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MARKETING OF SCIENTIFIC AND RESEARCH ORGANIZATIONS, eISSN 2353-8414, 2020, Vol. 35, Issue 1, p. 57–72

# THE USE OF SOCIAL MEDIA BY TECHNOLOGY TRANSFER OFFICES IN MARKETING COMMUNICATIONS

## WYKORZYSTANIE MEDIÓW SPOŁECZNOŚCIOWYCH PRZEZ CENTRA TRANSFERU TECHNOLOGII W KOMUNIKACJI MARKETINGOWEJ

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DOI: 10.2478/minib-2020-0009

## ABSTRACT

The article presents the issue of marketing communication conducted through social media by CTT, affiliated to The Polish Association of Centers for Technology Transfer (PACTT). The objective of this publication is to assess CTT's use of currently popular social networking sites in the context of communication with Generation Y, i.e. the generation of successors and managers in Polish enterprises. The study was conducted in August 2019 using data collected through critical analysis of secondary sources in the form of websites and social media profiles of all 64 CTTs included in PACTT. The research confirmed that the entities established to find a common ground on communication between science and business, use the opportunities created by social media online communication to a very limited scope.

**Key words: technology transfer offices, marketing communication, website, social media**

## ABSTRAKT

Artykuł prezentuje zagadnienie komunikacji marketingowej prowadzonej za pośrednictwem social mediów przez centra transferu technologii (CTT) zrzeszone w Porozumieniu Akademickich Centrów Transferu Technologii (PACTT). Celem niniejszej publikacji jest ocena stopnia wykorzystania przez CTT najpopularniejszych obecnie serwisów społecznościowych w kontekście komunikacji z pokoleniem Y, czyli generacją sukcesorów i menedżerów w polskich przedsiębiorstwach. Badanie przeprowadzono w sierpniu 2019 r. metodą krytycznej analizy źródeł wtórnych w postaci stron internetowych i profili w mediach społecznościowych wszystkich 64 CTT wchodzących w skład PACTT. Realizacja badań potwierdziła, iż podmioty powołane do tworzenia płaszczyzny porozumienia pomiędzy nauką a biznesem bardzo słabo wykorzystują możliwości, jakie stwarza komunikacja on-line przy wykorzystaniu social mediów.

**Słowa kluczowe: centra transferu technologii, komunikacja marketingowa, strona internetowa, social media**

## Introduction

The development of information technologies and the establishment of a new type of recipient have a significant impact on the development of communication solutions in scientific entities and the CTTs created by them. Entities established, among others, to commercialise knowledge should take into account the generational change that is currently taking place on the market in their communication strategies with stakeholders. The presence among the recipients of generation Y, as well as in the near future the appearance of generation Z, i.e. people born after 1995, forces changes in the ways of communication. Both generations are strongly connected with the social media environment, which is for them a meeting place, a platform for exchanging views, as well as an incubator of attitudes and a way to create their own identity. In virtual reality, opinions about institutions, organizations, universities, brands or working conditions in a given enterprise are shaped. It is worth mentioning that currently the thirty-year-olds are already implementing commercialization processes on the side of enterprises, which is related, among others, to the succession in Polish companies established in the 90s of the last century. Although the basic functions and tasks of marketing communication remain unchanged, the communication channels preferred by the young generation of managers are certainly evolving.

The aim of the article is to evaluate the use of social networking sites by technology transfer centers in Poland as an instrument of marketing communication with potential partners in the process of knowledge commercialization. The choice of this online communication instrument is not accidental and results, first of all, from its strong domination over other components of social media (Wiktor, 2013) and, secondly, from the communication preferences of the generation of managers and owners, which will dominate the company's management boards for the next two decades. It seems that the communication of new entities such as CTT with the "Net Gen" generation (Sandars, Morrison, 2007),[1] using the instruments of the Web 2.0 era, should not have barriers to the relationships between science and business that have been widely described in literature (Sojkin, Michalak, 2016; Matusiak, Guliński, 2010; Kleiber, 2004; Marshal, 2010; Różański, 2013). In both institutions, people from the same generation group are often responsible for marketing communication, i.e. they use the same spectrum of on-line tools.

## Generation Y communication preferences

In national literature, the generation Y is called the generation born between 1983-1997 (Oleszkiewicz, 2013). Other terms for this age group are "Flip-flop and iPod generation", "Net Gen", "Why generation" or "How Cool Brands Stay Hot: Branding to Generations Y and Z" (Bergh, Behrer, 2012).[2] The name "Millennials" is also popular as a reference to the turn of the century or "Network Generation" to highlight their links to Internet communication (Tapscott, 2010).[3]

The strength of this generation is its excellent knowledge of the Internet and new communication technologies, as well as its openness to diversity, ambition and divisibility of attention, allowing them to do several things at once. In addition, Ys can work in a group and have a task-oriented approach to the tasks they perform. They are brave and feisty, but also "clever and bold, they lack patience, humility, respect for the official hierarchy, they are convinced of their own value and knowledge, they are eager to change the standards in force". (Rosa, 2013). This is a group of about 11 million people in Poland and is often

divided into two subgroups — older and younger Millennials (Kuczamer-Kłopotowska, 2016).[4] However, their common feature emphasized by all authors is fluency in using ICT, which is due to the fact that this is the first generation that grew up in the period of widespread use of mobile phones, tablets and the Internet. This fact causes that in the process of communication Ys willingly use communicators or social media. The latter have a significant impact on their attitudes (life, shopping, etc.) and simultaneously implement one of their main life priorities, which is building relations and contacts (Kuczamer-Kłopotowska, 2016). According to E. Gołąb-Andrzejak (2016), the generation described in this way requires the application of a new marketing model in which communication is based on digital media and experience marketing. The situation is similar in the case of Y's as employees who are not satisfied with the tools and forms of work offered by the older generation (X, Baby Boomers). Hence flexible working hours, tasks performed remotely and commonly used online means of communication which are a natural environment for the Millennials. Their communication takes place mainly in virtual space and their presence on the Internet is constant (Bencsik, Horváth-Csikós, Juhász, 2016). Therefore, conducting an effective dialogue with representatives of this generation without the use of Internet channels is a big challenge, especially as studies show that the Y's need for direct contacts is diminishing in favour of virtual contacts, which is related to changes in their neural network (Żylińska, 2013; Castells, 2008). This fact, in turn, has an impact on the problems in interpersonal communication of the face-to-face type, which has been replaced by the interface to interface formula (Wasylewicz, 2016).

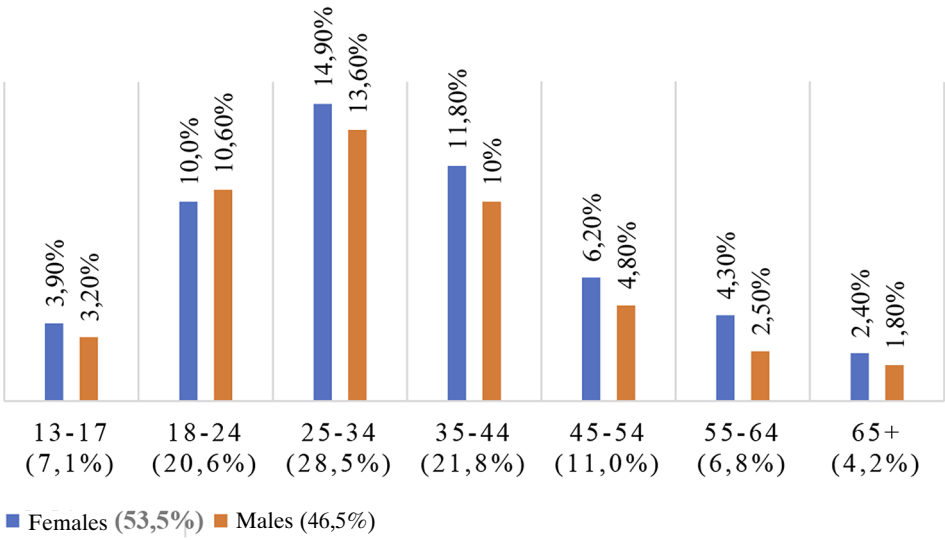
The PricewaterhouseCoopers report (PwC, 2018) clearly states that the majority of the young generation of successors of family businesses in Poland (82% of respondents) consider innovation to be the key to success in continuing business. At the same time, only 15% of them are satisfied with the level of innovativeness of the acquired companies, which means that they will certainly strive for further implementations in which they see competitive advantages. Over 1/3 of respondents (36%)

claim that parents do not fully understand the opportunities and dangers of digital transformation. The results of the report should not be particularly surprising due to the fact that in most cases of succession we are dealing with the generation Y which grew up in the world of new technologies, without which it cannot imagine running a business.

Social networking sites play a special role in Y's on-line communication. Figure 1 shows the users of the most popular social networking site in Poland, by gender and age group (as of the end of August 2019).

The age group dominating among Facebook users is definitely generation Y, which (assuming the generational nomenclature of D. Tapscott) has over 50% share among all users of this website. Active and planned activities of the organization in social media are therefore one of the criteria for its market success. This applies both to commercial entities and non-profit institutions (Peszko, 2016).

**Figure 1. Facebook users at the end of August 2019**




Source: own elaboration.

## The CTT as bridge units functioning as the interface between the science and the business spheres

In the literature on the subject, the definition of the CTTT (EIF, 2005) can often be found as "a dedicated entity that provides services on a permanent and systematic basis to publicly funded or co-funded research organisations in order to commercialise their research results". According to K.B. Matusiak (2011), the main goal of the CTT is 'the organisation of a broad interface between research and industry'. A. Bąkowski (2015) points to the exploitation and commercialisation of knowledge, which is the main objective of establishing the CTT. In turn, M. Mażewska and A. Milczarczyk (2013), the most important areas of CTT activity include activities typical for sales departments in commercial enterprises, such as:

- negotiating the terms of granting the licence or the sale of the research results,
- establishing and formalising contacts between entrepreneurs and scientists,
- promotion of research results, informing business about the offer of a research unit, collecting entrepreneurs' demand for research services,
- analysis of the implementation potential of the results of scientific research and development works,
- research and analysis of the market of products resulting from R&D works,
- representing a scientific institution in the process of commercialisation of R&D results
- sale of patents, know-how, conclusion of licence agreements, etc.

However, according to Article 148 of the "Constitution for science" (2018) CTTs are established "for the purpose of direct commercialisation, consisting in selling or putting into service of the results of scientific research activities or know-how relating to those results, in particular under a licence, hiring or leasing agreement".

English literature (Dees, Szontagh, 2011; Comacchio, Bonesso, Pizzi, 2012) draws attention to the process of decoding (translating) messages expressing the needs of entrepreneurs and encoding them into a language close to the researchers for which the CTT should be responsible. TTOs (technology transfer offices) are considered to be a kind of intermediary,

a boundary spanner in the world of science and business (Phan, Siegel, 2006; Rothaermel, Agung, Jiang, 2007). Very interesting considerations on the functioning of university CTTs are presented by O'Kane and others (2015), according to which these institutions have to struggle with double identity in order to satisfy the management and scientists of the parent entity on one hand, and to be a typically commercial entity on the other.

At the end of 2017, the number of CTT units in Poland amounted to 55, which acconuted for 9.8% all of the Innovation and Entrepreneurship . They were the only ones to record an increase in their number as compared to 2015 (+31%) (Bąkowski, Mażewska, 2018). This means that with the nationwide trend of decreasing of the support infrastructure for enterprises (–3%), the CTTs are gradually increasing their position. In December 2015, the Agreement on Academic Technology Transfer Centres (PACTT) was established, which on the day of conducting research had 64 entities. The aim of the association is, among others, cooperation in the field of commercialization of research results. The main idea of the organization is to implement the one-stop-shop postulate, i.e. to deliver to entrepreneurs through a dedicated broker, aggregated with over 60 intellectual property institutions. PACTT as a national organization is a member of the international association The Association of European Science and Technology Transfer Professionals (ASTP) based in the Netherlands, whose mission focuses on promoting and professionalizing the practice of knowledge transfer.

The efficient functioning of the PACTT and the implementation of statutory tasks depends, among other things, on effective communication with the external environment, for which the association has an aggregated offer of knowledge transfer.

## Research methodology

The aim of the research was to gain knowledge about the extent to which CTTs that are members of PACTT use the most popular social networking sites for marketing communication with the external environment, in the context of the communication preferences of the Y generation. The research was conducted with the use of the critical analysis of secondary sources in the form of websites and profiles in

social media of all 64 CTTs. Additionally, the main page and e-profile of the PACTT association were subjected to the study. The structure of the surveyed entities is presented in Table 1.

**Table 1. Structure of the surveyed CTTS**

| No. | Type of university | Number of entities surveyed | % of the population surveyed |
|---|---|---|---|
| 1. | Universities | 18 | 28 |
| 2. | Technical universities | 19 | 29 |
| 3. | Agricultural universities | 5 | 8 |
| 4. | Medical universities | 8 | 13 |
| 5. | Economic universities | 3 | 5 |
| 6. | Non-state universities | 3 | 5 |
| 7. | PAN | 4 | 6 |
| 8. | PWSZ | 2 | 3 |
| 9. | Institutes | 2 | 3 |
| **10.** | **Total** | **64** | **100** |

Source: own elaboration.

The websites of the entities were tested for compliance with the RWD[5] standard, i.e. the possibility of navigation and correct reading on mobile devices. In the case of social networking sites, the basic criterion was used, which is the number of people observing the profile or the number of subscriptions. Additionally, in the case of Facebook, the number of likes and frequency of posting was investigated.[6] All websites where the surveyed entities had a profile were selected for analysis. These were:

- Facebook,
- LinkedIn,
- Twitter,
- YouTube,
- Pinterest.

## Test results

On the basis of the analysis of websites, it was found that 3 out of 64 units do not have their own website or a bookmark on the homepage of

a higher education institution. Then, a test for compliance of websites with the RWD standard was conducted. Results in Table 2.

**Table 2. Results of the CTT website responsiveness test**

| RWD test results | Number of entities | % of the population having a website |
|---|---|---|
| Responsive website for all resources | 3 | 5 |
| Website readable on mobile devices with errors in less than 15 resources | 22 | 36 |
| A website readable on mobile devices with errors in resources of 16–30 | 13 | 21 |
| Website read on mobile devices with errors in more than 31 resources | 11 | 18 |
| Non-responsive website | 12 | 20 |
| **Total** | **61** | **100** |

Source: own elaboration.

75% of the surveyed CTT population has a website that can be read on mobile devices, but not all its resources, but not all its resources can be properly decoded by the recipient by the recipient due to errors. In the case of 12 units (20%), an attempt to navigate on a smartphone or tablet through their website will cause the recipient a lot of problems with reading text that does not automatically adapt to the size of the browser window. Only in 3 cases, which is only 5% of all PACTT affiliates, the website was fully responsive. The PACTT website, on the other hand, showed an error in only 1 resource, which can be considered a relative success.

The results of a survey of CTT profiles in social media showed that only 25 entities (39.6%) have their own fanpage on one of the websites. 4 entities support accounts in 3 different social media, and 4 CTTs have a profile on 2 portals. Definitely the dominant website is Facebook, where 24 entities have their accounts. The second place was taken by YouTube and the third by Twitter, with 6 and 5 CTT accounts respectively. 2 accounts are supported by LinkedIn, and 1 Pinterest account (Table 3).

**Table 3. Profiles on CTT social networking sites**

| Social network | Number of CTTs who have an account | % of the surveyed population (25 CTT that have a fanpage) |
|---|---|---|
| Facebook | 24 | 96 |
| YouTube | 6 | 24 |
| Twitter | 5 | 20 |
| LinkedIn | 2 | 8 |
| Pinterest | 1 | 4 |

Source: own elaboration.

The study also showed that, with the exception of one CTT, all non-Facebook accounts also have their own profile on the portal created by Mark Zuckerberg. This shows its absolute domination among the surveyed population of Polish CTTs, which is confirmed by the largest number of followers, which in the case of the Centre for Innovation and Technology Transfer Management at the Warsaw University of Technology exceeds 3.5 thousand (Table 4). For comparison, the profile of the same entity (also the highest number of all CTT account holders) on Twitter is observed only by 569 people. The highest number of subscriptions on YouTube is 43, which was obtained by the Technology Transfer Centre, the Cracow University of Technology. Pinterest and LinkedIn are the least popular among PACTT members. While in the case of the first service, which is also an Internet search engine, it is fully justified, in the case of the LinkedIn portal it may be surprising due to the community of professionals from equal business and scientific fields, which is its user. It is also noteworthy that none of the surveyed organizations had an Instagram account, which is now the third largest in the world in terms of users.

Table 4 shows the size of one of the most important parameters used to determine the effectiveness of a profile on social networking sites. The number of followers is at the same time the basis for the calculation of the currently very popular Engagement Rate,[7] which describes all kinds of interactions that users leave behind on the profile of the unit.

**Table 4. Number of users of CTT profiles in social media**

| Number of followers/subscriptions | Facebook | LinkedIn | Twitter | YouTube | Pinterest |
|---|---|---|---|---|---|
| Up to 100 | 6 | | 2 | 6 | |
| 101–200 | 2 | 1 | 2 | | 1 |
| 201–500 | 7 | | | | |
| 501–1000 | 4 | 1 | 1 | | |
| 1001–2000 | 4 | | | | |
| Over 2000 | 1 | | | | |
| **Total** | **24** | **2** | **5** | **6** | **1** |

Source: own elaboration.

The analysis shows that only 1 out of 25 CTTTs with a profile on social networking sites exceeded the level of 2,000 followers. It is the Innovation and Technology Transfer Management Centre of the Warsaw University of Technology (CZIiTT PW) with a Facebook account. However, in most cases the number of followers/subscribers does not exceed 500 people, which after deducting the CTT employees, who usually observe the profile of the institution in which they work, is a very low result. For comparison, the institutional profiles of each university within which the CTT operates are observed by a few to tens of thousands of people. On the other hand, the PACTT as an association has its own fanpage only in the LinkedIn service, with 615 followers. It seems that one of the reasons for the low interest in CTT profiles in social media may be the frequency of publishing information. The research shows that in most cases the last information posted was older than 2 weeks (Table 5). In extreme cases, the last posts from 2017 were posted on the CTT profiles.

A special role in the ranking is played by YouTube, where the youngest video was from 4 months ago. Data from Table 5 confirm once again the dominant position of Facebook, where half of the profiles are updated every few days. It is also worth noting that the leader in the use of social media, or CZIiTT PW, updates its profile on Facebook on average every 2 days, and often it also takes place every day. The institution often posts several posts on the same day informing about the

events in its life. On the other hand, the PACTT places information on its profile on the LinkedIn website on average once a month.

**Table 5. Frequency of confusion of information by the CTT**

| Time of the last piece of information | Facebook | LinkedIn | Twitter | YouTube | Pinterest |
|---|---|---|---|---|---|
| Up to 2 weeks | 12 | 1 | 2 | | |
| Over 2 weeks | 12 | | 3 | 6 | 1 |

Source: own elaboration.

An element of the profile, which, similarly to the number of followers, influences the size of the engagement indicator, is the liking of the website. The specificity of Facebook implies observing the website when it is liked, which means that clicking the "Like" button automatically results in the appearance of materials posted by the CTT in the news of the person who expressed his or her approval for the website (not all users know about it). However, in the case of a deliberate observation of the profile, the number of likes does not increase. Hence, the statistics of websites show a difference between the number of followers, of which there are usually more, and the number of "likes". In the studied group of CTTTs with a Facebook profile, the difference calculated as the arithmetic mean of 24 profiles amounted to 8.5%, which means that over 1,000 people deliberately added the CTT fanpage to the observed pages. The biggest difference of 249 people was recorded in the case of the CZIiTT website.

It is also worth mentioning that according to recent trends in social media, Facebook and Instagram (tested in some countries) plans to hide the number of "likes" and "dislikes" under posts. According to this concept, the whole statistic would be available only to the owner of the website. The main goal of such a policy is to cause more activity among account holders who do not achieve a relatively high number of "likes" and avoid subsequent publications, which gives rise to discouragement and frustration.

## Summary

The CTTs affiliated to the PACTT at a very low level use the opportunities for communication offered by social networking sites. Practically, apart from the leader (CZIiTT PW), who gathered more than 3.5 thousand community on Facebook and more than 0.5 thousand on Twitter, there are no institutions that can effectively communicate through social networking sites. Publishing of occasional posts or presenting a video from a few years ago and linking the profile on the website is a mistake much bigger than the lack of fanpage in social media. An unsupported and forgotten profile with Christmas greetings from six months ago (survey data) is simply a laugh and embarrassment to visitors. This is especially important for the younger generations, i.e. potential CTT co-workers, for whom the one-day information is often outdated. It should be added here, however, that due to the mission and the available resources, the CTT should be the initiator of the communication processes. Therefore, they bear the burden of selecting appropriate communication tools, communication channels and forms of communication, as well as collecting and aggregating information on the needs of innovative entrepreneurs. In order to fulfil the mission for which they have been established, these institutions must conduct communication in channels that are used by potential recipients. In the case of generation Y, as well as in the near future, generation Z social media are one of the options, but one that cannot be ignored. For both generations, social media are a place for obtaining information and conducting conversations. Hence, marketing communication understood as a dialogue between an organisation and other entities in its environment (Taranko, 2015) is not only a literary definition, but becomes a fact. This is particularly important for CTTs, which, according to their creators, should be a real platform for communication between the worlds of business and science.

## Footnotes

[1] According to the authors, this is a group of young people born between 1982 and 1991, who grew up in an environment dominated by computer technologies.
[2] According to these authors, the Y generation is made up of people born between 1980 and 1996.
[3] The author considers the Y generation to be the generation of people born in 1977–1997.
[4] According to the author, those born between 1990 and 2000 are younger Millennials, those born between 1977 and 1989 are older Millennials.
[5] The test was performed using Google, mobile-friendly, https://search.google.com/test/mobile-friendly, access date 20.08.2019.
[6] It was examined whether the last post was placed during the 2 weeks preceding the analysis.
[7] The Engagement Rate is calculated as the quotient of the sum of likes, appearances and comments to the number of followers.

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