

# Digital Transformation in Enterprise Europe Network: Comparative Analysis of Online and Traditional Promotional Events

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**Abstract**— The COVID-19 pandemic forced businesses to adapt to new conditions, affecting technology transfer networks, including the largest, the Enterprise Europe Network (EEN). The study aimed to compare the effectiveness of events organized by the EEN network in online and traditional formats. The analysis utilized data from all promotional events organized by EEN from 2020-2021. Several different measures of effectiveness were adopted, primarily referring to the number of meetings, the number of interested parties, and the number of entities that started cooperation. The results showed that online events were more effective than traditional ones, generating more meetings and signed agreements. These statistically significant results suggest that moving activities to the virtual space can be an effective model for future EEN activities. The research and results contribute significantly to the literature on digitizing business networks, demonstrating that online activities can surpass traditional methods in effectiveness. The results are crucial for network development strategies, indicating that digital tools can replace and even outperform traditional working methods, offering new opportunities for maintaining and developing international business cooperation.

**Keywords**— cooperation network, COVID-19, effectiveness, technology, technology transfer.

## I. INTRODUCTION

The COVID-19 pandemic forced enterprises worldwide to adapt to new, unforeseen economic conditions urgently. The transition to a digital work environment became the standard in

many industries, resulting in profound changes in communication and work organization methods (Duda et al., 2023). The Enterprise Europe Network (EEN), a key network supporting innovation and business development in Europe, quickly shifted to online activities, presenting technical and organizational challenges (Suder et al., 2023). Case studies of other international networks show that rapid adaptation to digital conditions can mitigate short-term crisis effects and bring long-term operational benefits.

However, this type of transformation is challenging. Traditional networking methods, such as trade fairs, conferences, and face-to-face meetings, were valued for their direct impact on building trust and interpersonal relationships, which is difficult to replicate in a virtual environment (Gródek-Szostak, 2023). Research shows that while digital technologies enable broad reach and accessibility, they can also lead to "Zoom fatigue" and decreased interaction effectiveness (Baghiu, 2020; Ardito et al., 2021; Jamal et al., 2021). Furthermore, some studies suggest that moving business network activities online may limit the depth and quality of knowledge exchange, questioning the long-term effectiveness of such solutions.

Given these challenges, a key research question arises: Do the promotional activities and support for entrepreneurs conducted by the Enterprise Europe Network online achieve a level of effectiveness comparable to traditional methods? This article aims to investigate how the pandemic affected the effectiveness of EEN activities, consider the sustainability and



effects of shifting business interactions to the virtual space, and assess whether such changes can form a solid basis for future network development strategies.

The results will allow conclusions to be drawn about the challenges and new opportunities that digitization of business processes brings. This work will contribute to the literature on managing business networks in times of crisis, offering fresh insights into the role of technology in maintaining business operations and fostering innovation.

This article will also provide a glimpse into the future of networks like EEN, evaluating how digital tools can replace or complement traditional working methods. These considerations will be crucial for understanding how organizations can effectively navigate the changing economic landscape and which strategies will best suit the long-term development of international business cooperation.

## II. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

### A. Digitization in the Context of the Covid-19 Pandemic

Digitization as a phenomenon refers to the technical process of converting analog or traditional tasks or processes on paper into digital form, enabling computer infrastructure to assist in accessing, collecting, storing, and transmitting information (Brennen & Kreiss, 2016; Bloomberg, 2018). From a socio-technical perspective, digitization refers to the process of using digitized products or systems to develop new organizational procedures, business models, or commercial offerings (Saarikko, Westergren & Blomquist, 2020, p. 4). The COVID-19 pandemic, as a public health crisis, had a devastating impact on livelihoods and business outcomes, highlighting the vast digital divide between rural and urban areas and between developed and developing economies (Beaunoyer, Dupéré & Guitton, 2020).

During the COVID-19 pandemic, digitization technologies became more critical (Nandi et al., 2020). One consequence of COVID-19 is the accelerated trend towards digitization of business models. Despite the importance and effects of digitization, combined with emerging research on the pandemic's consequential context (Seetharaman, 2020) and the impact of COVID-19, studies have shown that improving business process competencies, new forms of collaboration and customer engagement, and a faster pace of innovation are drivers of digitization (Adomako et al., 2021; Rachinger et al., 2019). During the pandemic, digital technologies offered organizations an efficient mechanism to connect teams and strengthen closer working relationships between headquarters and collaborating and dependent entities (Autio et al., 2021). Enterprises and inter-organizational networks gained new digitization opportunities as communication, information storage, and computer/device costs decreased, while the latter's capabilities increased sharply (Amankwah-Amoah et al., 2021).

The pandemic also revealed the incomplete and limited nature of digitization. These limitations became apparent when individuals or organizations were forced to quickly and completely digitize their work processes in response to the

pandemic (Ramsetty & Adams, 2020). For example, many universities, colleges, and schools transitioned to distance learning almost overnight. Many organizations considered technological pioneers also faced challenges transitioning to a digitized way of working. The sudden transition to digital technology also revealed the limitations of digitization. It highlighted that some digital processes remain deeply embedded in physical processes and are difficult to digitize, if not impossible (Faraj et al., 2021).

### B. Digitization of the EEN Network in Response to the Pandemic

Since the pandemic's beginning (March 2020), EEN network centers have quickly transformed all their organizational work into an online portal. This way, client meetings continued 'in person', albeit remotely. Although online registrations were already part of the network's partner matching activities (technology offer database), the Enterprise Europe Network successfully launched digital matching platforms when events and face-to-face meetings were postponed or canceled. The COVID-19 pandemic accelerated the digitization of learning worldwide. Faced with a surge in demand for online training content, organizations had to adapt and make a digital leap quickly.

At the individual country level, EEN network centers took actions to prepare entrepreneurs to work under crisis conditions, such as developing a series of online training programs focused on topics like finding international business partners and investors, promoting new products in the global market, and preparing international projects. SMEs need new digital tools and strategies to remain flexible and resilient in the new business environment - whether recreating their products and services, transforming customer experiences, or becoming ultra-fast innovators. The pandemic further pushed organizations to transition to digitization faster. The changes will indeed remain from remote teamwork and virtual events to e-commerce. Personal contact naturally works best in business, but the online barrier proved less burdensome than expected. The share of active users of the network's offer increased, meaning businesses the network would not usually reach became more visible, and registrations for upcoming events remained very high.

Digital technologies are programmable, addressable, sensible, communicable, memorable, identifiable, and associable (Yoo, 2010). Therefore, digitization or digital transformation can help the EEN network and enterprises gain and maintain a competitive advantage by improving their flexibility and organizational resilience (Briel et al., 2018) and by enhancing their dynamic capabilities (Sambamurthy et al., 2003; Vial, 2019).

First, digitization helps the network sense environmental changes (Vial, 2019; Yoo, 2010). The massive advantage of digital resources in volume, speed, variety, and value enables firms to collect or search for informational resources in the external environment at low costs (Gandomi & Haider, 2015). Second, digital technologies allowed the EEN network to better leverage opportunities in a crisis. During the COVID-19

outbreak, digitization created many new opportunities (Nambisan et al., 2019), and areas like online education, online work, and unmanned delivery showed great potential. Moreover, the decentralized nature of digital technologies breaks down time and space barriers. It promotes interactions between critical firms and their value co-creators, enhancing their capabilities in open networks (Zeng & Glaister, 2018).

Furthermore, digital technology has changed how new opportunities are exploited more innovatively than previously defined (Nambisan et al., 2019). Finally, digitization enables firms to reconfigure resources to respond to crises. Digitization increases firms' available resources in scope, scale, and flexibility. For example, IT technologies reduce the costs of coordinating activities within firms and promote flexible resource allocation (Kane et al., 2015). Additionally, digital technologies have fundamentally transformed business processes, products, services, and inter-firm relationships, significantly reducing the difficulty and costs of transferring resources (Nambisan et al., 2019).

Thus, the digitization process, which in the case of the EEN network was forced by the COVID-19 pandemic, streamlined the network's operation and enabled greater efficiency of undertaken actions. Accordingly, in this paper, we hypothesize:

Hypothesis: The effectiveness of online promotional events is higher than that of traditional formats.

In this study, we understand effectiveness as the number of meetings held during an event and the number of signed cooperation agreements concerning the number of meetings held.

### III. MATERIALS AND METHODS

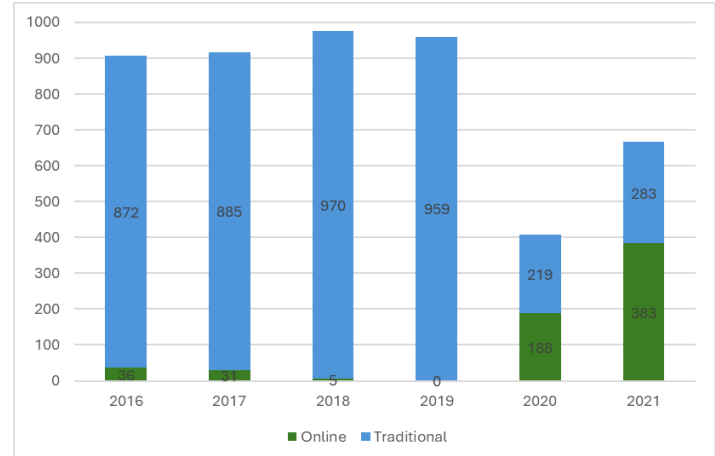
#### A. Sample and Data Collection

Data for the study came from the database of all promotional events organized by the world's largest network supporting technology transfer and business and innovation cooperation, the Enterprise Europe Network (EEN). The Enterprise Europe Network helps businesses implement innovation and enter international markets. It is the world's largest support network for small and medium-sized enterprises (SMEs) with international ambitions. The network operates in over 60 countries worldwide, bringing together 3,000 experts from more than 600 member organizations—all known for excellent business support (Gródek-Szostak et al., 2020). Data access was obtained for 2016-2021, including approximately 5,000 records with detailed information about each event, such as location, exact date, number of participants, etc.

Figure 1 provides information on the number of events organized by the EEN network each year of the considered period. Given the research context, the chart details the number of meetings organized traditionally and online. Two main conclusions can be drawn based on the summary presented in Figure 1. First, the pandemic significantly limited the number of organized events. In 2016-2019, the number of events organized each year exceeded 900. In 2020, the year the COVID-19 crisis erupted, this number halved, while a year

later, the number of events slightly increased to about two-thirds of the pre-pandemic period. Second, it is noticeable that the EEN network's operation before the pandemic was mainly based on face-to-face meetings in traditional formats, and the mode of conducting events online was somewhat incidental.

FIGURE 1. THE NUMBER OF EVENTS ORGANIZED BY THE EEN NETWORK FROM 2016 TO 2021 IS BROKEN DOWN INTO TRADITIONAL AND ONLINE EVENTS.



In 2016, there were 36 online events, accounting for about 4% of all events. In the following years (before the pandemic), the percentage share of online events decreased to 0% in 2019. These data indicate that the EEN network had no intention of developing such events. The pandemic outbreak meant that this was the only possible way to organize meetings in many cases. In the first year of the pandemic, there were 188 online events, accounting for 46.2% of all events. In contrast, the following year, the number of online events more than doubled, and its percentage share of all meetings increased by over 11 percentage points, amounting to 57.5%. Therefore, in studies comparing the effectiveness of traditional and online meetings, only data from 2020 and 2021 were used, i.e., from periods where the number of online meetings was large enough to make the analysis meaningful and justified.

#### B. Procedure for Assessing the Effectiveness of Promotional Events

Since the primary goal of the EEN network's activities is to enable cooperation between entrepreneurs, which is possible during scheduled meetings at events, the measure of effectiveness in this study was the average number of meetings, the average number of entities that expressed interest in cooperation, and the average number of entities that established collaboration. Comparisons of individual quantities were made on data from 2020 and 2021 combined and for each of these years separately. To verify whether the analyzed averages for online and traditional events differ significantly, the independent samples t-test for known standard deviations was used (Stanisz, 2007).

Table 1 presents a numerical summary of the characteristics referring to the abovementioned quantities, which are the basis of the adopted measures of the effectiveness of events organized by the EEN network.

TABLE 1. BASIC CHARACTERISTICS OF EVENTS ORGANIZED BY THE EEN NETWORK IN 2020-2021, BROKEN DOWN BY EVENT TYPE

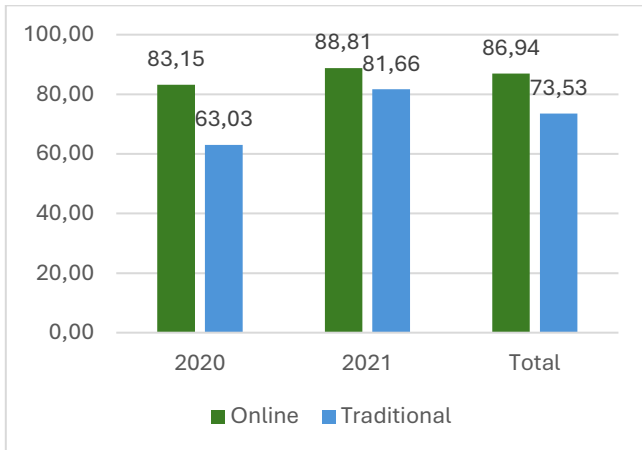
period	Event Type	Number of Events	Total Number of Meetings	Number of Entities Interested in Cooperation	Number of Agreed Cooperations
2020-2021	Online	571	49645	9656	803
	Traditional	502	36914	5505	551
2020	Online	188	15632	4960	390
	Traditional	219	13804	3407	356
2021	Online	383	2610	4696	413
	Traditional	283	1699	2098	195

Preliminary data analysis from the table leads to the conclusion that the values of all characteristics are higher for online events.

#### IV. RESULTS

As mentioned, one expression of event effectiveness is the number of meetings held during organized events and the resulting signed cooperation agreements or willingness to enter into cooperation. The first indicator used to compare event effectiveness was the average number of meetings per event, considering only those events where at least one meeting took place. The results in this area are presented in Figure 2.

FIGURE 2. AVERAGE NUMBER OF MEETINGS PER EVENT

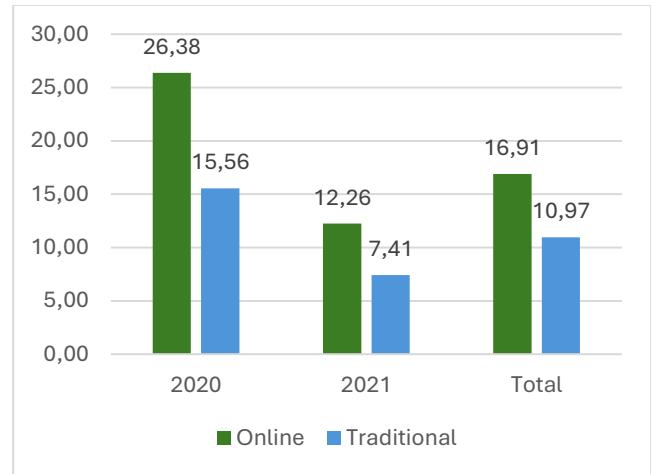


The data in the chart shows that both in 2020 and 2021, the average number of meetings per event was higher for online events. Considering the entire period, this value for online meetings was over 13 more than traditional meetings. However, for 2020, this difference was smaller than for 2021. The indicated differences in the average number of meetings are statistically significant. This means that the average number of meetings held during online events is higher than the number of meetings held during traditional meetings, indicating that, at this research stage, online events are more effective.

The interest in cooperation among participating entities can indicate the success of an event. Therefore, the average number of entities/entrepreneurs interested in cooperation after the

event was compared. Figure 3 presents the average values per event for the considered periods.

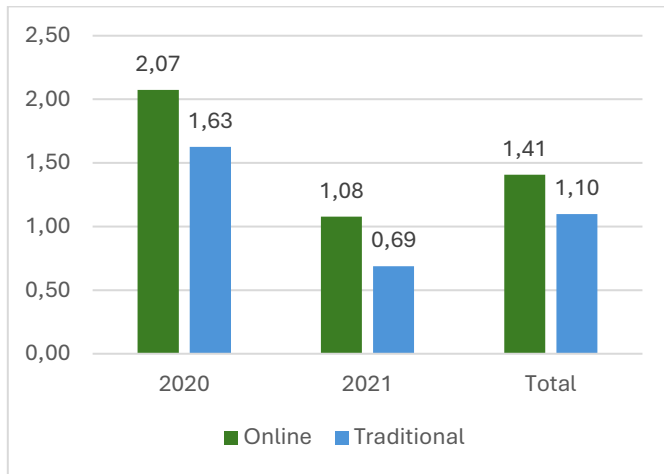
FIGURE 3. THE AVERAGE NUMBER OF ENTITIES INTERESTED IN COOPERATION



The data in the above chart shows that the average number of entities interested in cooperation in the entire study period was almost 17 for online events and slightly over 11 for traditional events. The test results reveal that the difference between these averages is statistically significant. The chart also shows that the value of the considered indicator was significantly higher in 2020 than in 2021. In 2020, an average of about 26 entities expressed interest in cooperation, while in 2021, there were more than half as many. Regardless, the difference in the size of the measured difference between online and traditional events is significant in favor of online events. In 2020, it was over 10, and in 2021, about 5. The differences between the averages in individual years were also statistically significant.

The last indicator compared was the number of signed agreements per event. The comparison for individual years and the whole period is presented in Figure 4. The information in the chart shows that the effectiveness of a promotional event, measured by the average number of established cooperations, was higher for online events in both 2020 and 2021. In 2020, one online meeting resulted in an average of two signed cooperations and a traditional meeting in just over 1.6. The visible difference was significant, meaning the average number of established cooperations during online events was significantly higher than during traditional events. In 2021, the number of agreed cooperations significantly decreased for traditional and online meetings. This number was one less than the previous year for both types of meetings. However, the average value of this indicator was still significantly higher for online events, with a difference of about 0.4. This difference was statistically significant. Considering the data for the entire study period, the value of the analyzed indicator was also significantly higher for online events. Therefore, it can be concluded that in this respect, the effectiveness of online events was higher during the entire period.

FIGURE 4. THE AVERAGE NUMBER OF ENTITIES INTERESTED IN COOPERATION



Thus, the results obtained in the analysis concerning entities considering cooperation and those that established cooperation indicate that the effectiveness of online events was significantly higher than traditional events.

## V. DISCUSSION AND CONCLUSIONS

The COVID-19 pandemic accelerated the digitization process in many industries, forcing organizations to adapt their business models to new realities. The Enterprise Europe Network (EEN) also had to adjust and quickly transitioned to organizing online events. This article analyzed the effectiveness of EEN promotional activities conducted remotely compared to traditional methods using data from 2020-2021.

The research hypothesis assumed that online promotional events are more effective than traditionally conducted. The study results confirmed this hypothesis, showing that online events generated more meetings and signed agreements than traditional meetings.

The research results indicate that the transition of EEN activities to the virtual space brought significant benefits. In 2020-2021, when the number of online events significantly increased, higher effectiveness was observed compared to traditional meetings. In 2020, one online event resulted in an average of two signed agreements, while a traditional meeting generated an average of 1.6 agreements. In 2021, despite a decline in the number of agreed cooperations, online events still outperformed traditional meetings in terms of the number of signed agreements.

Literature on digitization and its impact on organizational effectiveness provides numerous arguments supporting these results. Brennen and Kreiss (2016) and Bloomberg (2018) emphasize that digitization enables more efficient access, collection, and transmission of information, leading to improved operational efficiency. Saarikko, Westergren, and Blomquist (2020) add that digitization allows for the development of new organizational procedures and business models, which can increase organizational flexibility and resilience in times of crisis.

Beaunoyer, Dupéré, and Guitton (2020) highlight the digital divide between rural and urban areas and between developed

and developing economies. Nevertheless, in the context of EEN, moving activities online enabled greater reach and accessibility, increasing the number of active users of the network's offer. Nandi et al. (2020) pointed out that digital technologies became critical during the pandemic, which is also confirmed by the EEN example.

One of the main challenges associated with digitization is "Zoom fatigue" and potential reduction in interaction effectiveness, as Ramsetty and Adams (2020) noted. However, EEN data indicate that online events ensured more meetings and signed agreements despite these challenges. Faraj et al. (2021) emphasize that some digital processes remain deeply embedded in physical processes and are challenging to digitize. Despite the limitations, digitization enabled the continuation of promotional and support activities for entrepreneurs in the EEN context.

Analysis of EEN's effectiveness before and after transitioning to online activities indicates that moving business interactions to the virtual space can form a solid basis for future network development strategies. Digital technology enabled EEN to leverage opportunities in a crisis better, as Nambisan et al. highlighted (2019). The decentralized nature of digital technologies breaks down time and space barriers, promoting interactions between firms and their value co-creators (Zeng & Glaister, 2018).

Moreover, digitization increases firms' available resources in terms of scope, scale, and flexibility, consistent with the research findings of Kane et al. (2015). IT technology reduces the costs of coordinating activities and promotes flexible resource allocation, which can increase organizations' dynamic capabilities (Sambamurthy et al., 2003; Vial, 2019).

In conclusion, the study results indicate that the effectiveness of EEN promotional activities conducted remotely was higher than those conducted traditionally. In the context of the COVID-19 pandemic, digitization proved to be a crucial factor enabling the continuation of activities and support for entrepreneurs. This study contributes to the literature on managing business networks during crises, offering new insights into the role of technology in maintaining business operations and fostering innovation. The results suggest that moving activities to the virtual space can be a crisis solution and an effective model for future EEN activities.

Thus, digitization should become an integral part of business network development strategies. EEN and similar organizations can leverage digital technologies to increase efficiency, flexibility, and adaptability in a dynamic economic environment. In the long term, implementing digital solutions can help deal with crises and contribute to sustainable development and network innovation.

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