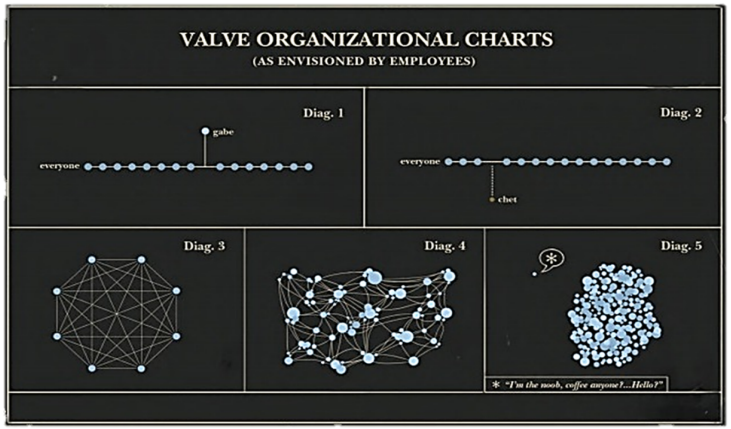


Figure 7

The chart as a detailed graphical illustration of functions, lines of command, coordinating relations and so forth were no longer really used in organization studies, which had become interested in other aspects of organizational life: learning, culture, innovation, institutionalization and change, just to mention some of the most popular themes. Other illustrations took over and they were of a different nature and had different aims that the charts have had.

A popular graphical illustration became the flowchart [figure 8] – depicting and analyzing not the flow of work or other concrete elements, but preferably the theoretical relationships between different factors, processes and dynamics in organizations such as decision-making, cultural values and assumptions, the development of dynamic capabilities, implementation phases etcetera – took over.

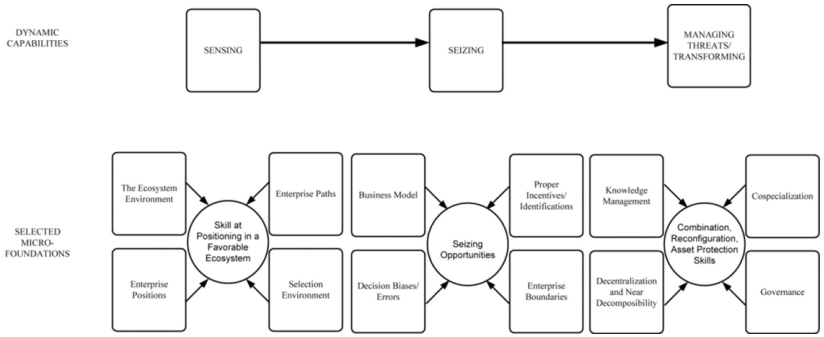


Figure 8: Foundations of dynamic capabilities and business performance (cf. Teece, 2006).

Other hugely popular means of illustration became the four field table and the phase model [figure 9], which were used to depict different conditions or phases that organizations can be in. An organization can, for instance be operating in a turbulent environment, but internally be focused on exploitation their old competences rather than exploiting new opportunities.

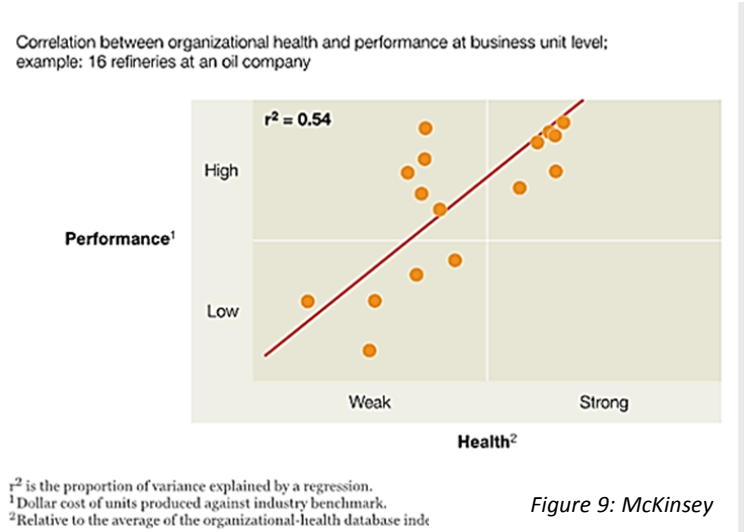


Figure 9: McKinsey

By this short and by necessity crude history (given it's a short lecture), I hope to have illustrated that the working objects of organization theory have not stayed the same over time. What was once a *sine qua non* object for organization theorists and practitioners – the organizational chart as expressive of fundamental task and role arrangements in an organization – had gradually changed to become more and more stylized and ideal typical and finally fell out of favor. However, whereas very few organization studies would today dream of depicting their findings in terms of charts, or for that matter present the official organization chart of the organization they study, organization charts are still widely used outside organization theory. Very few larger companies and public institutions do not have an official organization chart to present in an annual report and on the company web site. Here is the organigram of CBS and also some others that I have selected from the thousands of charts that appear when you picture-google the term 'organization chart' [figure 10].

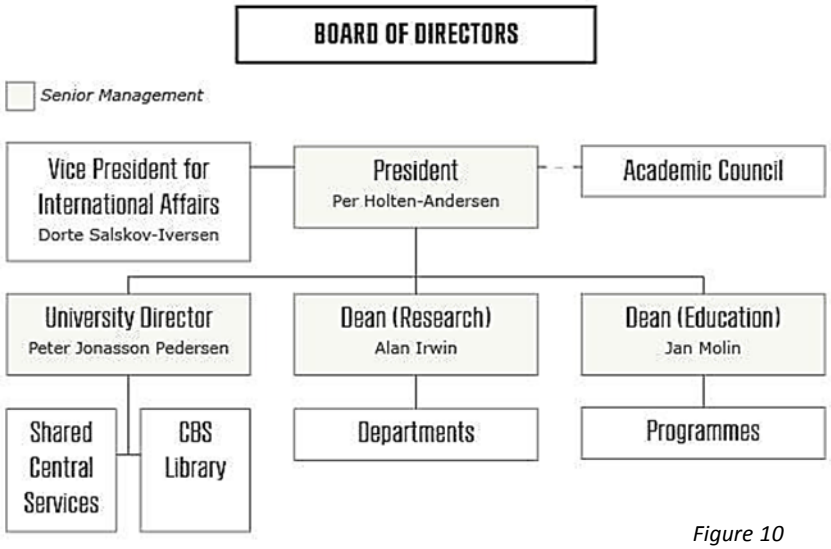


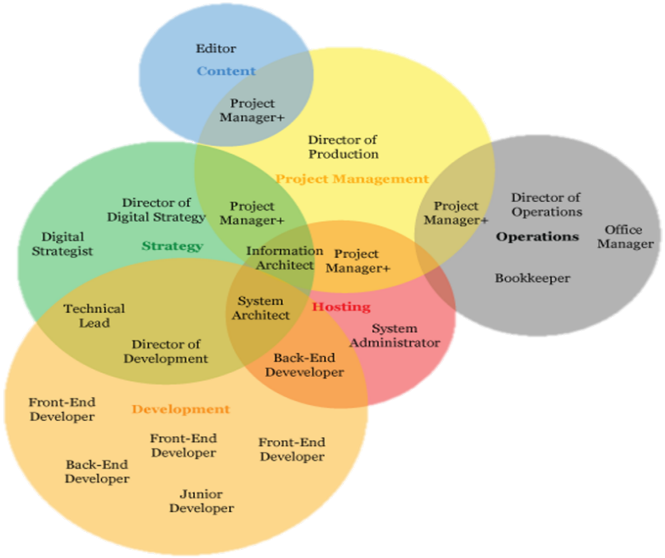
Figure 10

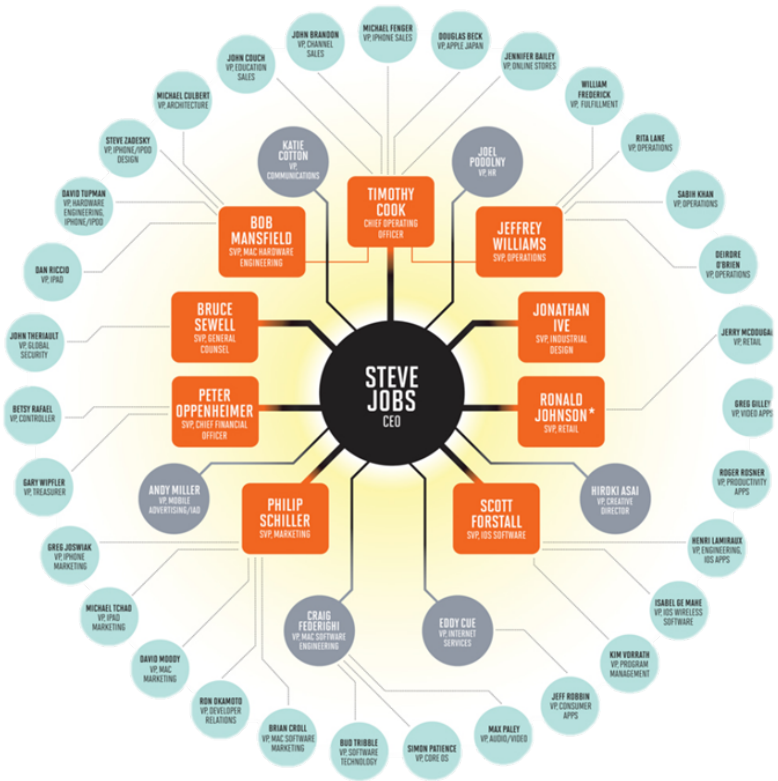
As you can see, the charts still depict some elements of the organizational arrangements. Curiously, however, only the executive functions are normally shown and the overall units and functions. Compared to the way organization charts were depicted in the classic texts – as close to the actually existing functions, the lines of command and role-relationships and so on – we see just a glimpse of the organization; selected bits and pieces that for some or the other reason have been found important to show. The rest of the organizational arrangement is absent or black-boxed. To dwell a bit on the CBS chart, it seems for instance peculiar that the by far biggest parts of the school in terms of staff and middle managers, the departments and the educational programs are not shown in detail, but only as two silent chunks. Some executive functions, on the other hand, such as the Vice President for External Affairs are singled out, whereas the student organization is not shown. The Academic Council is shown, but not the HSU – the collaborative organ. Moreover, the

relationships between units are only partially shown. For instance, the many linkages between Departments and Programmes at CBS (what in daily parlor is referred to as "the matrix") are not indicated at all. This way of only providing a partial depiction is, I believe judging from a quick Google-research, a general characteristic of modern companies and institutions. What we see is not a comprehensive depiction of actual organizational arrangements, but some preferred, if not simply randomly chosen aspects. More precisely, we see the strategic apex and executive functions (or some of them), but not the full task system. It is rather invisible what the executive functions are meant to control and direct.

But this is not the whole story. Just like organization charts gradually changed form and scientific purpose, the organization charts also seem to be shape-shifting these days in a way that substantiate the hypothesis that they no longer are the same working objects as the classic chart and are resources for wholly other ambitions that to staff and coordinate around shared purposes. Let me show you a number of organization charts, which seem to speak a different semiotic language than the black and white pencil and ruler pictures of the thirties [figure 11].

Figure 11





In lack of a proper name, I call these charts 'organizational bubble charts', as they all seem to deploy the circle as their preferred form. Like classic organizational charts they appear to depict the functions and units of given organizations, but they tend to skip the formal lines of command and instead illustrate the organization as a hub of friends, a swarm of co-workers, or a tribe of people around a chief or a customer – 'you' . Evidently, the purpose of the charts cannot be to illustrate actual lines of command, but rather to produce a certain carefully crafted image of something else. As practical and epistemic objects they seem not to be comparable to the classic charts; they are meant for something else – shareholder impression, employer branding and customer service, I guess – and work on completely different registers with completely different virtues.

This short history of organization charts that I have now told can be interpreted in different ways. Some would consider it a history of increasing theoretical and practical sophistication. That is, at least, how the history of organization theory is often told by most contemporary scholars. Others would see it as a history of changing fashions – some decades cultivate minimalism and rulers, whereas others prefer ornamentation and colors. However, it could also be analyzed as a story of deliberate dismantlement or displacement of particular 'reality devices' for a particular purpose or effect.

Even if I think there is much reason to develop the latter type of analysis, I think it is important to keep in mind the way Daston and Galison concludes on the shifts and changes over time in the definition and depiction of 'objectivity'. Let me quote from them again: "Although they may sometimes collide, epistemic virtues do not annihilate one another like rival armies. Rather they accumulate" (2007, p. 363). Working objects do not become scientifically and practically better and better. They change and open up new ways of conducting research and of practicing, where the newly emerged objects do not replace old ones, but co-exist with them and enter as yet a form in a richer and more varied epistemic and practical tapestry. We can dig organization charts out of the archive and use them for what they were originally meant for.

The free-flowing organization as financial object

Changes in epistemic objects can be understood in connection to changes in society. That is another crucial finding of science studies. Thus, the new depictions of organization – to the extent organization is at all depicted in one or the other way in contemporary organization studies – are in the word of Karin Knorr-Cetina a "[different architecture of empirical approaches, a specific construction of the referent, a particular ontology of instruments, and a different social machine]" (Knorr Cetina, 1999, p. 3). I will end this talk by reflecting upon what this social machine might be in which organization charts

in the classic form is no longer considered relevant. Today, classic organization theorists are often characterized as 'instrumentalist' or 'functionalist' that were preoccupied with efficiency , but who also were constricted by a narrow, local outlook. However, it is important to remember that they were part of a time, in which the lessons from the two World Wars were obvious, where workers forcefully demanded more rights and where there generally was a wish to construct a well-functioning society based on scientific principles, social awareness, sound managerial competences and economic prudence. In this purview, organization charts were not only epistemic and practical objects for the organization theorist and the practicing manager, but also served an important function in a society which had developed a deep skepticism of closed institutions and distant authorities.

Luc Boltanski and Eve Chiapello have suggested that the development in management literature from the fifties to the end of this century was intimately connected to – in fact was a spiritual and pedagogical instrument for – ambitions of freeing organizations from the ties that prevented a flow of new capital streams and accumulations. Is it likely that the gradual disappearance of organization charts from organization theory – the whole transformation of Organization Theory – and the change of charts into rather different objects with other effects in practical organizational life is an associated change in the production of organizational reality which allows new forms of capitalization and accumulation?

Among organization scholars, phenomena like the disappearance of organization charts is often met with two types of arguments: 1) That organization charts do not really tell you anything important: that they only depict the formal side of organization and not the informal side, which is where things really happen, it is assumed; and 2) that modern organizations are of a more ephemeral, flexible and complex nature that resist crude depiction. Even if these arguments may hold some truth, I think they underestimate the way in which organization charts once were drawn, analyzed and fed into

organization theory and managerial practice. I also think it ignores the epistemic virtues and practical action that was afforded by this way of depicting, analyzing and thinking about organization; affordances that are no longer attractive to contemporary capitalism. When we discard the detailed organization chart, we also discard the opportunity for looking into and being specific about a number of organizational dimensions – and I would say crucial organizational dimensions – that flies under the radar so to speak and becomes 'disruptive' (as Jill Lepore (2014) has argued is a key idea in contemporary innovation literature). How did the lines of command, for instance, work in the Lehmann Brothers? How do they work in National Board of Health? Which units were responsible for what in arranging and controlling the Eurovision Song Contest that has presented the citizens in Copenhagen with a 100-millions deficits?

Today, organization studies – both its mainstream proponents and its critical counterparts – depicts organizations not as cooperative, responsible arrangements, but as dynamic, ephemeral potentialities. This development is not simply a "loss of performativity", as Barbara Czarniawska suggests, in which 'softer organization theory' loses momentum vis-à-vis economically oriented approaches to organization (Czarniawska, 2014). Rather, it actively constitutes 'organization' as an asset that lend itself more easily to valorization efforts in terms of flexibility, dynamism, learning etc. A valorization that attends to the organization's ability to suggestively self-describe its activities rather than to present a clear picture of its actual organization. The chartless organization, in this respect, is not a more (or less) 'sophisticated' or 'capable' object, but an investment object, a performativity promise, that is less prone to be held accountable or criticized, and which can easily 'disrupt' attempts to do so by evading a positive (or 'factual') depiction.

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