The Role of the Digital Coach in the Context of Digital Transformation

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ABSTRACT

The use of digital solutions faces companies with new challenges. It's important to recognize and exploit the associated innovative design potential for future organizational development and to deal with and resolve resistance appropriately. The establishment of a new field of activity for a digital coach (DC) represents an innovative service approach in the context of digital transformation. In this context, an empirical feasibility study was conducted on the establishment of the DC in selected EU countries. The study builds on three hypotheses, which take a theoretical reference to innovation research as well as quality management and highlight the perception of crisis situations as well as promoter roles and service quality as possible preconditions for innovation. This article deals with the results of this empirical study as well as with the theoretical and practical implications for the successful establishment of the DC, which can be elaborated against this background. Overall, it has been found out that the greatest resistance lies in the fact that the need for change has not been aware of, e.g., in the organization, and that the willingness to change may be too low. The greatest potential for the respondents lies, among other things, in the fact that the DC's suggestions lead to savings in time and money.

Keywords: Eu project digital coach, Digital transformation, Resistances, Potentials, Establishment of a new service, Innovation

STARTING POINT

The digital transformation and the associated challenges for individual actors, companies, the economy, and society form the starting point for the EU project "Digital Coach" (DC), which has been financed for three years. The project addresses the question of how players in the education system can sustainably succeed in promoting the competencies required to shape the digital transformation in organizations as well as in the economy. The establishment of the task field of the DC is interpreted in the present project as a special form of innovation. Against this background, the problem - according to empirical studies - is that such change processes do not lead to the desired results in 60-70% of cases (Kröll, 2020; Christensen et al., 2016). In order to work out the reasons, the present project investigated the resistance and potential that could potentially arise when establishing the DC's field of activity.

THEORETICAL REFERENCE FRAMEWORK

The digital transformation as well as the associated implementation of innovations poses the challenge for the responsible actors to shape the associated changes in an appropriate manner, e.g., in the organization or in the corresponding networks (Haefner et al., 2021; Kiron et al., 2016). According to Kim (1993), the interplay between organizational and individual learning is a crucial factor for organizations or networks (collective actors) to meet the future challenges posed, e.g., by technological development or by exploiting the corresponding design and innovation potentials. In order to enable organizational learning, i.e., to change routines or integrated task performance routines in the sense of Doz (1996) and behavior, individual actors have to be involved. Following Kim (1993), this article also looks for problems or resistances that might interfere with organizational and individual learning. It is assumed that the successful establishment of the DC task area requires both individual and organizational learning and a certain interplay between the two (Hirsch-Kreinsen & Ittermann, 2021). It should be noted that individual as well as collective actors learn.

Innovation research refers to the finding that the perception of a crisis is a potential prerequisite for innovation to succeed or lead to the desired outcome (Stember et al., 2021). These crises can be triggered by advancing digitization or other megatrends, among other things. According to Wördenweber and colleagues (2020), the existence of sources of tension that make change desirable and, from the responsible actors' point of view, necessary, proves advantageous for initiating and implementing innovations. The perception of crises and the appropriate handling of them, can lead organizations to maintaining their competitiveness or networks ensuring their survivability, as well as institutions justifying their existence (Tintelnot et al., 2013).

In order to assess the possibilities and limitations of implementing the DC's task field, it is crucial to interpret its tasks as a particular form of service. That is why the scientific approaches (e.g. Bruhn, 2019), which dealt with the establishment of services as well as the guarantee of the corresponding quality of the service, represent another theoretical frame of reference for the present paper. Service quality can be defined as "[...] the ability of a provider to create the nature of a primarily intangible service requiring customer participation according to customer expectations at a certain level of requirements. It is determined by the sum of the characteristics or features of the service to meet specific requirements" (translation by the authors; Bruhn, 2019; p. 37). The uniqueness of a service offering, as well as a certain level of consistent service quality, is seen as a crucial success factor for a service to hold its own in the market (Gunasekaran et al., 2019).

In order to establish the task field of the DC, the question arises as to what role the DC can play with regard to the innovation process. In this context, it proves useful to link to the findings from innovation research on the theoretical approach of the promoter model (Hauschildt et al., 2016). Accordingly, a prerequisite for innovations to lead to the desired result is that there are actors in the respective organizations or network who take over the role of power promoter, technical promoter, and process promoter. If one of

these promoter roles were not performed, the risk would be comparatively high that the corresponding innovations would not lead to the desired result. The power promoter would be characterized by the fact that he has a high hierarchical position and can provide the necessary financial, temporal and personnel resources for the innovation. In contrast, the specialist promoter has expert knowledge, specialist competencies and "up-to-date knowledge and skills", e.g. to identify opportunities and develop alternatives. The process promoter has knowledge of the organization and may e.g., coordinate the work of the experts. Furthermore, he mediates between the different levels and/or organizational units and promotes or facilitates constructive coope-ration between the power promoter and the specialist promoter. In addition, the DC has the task to identify resistance to a specific innovation project and deal with it in a professional manner, as well as uncover potential and exploit it (Kröll, 2020). This article assumes that the DC takes over the role of process promoter in the context of innovation projects.

RESEARCH QUESTION AND HYPOTHESES

This article addresses the research question of the extent to which the task area of the DC can be successfully implemented in an organization or netw-ork. The focus is on the possible potentials and resistances and how to deal with them in the sense of Kröll's resistance and potential paradigm (Kröll, 2020). On the basis of the initial problem described and the scientific appro-aches explained in the previous chapter, the following hypotheses can be worked out: (1) On the one hand it is known from innovation research that the presence of an acute crisis situation favors change processes. The extent to which a crisis is also necessary for the establishment of the DC should be examined. On the other hand, this would allow potential resistance to the DC to be appropriately addressed and responded to in a suitable form. In this context, the following hypothesis can be put forward: If the collective and individual actors in the organization or a network hold the view that a crisis prevails regarding the digital transformation, then it is more likely that the establishment of the DC task area will succeed. (2) In addition, it's help-ful that there is clarity about the service offering that the DC provides. Based on these considerations, the following second hypothesis can be made: The clearer or the more transparent the DC's new service offering and the higher the quality of this service, the higher will be the probability that the DC's task field will be established. (3) Furthermore, based on the promoter model of innovation research, it is assumed that the DC takes over the role of process promoter, working closely with the power and specialist promoter. On this basis, the third hypothesis can be made: The more unclear the tasks of the DC in the sense of a process promoter are, the greater will be the resistance about establishing the DC's field of activity.

EMPIRICAL APPROACH - RESEARCH METHODOLOGY

To record the possible resistances and potentials that could arise in con-nection with establishing the DC's field of activity, the questionnaire

"Resistances and Potentials in Establishing the Field of Activity of the Digital Coach in Organizations" was developed in several workshops with the project partners and experts of the EU project Digital Coach. A qualitative empirical approach was chosen. The participating persons came from the EU countries Germany, Bulgaria, Hungary, and Greece. In the next step, a quantitative empirical study was conducted using the questionnaire. After a short instruction about the contents and objectives of the questionnaire, the respondents could give their assessment regarding the resistances in the form of 12 items. They were asked to rate the importance of these resistances on a scale of 0–5 (0 "completely unimportant" to 5 "very important"). In a further step, they were asked to rate on a scale of 0-100% the extent to which they would classify the resistances as changeable. Following this, the questionnaire gave them the opportunity to describe possible solutions for dealing with the resistances in the form of open questions and to make suggestions for other possible resistances. A similar approach was also taken with regard to potentials, with four items being asked here. The participants in the empirical study were also able to weight these and assess the possibility of using these potentials. In addition, indications could be given as to how these potentials could be concretely exploited and expanded and whether there were further suggestions as to possible potentials in the establishment of the DC. At the end of the questionnaire, further assessments and information could be provided.

A total of 38 questionnaires were available for evaluation (Bulgaria, n = 11; Hungary, n = 9; Greece, n = 6; Germany n = 12). The evaluation of the survey was carried out with the help of SPSS, whereby sum values, mean values and the respective standard deviations were calculated for all countries, as an entire group, in order to check descriptive group differences among the countries. Participants' responses to the open questions were first collected in terms of content and assigned to categories using the qualitative clustering procedure.

RESULTS OF THE STATISTICAL ANALYSIS

In the following, the results of the evaluation of the questionnaire "Resistances and Potentials in Establishing the Task Field of DC" are described and explained in an overall comparison of the countries. The first step examines the extent to which the resistances rated as particularly important are also seen as changeable. In the next step, the factors that the experts surveyed rated as changeable are discussed. In this context, it can be checked, e.g., whether resistances being regarded as particularly changeable ultimately have only a minor impact on achieving the desired results associated with the establishment of the DC.

With respect to the overall comparison of countries, the first question is which resistors are considered most important (see Table 1): The items with the highest mean values and thus, those with the highest importance are item 3 ("Proposals from the DC are rejected because necessity is unclear"), item 7 ("Dominance of day-to-day business prevents implementation of proposals from the DC") and item 12 ("Proposals from the DC are rejected because of lack of willingness to change"). The items with the lowest mean values, and

thus those with the lowest importance, are item 2 ("Lack of clarity regarding suitable contact persons of the DC"), item 10 ("Difficulty in making the benefits of the DC's work visible") and item 11 ("Difficulty in measuring the success of the DC's work").

With regard to the question of the extent to which the resistances that hinder or impede the establishment of the DC's field of activity can be changed, the following picture emerges (see Table 1): The items with the highest mean values and thus, those with the highest changeability are item 2 ("Lack of clarity regarding appropriate contact persons of the DC"), item 10 ("Proposals from the DC are rejected because necessity is unclear"), and item 11 ("Measuring success of the DC's work difficult"). In contrast, the items with the lowest mean values and therefore the lowest changeability are item 1 ("Experienced managers could make better decisions than the DC"), item 4 ("Support in securing investments regarding digitization") and item 8 ("Short-term orientation prevents long-term organizational development through digitization").

Legend

Item 1: Experienced managers could make better decisions than the DC

Item 2: Lack of clarity regarding suitable contact persons of the DC

Item 3: Proposals from the DC are rejected because the need is unclear

Item 4: Support in securing investments regarding digitization

Item 5: DC's service offering not convincing

Item 6: Relevance of the DC's service offering not discernible

Item 7: Dominance of day-to-day business prevents implementation of DC's proposals

Item 8: Short-term orientation prevents long-term organizational development through digitization

Item 9: Urgency of digital transformation not recognized

Item 10: Difficulties in making the benefits of the DC's work visible

Item 11: Measuring the success of the DC's work is difficult

Item 12: DC proposals are rejected due to lack of willingness to change

In addition, the potentials were also assessed by the experts in terms of their importance and the possibility of using them. The item with the highest importance is item 1 ("Proposals from the DC lead to time and financial

Table 1. Importance and changeability of the resistances in all countries.

Item	Importance				Changeability			
	N	Mean	Standard deviation	Ranking	N	Mean	Standard deviation	Ranking
1	38	3,92	5,45	6	38	2,55	4,13	11
2	38	3,39	4,68	11	37	3,78	6,02	1
3	38	4,24	8,23	1	38	2,97	3,94	5
4	37	3,81	5,59	7	37	2,51	2,50	12
5	38	4,05	7,27	4	38	2,89	3,44	6
6	38	3,95	6,24	5	38	2,97	3,50	4
7	38	4,16	7,37	3	37	2,84	5,04	7
8	38	3,67	5,98	9	38	2,74	4,72	10
9	38	3,76	6,19	8	38	2,80	3,27	8
10	38	3,42	4,84	10	37	3,12	4,42	3
11	38	3,26	3,44	12	37	3,38	4,07	2
12	38	4,21	7,80	2	38	2,79	2,88	9

savings"). Item 3 ("Support in securing investments with regard to digitization") follows in second place. However, the standard deviation for item 1 is significantly higher than for item 3. The item with the lowest mean value and thus the one with the lowest importance is item 4 ("Overcoming the labour shortage"). In terms of the usability of the potential, the picture is as follows: The item with the highest mean value and therefore the one with the highest usefulness (see Table 2) is item 3 ("Support in securing investments with regard to digitization"). The item with the lowest mean value and thus the lowest usefulness, on the other hand, is item 2 ("The DC's area of responsibility is interesting and challenging"). It should be noted that the mean values are not very far apart.

Table 2. Importance and usability of potentials in all countries.

Item	Importance				Usability			
	N	Mean	Standard deviation	Ranking	N	Mean	Standard deviation	Ranking
1	38	4,58	12,13	1	37	3,57	4,72	2
2	38	4,00	5,92	3	36	3,50	4,32	4
3	37	4,35	8,66	2	35	3,54	4,30	1
4	38	3,79	5,55	4	36	3,58	4,36	3

Legend
Item 1: Proposals of the DC lead to time and financial savings
Item 2: The DC's area of responsibility is interesting and challenging
Item 3: Support in securing investments regarding digitization
Item 4: Overcoming the labour shortage

DISCUSSION QUANTITATIVE RESULTS

Based on the three hypotheses identified, the 12 items of the resistance analysis can be assigned to them on a theoretical basis. The following items relate to the hypothesis "Crisis as a prerequisite for innovation": Item 3 ("Proposals from the DC are rejected because the need is unclear"), Item 7 ("Dominance of day-to-day business prevents implementation of proposals from the DC"), Item 8 ("Short-term orientation prevents long-term organizational development through digitization"), Item 9 ("Urgency of digital transformation is not recognized") and Item 12 ("Proposals from the DC are rejected because there is a lack of willingness to change"). In contrast, the following items relate to hypothesis 3 "Clarity of service and service quality": item 4 ("Support in securing investments regarding digitization"), item 5 ("The DC's service offering is not convincing"), item 6 ("Relevance of the DC's service offering not discernible") and item 11 ("Measuring success of the DC's work difficult"). The realization of the promoter approach (hypothesis 2) is addressed by items 1 ("Experienced managers could make better decisions than the DC"), 2 ("Lack of clarity regarding appropriate contacts of the DC"), and 10 ("Difficulties in making the benefits of the DC's work visible").

Based on the results regarding the greatest *resistances* and the possibilities to change them, it can be seen in summary for all countries that the greatest resistance is seen in rejecting the proposals of the DC, as the necessity might be unclear to the organizational members (item 3). However, this

aspect was rated as medium changeability across the entire sample. Thus, it can be concluded that there is a medium likelihood of resolving major resistance through concrete action. The respondents identified another major hurdle in establishing the DC in the fact that the DC's proposals are rejected because there is a lack of willingness to change within the company (item 12). In contrast to the first aspect ("Proposals from the DC are rejected because the need is unclear"), however, the ability to change is rated lower here. In addition, the dominance of day-to-day business and the associated prevention of the implementation of proposals from the DC (item 7) is seen as a key resistance. However, changeability tends to be rated as more difficult here as well which is in line with current research findings (Kiron et al., 2016). As described at the beginning of the chapter, the content of the three most important resistances (items 3, 7, 12) can be closely linked to the construct of crisis or tensions as a prerequisite for innovation (hypothesis 1). The resistances of ambiguity about the necessity of the DC's proposals, the low willingness to change and the dominance of day-to-day business are arguments that can be attributed to the absence of tensions in the organization or in the respective network with regard to digital transformation, since, e.g., according to Wördenweber and colleagues (2020), resistance and, above all, willingness to change often only increase in crisis situations. This is consistent with the hypothesis that the establishment of the DC's area of responsibility can meet with a high level of resistance if, e.g., there is no assessment in the organization that a crisis exists.

In addition, the results with the *highest possibilities for change of the resistances* and their importance can be considered in terms of importance. In this context, it can be seen that the lack of clarity regarding the appropriate contact persons for the DC (rank 1; item 2), the difficulty in measuring the success of the DC (rank 2; item 11) and the difficulties in making the benefits of the DC's work visible (rank 3; item 10) are rated as having good potential for change, but do not appear to be of great importance in terms of their relevance to the success of establishing the DC's field of activity in the sample studied. The lower values for these items relate to topics such as the service provided by the DC (hypothesis 2) and the use of the promoter model (hypothesis 3). This shows overall that the resistances related to the first item are less pronounced, which is why the realization of the DC as a process promoter is quite conceivable. In addition, the resistance to interpreting the performance of the DC's tasks as a service is comparatively low. Consequently, there is some evidence to suggest that the DC's field of activity can be implemented in practice. At this point, it becomes clear that there is a danger of actionism when focusing on those points that are easy to change, but which hardly represent a major obstacle when it comes to establishing the DC's field of activity.

In terms of *potential*, overall, it appears that the greatest potential of the DC is to make suggestions for time and financial savings (Item 1). The sample also rates the usability of this aspect as comparatively high (rank 2). In comparison, relatively low relevance is shown in overcoming labour shortages through the DC (item 4), with this also rated as less useful.

DISCUSSION RESULTS RELATED TO OPEN QUESTIONS

In addition to the quantitative results already presented, the questionnaire on the establishment of the DC was used to obtain additional qualitative data through the open questions. First, the respondents provided information on the possible solutions for dealing with resistance to the establishment of the DC. Overall, the item responses indicated that the most relevant resistance is seen in rejecting the DC proposals because the need for it may be unclear to organizational members. These statements can be assigned to the first hypothesis, as this is about recognizing a crisis as a prerequisite for successful innovation. For example, with regard to the most relevant resistance (item 3), the suggestion was made that in this case it is useful to show the benefits and positive effects by employing the DC. In this context, it was also emphasized that the DC should maintain an understanding approach towards the concerns of the organizational members. The last aspect mentioned can be assigned to the third hypothesis that the DC as a process promoter mediates transparently among the different actors.

In addition, the DC's expertise should be emphasized, thus promoting acceptance by organizational members. One interviewee writes: "Basically, it is important that the DC can market himself in an appropriate way, has technical expertise in order to be able to advise/mediate in a good manner in this regard, and can well demonstrate the significance of digitization and the associated benefits." This quote reflects what could potentially be expected from a DC, which is mainly aimed at the relevance of their service, but also conveys their role as a process promoter. This statement could be related to hypotheses 2 and 3.

Regarding the resistance that there might be ambiguities about the areas of responsibility and contact persons, some respondents suggest conducting a survey within the company in order to additionally get a comprehensive picture of the corporate culture and the internal processes. With regard to these comments of the interviewees, a particular relevance of the third hypothesis can also be established. Clarity about responsibility could mitigate this resistance through a transparent allocation of promoter roles.

If resistance arises due to a lack of knowledge or skills among organizational members, some interviewees expressed that training and workshops could mitigate this to create better understanding and, as a result, increased acceptance.

The interviewees also provide further starting points in which resistance to establishment could occur: On the one hand, the lack of consideration of the corporate culture could lead to difficulties which can also be found in the literature (Z.B. Kiefer et al., 2021; Kiron et al., 2016). On the other hand, any existing technical competence deficits could represent a hurdle.

LIMITATIONS

At this point, the limitations of the present study should also be pointed out. First, it should be noted that the small sample size and the influence of different country cultures could limit the representativeness of the results. In addition, it should be noted that although the interviewees are involved in

the Digital Coach project, they are familiar with the concept of the DC to varying degrees, which could have an impact on the results. It can also be critically noted that group sizes differ among countries. For example, fewer people participated in the survey in Greece than in the other EU countries. Furthermore, it should be mentioned that in the present study no differentiation was made between an internal and external DC, which may also have an influence on the evaluation of the items. In addition, the number of items asked in relation to potentials was much less than the number of items asked in relation to resistances. However, this may also be related to the fact that it is easier for the experts surveyed to name resistances than to point out potentials. At the same time, however, it should be borne in mind that positive reformulations of the resistances can also represent potentials.

OUTLOOK

Based on the results of the present study, implications for further empirical research can be elaborated. For example, the results in the present study suggest that there are differences in assessment across EU countries, possibly due to cultural differences. In further research, it suggests itself to examine whether there are culture-specific differences in the establishment of new services to promote digital transformation by using a larger sample. In addition, the question arises for future studies as to what extent the respective corporate cultures can be captured and taken into account in the process of establishing the DC.

With regard to practical implications, it is important to bear in mind that a central task of the DC is to professionally and promptly uncover the resistance and potential in the introduction of digital solutions in the respective specific context of an organization. Based on the corresponding findings, the DC is challenged to work out appropriate strategies for action in order to deal with the respective resistance appropriately and to exploit the potential in a suitable form (Hirsch-Kreinsen & Ittermann, 2021). In this sense, the DC could use the approach in this article as a guide in his work.

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