Digital Strategic Communication: the Case of the 1st DAPHNE Symposium

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Digitalno strateško komuniciranje: primer 1. simpozija DAPHNE

Povzetek — Strateško komuniciranje je ključni proces, ki pomaga graditi in ohranjati dobre odnose z notranjimi in zunanjimi javnostmi. Strateško komuniciranje vključuje različne vidike komuniciranja, kot so ustvarjanje sporočil, izbira komunikacijskih kanalov in upravljanje odnosov z javnostmi. Pomembno je izbrati pravo vrsto strateškega komuniciranja, saj je za izvajanje strateških komunikacijskih dejavnosti pomembno upoštevati in zagotoviti digitalizacijo. Prispevek predstavlja komunikacijske aktivnosti in kanale digitalnega strateškega komuniciranja (DSC), ki so bili pripravljeni za strateško komuniciranje v sklopu Univerze v Mariboru (UM) v okviru promocije projekta DAPHNE (Integrated Data Analysis Pipelines for Large-Scale Data Management, HPC and Machine Learning) in so bili izvedeni za prvi projektni simpozij na UM. Kanali DSC na UM za projektno skupino UM so tako postali bolj odprti in dodali digitalizirano zmožnost DSC. S tem smo omogočili prepoznavnost in vidnost trenutnih prispevkov in dosežkov članov ekipe UM, kar je pomembno za ugled in podobo celotne ekipe in samega projekta.

Abstract

Strategic communication is a key process that helps build and maintain good relations with internal and external publics. Strategic communication includes various aspects of communication, such as creating messages, choosing communication channels, and managing public relations. It is important to choose the right type of strategic communication, because to implement strategic communication actions, it is important to take into account and provide digitalization. This contribution presents the communication activities and channels of Digital Strategic Communication (DSC), which were prepared for strategic communication within the University of Maribor (UM) part of promoting project DAPHNE (Integrated Data Analysis Pipelines for Large-Scale Data Management, HPC and Machine Learning) and were carried out for the first project symposium at UM. The DSC channels at UM for the UM project team hence became more open and added a digitalized DSC capability. This enabled the identification and visibility of current contributions and the achievements of UM team members, which is important for the reputation and image of the entire team and the project itself.

1 Introduction

The digital industrial revolution, also called Industry 4.0, is strongly changing all areas of business, society, and technical systems [1–7]. The use of modern technologies transforms not only products, services and processes in industry, but also business models, which further means necessary adjustments to all business functions [8], including communication. Strategic communication is a key process that helps organizations build and maintain good relationships with their various target audiences and is extremely important today as it enables organizations to achieve their goals in an effective and targeted manner. It is important that organizations choose the right type of strategic communication and communicate effectively with the target group in order to achieve their goals and do business successfully [9].

Today, for the successful planning, implementation, evaluation and/or study of strategic communication actions, it is also necessary to consider digitalization, which means two-way interactive communication with various stakeholders. In fact, the communication strategy must change and adapt to technical changes and new opportunities brought by digitalization. Digital transformation presents a challenge for strategic communication. As noted by [8], artificial intelligence (AI), cloud platforms, virtual reality (VR), augmented reality (AR), big data and The Internet of Things (IoT) create a rapidly changing environment for organizations, changes in the way of working and managing relationships with stakeholders. In order to fulfill its role in ensuring the long-term success of organizations' strategic communication, it must *continuously adapt to this revolution* [10], as digitalization is a key driver of constant change in the communication profession. New digital technologies are important for the transformation of communication, which adapts to the changing digital environment with the flow of information 24/7. It is necessary to always introduce new technologies to support basic organizational functions and the management and implementation of communication ac-

tivities [11].

The purpose of this contribution is to demonstrate what has been done in the field of DSC on the example of the DAPHNE project team at UM [12–14] or as part of the first project DAPHNE symposium at UM. Our contribution presents an overview of how strategic digital communication can be implemented in the local UM project team, demonstrating dynamics and consequences for strategic communication brought about by digitalization, and further suggestions for improving digital communication strategies in the context of communication. We focused on the development of a digital communication strategy for the implementation and optimization of institutional communication from the point of view of the development of DSC with the aim of reaching the target group, increasing the visibility of the project, improving interaction with stakeholders, and increasing reputation and image. The communication activities important for strategic communication within an example case are discussed and the important issue of initiatives in the regulation of data protection (GDPR) is highlighted in this context of DSC.

In the next section, Digital Strategic Communication (DSC) is presented, providing more related work background. Then, in third section, the method and results of strategic communication is provided on an example, the 1st DAPHNE Symposium. In fourth section, results are highlighted in a short discussion, then in the fifth section, the Conclusion follows with observations and suggestions for further work, then references are listed.

2 Digital Strategic Communication (DSC)

Strategic communication has emerged as a field of communication research in the last decade [15]. It covers all communication essential to the success of anentity. It is the purposeful use of communication by the entity to engage in conversations of strategic importance to its goals. Communication can play a special role in the formulation, revision, presentation, implementation, staging, and operationalization of strategies. While there are many ways to investigate these research entities, strategic communication as a discipline takes the perspective of a central organization/entity and its calculations for achieving specific goals through communication means under conditions of limited resources and uncertainty [16].

Strategic communication is essential for individuals and organizations to achieve their goals and participate in conversations of strategic importance. A strategy is needed to deal with the fact that these decisions involve complexity and uncertainty. Indeed, communication is key to constructing and negotiating meaning as situations evolve and change [17].

Mass media have never in their history had such a strong influence as they do now, mainly due to the emergence of digital technologies [18]. Digital forms of communication began to gradually replace more conventional media [19]. While traditional conceptualizations of strategic communication were often limited to the prototypical

context of one-way communication to external stakeholders, the field has since evolved to encompass more diverse contexts, relationships, methods, and goals [17]. In this context, organizations began to realize the importance of DSC, which refers to the use of digital media for the organization's communication with the public in order to better reach the target group, increase visibility, influence public opinion, improve interaction with users, and increase reputation and image. As an example from ERK 2023, we can mention the few dozen digital media files created during the event time for which the DSC strategy has not yet been provided and after the media requests have been received, there was insufficient work time allocation available among limited administrative staff for serving these requests, which has further motivated us to ensure a systematic, digitalized, and capable DSC strategy in future.

By properly choosing and using the types, forms and techniques of DSC, organizations can improve their reputation and visibility among target groups and establish effective relations with strategic partners and the public. It is also important to understand that strategic communication is not a one-time task, but rather a continuous process that requires constant monitoring and adaptation according to changes in the environment and according to the needs of target groups. Therefore, it is crucial that organizations dedicate enough time and resources to planning and implementing DSC and to monitoring its effects. [9]

Digitalization is changing the environment of strategic communication and challenging it to adapt to these changes by creating a mass of data that is useful for strategic communication and managed by strategic communication, as far as communication listening is concerned, it further offers new opportunities for data accessibility and a significant part of targeted conversations related to communication messaging, and enables the automation of communication based on data [10]. Digital agents can also then be deployed using a tweaked DSC [20].

2.1 DAPHNE (Integrated Data Analysis Pipelines for Large-Scale Data Management, HPC, and Machine Learning)

The international research project DAPHNE (Integrated Data Analysis Pipelines for Large-Scale Data Management, HPC, and Machine Learning), which began in December 2020 under the support of the European Union's Horizon 2020 funding program [14], aims to simplify and seamlessly integrate existing support frameworks for the analysis and management of large amounts of data with Machine Learning (ML) and Artificial Intelligence (AI) systems. As part of the project, comparative measurements are carried out on supercomputers (HPC), which represent one of the fundamental components of the project. With HPC support, the development and actual deployment of integrated pipelines for data analysis is possible [21]. A good HPC infrastructure is extremely important for the project and is also running timely, which enables the development of a next-generation system for the aforementioned integration [22]. Apart from the University of Maribor, the consortium currently includes 13

additional research organizations from Austria, Germany, Switzerland, Greece, Poland and Denmark [12, 14]:

1. KNOW-CENTER GMBH RESEARCH CENTER FOR DATA-DRIVEN BUSINESS & BIG DATA ANALYTICS **(coordinator)**, Austria,
2. AVL LIST GMBH, Austria,
3. DEUTSCHES ZENTRUM FUR LUFT - UND RAUMFAHRT EV, Germany,
4. EIDGENOESSISCHE TECHNISCHE HOCHSCHULE ZUERICH, Switzerland,
5. HASSO-PLATTNER-INSTITUT FUR DIGITAL ENGINEERING GGMBH, Germany,
6. EREVNITIKO PANEPISTIMIAKO INSTITOUTO SYSTIMATON EPIKOINONION KAI YPOLO-GISTON, Greece,
7. INFINEON TECHNOLOGIES AUSTRIA AG, Austria,
8. INTEL TECHNOLOGY POLAND SPOLKA Z OG-RANICZONA ODPOWIEDZIALNOSCIA, Poland,
9. IT-UNIVERSITETET I KOBENHAVN, Denmark,
10. KAI KOMPETENZZENTRUM AUTOMOBIL - UND INDUSTRIEELEKTRONIK GMBH, Austria,
11. TECHNISCHE UNIVERSITAET DRESDEN, Germany,
12. UNIVERZA V MARIBORU, Slovenia,
13. UNIVERSITAT BASEL, Switzerland, and
14. TECHNISCHE UNIVERSITAT BERLIN, Germany.

3 Methods Provided and Results Obtained: 1st DAPHNE Symposium

Methodically, we focused on the development of a digital communication strategy (`DSC-UM-DAPHNE`) for the implementation and optimization of institutional communication from the point of view of the development of DSC with the aim of reaching target groups, increasing the visibility of the project, improving interaction with stakeholders, and increasing reputation and image. Therefore, in January 2024, the first symposium of the DAPHNE project was held in Maribor at the Faculty of Electrical Engineering and Computer Science, where we used added DSC channels and prepared implementations for UM project team, resulting in new DSC capability.

We present how individual types of strategic communication from this strategy `DSC-UM-DAPHNE` are used in practice and which channels were used at the symposium, enumerated from more general platforms like website, e-mail, and social media (1–3) to some more specific types (4–6) like dedicated promotional material, specialized cameras, and above all, data:

1. **Website**; a website is a key channel for DSC, as it is the first point of contact with all interested publics. The project is presented on websites (main website seen in Figure 1) [12, 14, 23], where it displays its services, publishes news and contributions, and thus ensures a higher reputation and image. As noted by [24], the design of websites is necessary for communicating with the target group and also
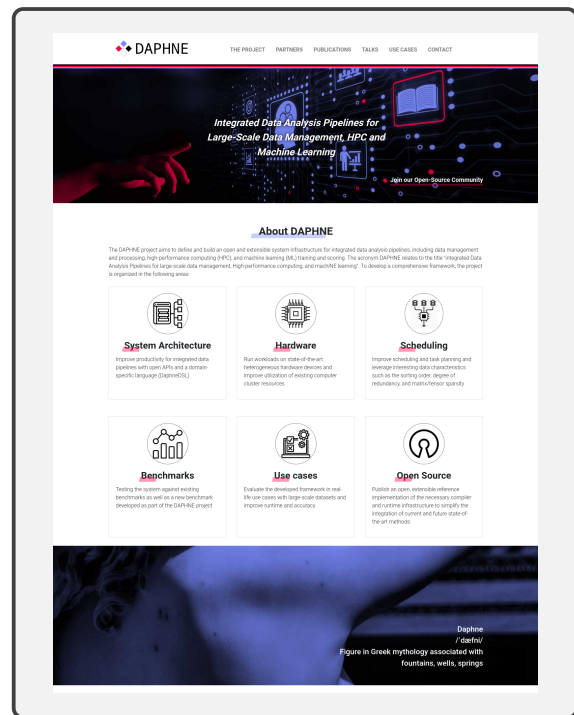

Figure 1: Main website of project DAPHNE prepared [23], publicly accessible at web address: `https://daphne-eu.eu`.

for reputation support, so it must be well designed and prepared with exceptional quality.

2. **E-mail**; as part of the project and symposium, personalized e-mail messages are sent to raise awareness of events, add important announcements, and promote new services or events.
3. **Social media**; as part of the project and symposium in case, social media are and were used, because with the correct use of them, the organization or the project acquires and retains its target group and appeals to them in a way that will meet their needs. According to [18], social media as part of new technologies are becoming more important every day in various industries and sectors. Furthermore, [25] argue that social media and online services with user-generated content (e.g., Twitter, Facebook, Flickr, YouTube) have made a staggering amount of data available online twenty-seven hours a day for relatively low costs. Content and applications are constantly published and modified by all users in a participatory and collaborative manner. DAPHNE operates LinkedIn account `DAPHNE EU Project`, X (Twitter) `@daphne_eu`, and specifically, and GitHub profile for Open-Source Community (`https://github.com/daphne-eu`), with partner-specific data communicated, reposted, and shared through representatives like `@aleszamuda`.
4. **Promotional material**; as promotional material, we chose umbrellas customized with project logo. We decided on design of umbrella models with 130cm format in different colors and some in 117cm and lights; and some in black, where the logo is placed

on the top of the umbrella handle as an interesting, but above all, different and innovative distinction.

Figure 2: Two digital camera systems in DAPHNE.

5. **Digital camera**; as part of the project and symposium, two digital cameras were acquired (see Figure 2) for the preparation of digital material, which enables further digital promotion with the help of visualization, essential for strengthening the reputation and image of the UM project team.
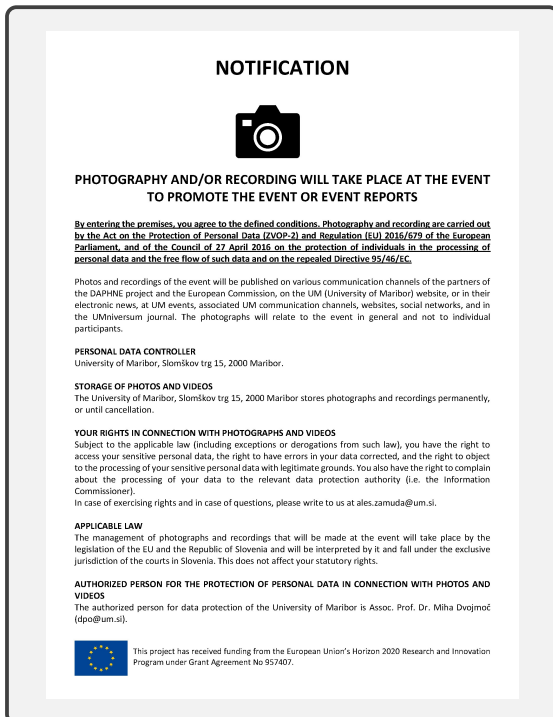
sonal data (General Data Protection Regulation – GDPR) has also been in force in Slovenia. In accordance with the regulation, we also prepared the necessary documentation as part of the symposium, which we used in organizing the event. We prepared the necessary 1) Notification (Figure 3), where it was notified to participants that photography and/or recording will take place at the event for the purpose of promoting the event or reporting on the event; and 2) Consent (Figure 4) to the collection, processing, and publication of personal data, photos, texts, and videos for photography and recording within the DAPHNE project. Both documents were approved by the personal Data Protection Officer (DPO) at the University of Maribor, Prof. Dr. Miha Dvojmoč. The photos were then used for promotion activity at e.g. LinkedIn in post 175448567 3489219714 and X in post 1754485673489219714 (both seen in Figure 5).

4 Results Highlight Discussion

From the designed and implemented strategic communication in DSC for UM project team through the strategy `DSC-UM-DAPHNE` presented in the previous section, here we also highlight some results.

Namely, the opening of the communication channels for UM team has seen a practical increase in communication, where a number of media content could be served through DSC as listed in previous section (activity in Figure 5 with listings on websites and social media) and reaching above thousand digital impressions per post.

Figure 3: Photography and/or recording Notice.

6. **Data protection preparation**; for some time now, a stricter regulation regarding the protection of per-
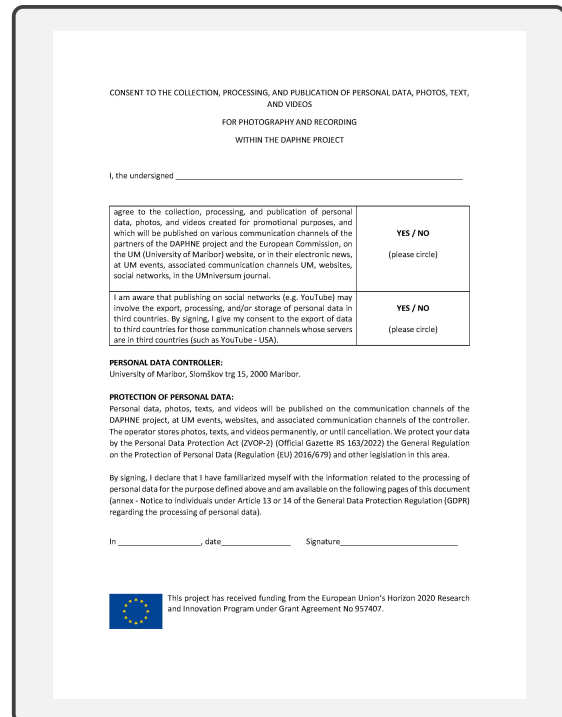

Figure 4: Consent for the collection, processing, and publication of personal data, photos, texts, and videos for photography and recording within the DAPHNE project.
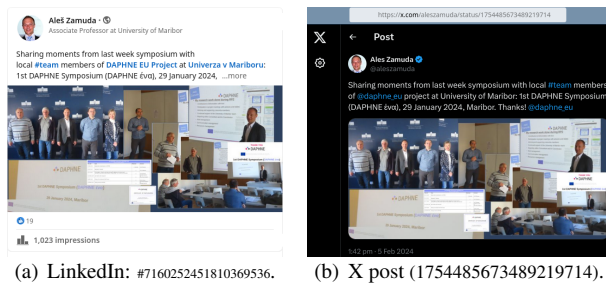
(a) LinkedIn: #7160252451810369536.   (b) X post (1754485673489219714).

Figure 5: Sample communication activity posted 5 February 2024 using a) LinkedIn and b) X.

5 Conclusion

In the paper, we presented Digital Strategic Communication (DSC) in the example case of 1st DAPHNE Symposium, a DSC case that includes various aspects of communication, such as creating messages, preparing promotional material, choosing and opening communication channels, managing public relations, and providing solutions in DSC considering data processing and communication. Through the consistent and upgraded use of DSC (digitalized handling of GDPR, social media, digital cameras, e-mail, website, GitHub, etc.), we have thus achieved greater visibility and promotion of the project, which added a new capability and has a strong impact on the reputation and image of the entire UM team and the project itself. Based on the provided DSC strategy, we see that the DSC channels at UM for the UM project team hence became more open and added a digitalized DSC capability.

As future opportunities, enabled DSC provides us further identification of open challenges ontop DSC. We see the following further activities as an important upgrade and improvement of DSC within the local team, some of which were already created on the basis of our work and involvement in individual activities:

- Development of website applications as part of the promotion of the project (e.g. like DAPHNE Runtime [26]).

- Further communicating code and deployment of computer systems to funders and scientific community, e.g. events [27, 28], and generation of omnimodal media [20, 29, 30].

- Digital advertising in specialized media (use of platforms LinkedIn, X, and GitHub) and using social media analysis tools.

- Online visibility level monitoring of the project, monitoring the opinion of the target group, monitoring the level of publicity, and to obtain feedback about the project from users. Also, to monitor the communicated data on HPC deployments [31].

- Using short videos (see [32]) to promote and raise the image and reputation of the project and its collaborators.

- Use of tools for internal communication (UM FERI currently has e.g. digital telephones, the Microsoft Teams platform, an e-mail server, and the possibility of an internal physical post office and package delivery);

- Preparation of a press conference or (journalistic) statements to raise the visibility and reputation of the project (e.g. examples were [22, 33]).

Future research work includes additional DSC upgrades, especially hybridization, sustainable DSC, and communication of research experiments including distributed pipelines and supercomputing.

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