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MOBILE TECHNOLOGIES AS INFRASTRUCTURAL SUPPORT FOR COMPANY INTERNAL COMMUNICATION PROCESSES

Introduction

Globalization, intense competition, and dynamics of changes in economic phenomena and processes have forced companies to explore new ways of improving their operational capacity, with the view of profit maximization. Company internal communication is one of the more promising areas of such improvement, offering potential effectiveness boost if done in a correct, efficient and consistent manner.

This paper discusses mobile technologies as an important factor of potential improvement and enhancement of internal communication processes. Barriers to integration of mobile technologies with internal communication processes are also discussed, together with postulated solutions aimed at minimizing such barriers.

The nature and significance of internal communication processes in companies

Company information systems are based on communication processes. Communication is, therefore, a prerequisite for company functioning, ensuring proper task completion on both operating and management level.

Communication, in general context, is defined as a bilateral process by which information is exchanged between the sender and the recipient through a common system of symbols and channels of exchange, as a means of connecting people [Stan09, p. 44]. In the context of company operation, communication

is defined as a process by which proper contact is established between its various organizational structures, in the form of intentional transfer of information.

Communication process, as stated above, involves and integrates two parties [Poto08, p. 14]:

–   the sender – the party that initiates the process by formulating a message in a common coding system and transmitting it with intent and through selected communication channels to the recipient,

–   the recipient – the addressee of such message, perceiving the coded message through his or her senses.

Furthermore, the process under study incorporates the following elements [Poto08, p. 14]:

–   the message – a batch of information presented in an encoded form,

–   the code – a distinct system of signs, shared between both parties, and ensuring correct interpretation of the message (language, together with associated logical, esthetic and social codes),

–   the channel – the form of contact between communicating parties (oral, written, visual),

–   the information gap – a gap representing the difference between informational content required by the recipient and the actual content presented to him or her,

–   interference – disruptions of psychological, material, energetic, external or organizational nature, that affect the process,

–   feedback – reversal of the communication process, representing the recipient's reaction to the sender's message,

–   frame of reference – situational context that places both parties of the process in a definite spatial and temporal frame.

The most fundamental task of company internal communication is to provide complete information on company present situation and future plans. In addition, internal communication is an important instrument for shaping company organizational culture and for preventing internal crises. It is also closely correlated with external communication, serving as a platform for negotiating its content. The use of communication influences company image. The way organization members evaluate their company strongly influences their attitudes. A favorable opinion about company helps the employees identify with it. Moreover, good knowledge of company helps them formulate their own opinion on company functioning and induces active attitudes and pursuits [Biel06].

Proper and effective flow of internal communication – both between employees and between management and subordinates – is of fundamental importance for company operation and, as such, strongly affects company financial effectiveness and employee involvement. According to Watson Wyatt report of 2010, companies that place considerable weight on internal communication offer, on average, 47% more return on investment to their shareholders [Jabl11]. In the light of the above, internal communication is an extremely important aspect of economic activities, but – at the same time – a compound phenomenon, closely related to the arduous task of shaping human behavior using dedicated sociological and psychological techniques in many areas of communication.

Areas of company internal communication

The complexity of company internal communication processes is a result of many factors. The most significant factors at play are: the redundancy of communication roles depending on communication context and the variety of technological aspects that shape modern work environment. However, any attempt at formalizing the processes requires relative structuring of the two, e.g. by adopting formal typologies. This paper focuses on two such topologies, construed on the basis of communication direction and communication context, respectively.

Thus, identification of basic areas of company internal communication based on direction of communication allows to distinguish between vertical (up or down the organization's chain of command) and horizontal communication.

Upward vertical communication covers the whole area of communication with superiors, regardless of the actual distance between the respective levels of organizational structure, and may apply both to information transfer and relation building [Cybu11]. Information transferred in this area typically addresses current problems and postulated changes or improvements.

Downward vertical communication covers the area of bilateral contact between superiors and subordinates and, similarly to the previous area, involves information transfer and relation building, but – in this context – strictly from the superior's viewpoint [Cybu11]. It may take on the form of company publications, billboards, intranet, e-mails and memorandums. Information passed through these channels should be significant, reliable, topical, comprehensible and adjusted to recipients' capabilities [Roga09]. It must be noted that messages transmitted in this area should be carefully selected and presented in proper frame of time and space,

so that they are properly assimilated and relevant to recipients' range of duties (or useful in shaping recipients' role in the organization).

Horizontal communication, on the other hand, involves transfer of information between employees on the same level of organizational structure or between members of *ad hoc* task groups and project teams. Communication in this area typically places the emphasis on coordination of activities and distribution of duties among team members, reporting of partial results, as well as reporting and solving problems observed in the course of cooperation.

Another noteworthy division of communication areas is the distinction between direct and indirect communication as areas related to the context of the communication process. Direct communication entails personal contact between sender and recipient, in the form of conversations, discussions, meetings, councils, interviews, etc. [Szym04, p. 27], while indirect communication employs additional means of communication to facilitate such contact. The most important inconvenience of indirect communication is the propensity for delays and interferences which may have a negative effect on the quality of communication process. Similarly, direct communication is burdened with the inconvenience of forcing both parties to be present in the same frame of time and space. These barriers to communication present a great challenge for persons and departments responsible for human relations and communication processes in companies.

The role of mobile technologies in improving company internal communication processes

Company internal communication processes should be subject to continuous improvement, due to high dynamics of modern business environment, increased market competition and perfect market transparency in respect to activities undertaken by other economic entities. The above factors force companies to increase their staff flexibility and to respond promptly to changes in market environment. Growing competences of company personnel clearly support these trends, but they should be supplemented by communication and information technologies to eliminate or greatly reduce barriers to communication, particularly in the context of time and space constraints. New technologies offer vast selection of communication solutions, largely eliminating the problems of geographic distance and low quality of transmission. Modern IT systems make good use of intranet and corporate portals. Basic communication services, such as telephony and the Internet, are also used more effectively. However, company in-

ternal communication remains surprisingly resilient to mobile technologies, despite its vast potential of improving communication processes in companies. Mobile technologies offer companies more liberty in dealing with communication problems, by facilitating access to key information and improving contact with mobile staff. In effect, company decision-making capabilities and operational effectiveness are greatly improved. Companies operating under competitive pressure can use modern technologies to improve their flexibility in response to market changes. In fact, mobile technologies are reported to have a notable effect on company competitiveness [GuSS09, pp. 11-23]. It must be noted, however, that application of modern technologies (in this case – mobile technologies) in the context of outdated management processes can only have a detrimental effect upon company operation [HaCh96]. Therefore, upgrading of technological infrastructure should always be accompanied by organizational improvements.

Certain features of mobile technologies make them particularly useful in the process of improving company internal communication [KuŁy11]. These include:

- portability – reduced dimensions coupled with relatively high computing power,
- multifunctionality, multimediality and interactivity – combining several functions in one device offers cost reduction with increased functionality and business utility,
- globalization of communication – communication and information exchange are largely independent of geographic constrains,
- universality – rapid spread of technologies, coupled with rapid dissemination of new services among users, creates new standards of the trade,
- modality – potential for upgrading and adding new functionality through additional modules prolongs the lifetime of mobile devices.

Tackling the problem of adaptability of mobile technologies in the area of communication should be based on the principal observation that mobile devices are already gaining dominance in the sphere under study. The Office of Electronic Communications in Poland reports that mobile technologies are, by far, the most popular form of communication in companies – in 2011, employees of 73.2% of Polish companies under study used this technology on daily basis, compared to 56.3% of companies using fixed telephony and 48.4% reporting the use of e-mail communication. In addition, one in six companies (15.6%) used instant messaging and 7.2% reported the use of Internet/intranet VoIP communication [UKEl11].

Mobile technologies offer support for all areas of company internal communication (downward and upward vertical, as well as horizontal communication), and in many forms. The most universal technology at present – that of mobile telephony – can be used both in the form of voice communication and text messaging (SMS and multimedia MMS). Mobile Internet access from mobile devices can also add VoIP functionality to the list. Some modern mobile devices offer also videoconferencing capabilities via built-in front-facing camera. A new class of mobile devices – smartphones – powered by advanced mobile operating systems, create a modern communication environment through the use of multifunctional applets and clients, including communication software (Skype, mobile versions of popular social media).

Communication functionality can also be improved through the use of alphanumerical, two-dimensional QR codes (*Quick Response*). By scanning a QR code, mobile users can gain instant access to dedicated information resources. NFC technology (*Near Field Communication*) opens up the potential for exchanging information between mobile devices via proximity contact. Geolocalization technologies are another important feature of mobile devices, offering enhanced communication context through automatic recognition of geographic location of devices.

Mobile technologies are also an important element of large communication systems for companies (*Unified Communications*), i.e. solutions that integrate all available telecommunications channels to facilitate contact and cooperation between employees regardless of their physical location [Neti13]. OpenTouch Conversation app, available on iPad devices, is a good example of a Unified Communications solution for mobile devices, with support for the following functions [Alca12]:

– one client and a single interface for all functions: videoconferencing, telephony, VoIP, chat sessions, online presentations and document sharing,
– full support for transfer of active communications sessions between multiple devices,
– intuitive interface, divided into 3 main areas: *Conversation Wall* (history of interactions with support for initiating new contacts), *List of Favourities* (a dedicated area for placing key contacts and selecting forms of interaction with them), and *Stage* (where the current interaction takes place),
– easy access to corporate address list, with option to initiate contact with selected users,
– comments and *whiteboarding* (a shared noticeboard) for teamworking,

– opening additional forms of communication during an active communication session,
– redirecting and answering communication requests from other devices,
– full management of user status and communication routing principles,
– setting up ad-hoc conferencing sessions and populating the list of participants via drag-and-drop functionality,
– unified e-mail client with full access to history and management of messages.

SnappComms suite is another example of a unified mobile communications solution for companies, with following functionality [PRWe12]:

– emergency alerting – messages requiring prompt reaction are transmitted (pushed) to all devices associated with a given user until acknowledged,
– full support for message confirmation and scheduled intervals,
– scheduled transmission and automatic expiry of out-of-date messages based on user-defined criteria for easy filtering of relevant communication,
– reporting of 'read' status per message,
– gamification elements – quizzes, surveys, apps and video feed to mobile devices,
– reporting of gamification results.

The above solutions significantly improve productivity of mobile employees by providing a broad spectrum of communication forms tailored to specific needs and contexts. Functionality of such solutions shows that communication processes in companies can be addressed in an integrated and effective manner.

Barriers to integration of mobile technologies with company internal communication processes and postulated remedies

Introduction of modern technologies in companies is but one of many elements that influence their effectiveness in the era of mobile communication. However, as attested by the practice of economic activities, mobile technologies are typically approached in the context of elementary, short-term utility, with no regard for their long-term benefits and the wide context of application. Companies often fall prey to 'technological trap' of upgrading technologies for the sake of novelty and instant appeal, concentrating on attractive look, functionality and accessibility of particular solutions, instead of focusing on unification of goals from the organizational viewpoint. Such approach bears a lot of problems, the most important being [Aror12]:

   – limited effectiveness of IT system redesign attempts addressed to mobile
     employees; time pressure, short attention span and other needs specific
     to mobile employees require a distinct design approach, much different
     from solutions tailored for office use,
   – ineffective use of resources, resulting from the tendency to produce mo-
     bile applications (or other mobile solutions) for each and every task at
     hand – even if such detailed solutions bring tangible improvement in
     terms of company effectiveness, the strain of design and implementation
     largely overshadows their potential benefits.

To sum up the above deliberations, it must be noted that the most viable ap-
proach in this context is to start with a precise analysis of objectives, followed by de-
termination of best technological solutions to meet the required goals, as opposed to
the common practice of introducing new technologies for every possible use, with
no regard for measurable economic and organizational benefits of the change.

Thus, any initiative involving mobile technologies and their application in
company internal communication processes should be preceded by careful anal-
ysis of the following aspects [Aror12]:

1. What business benefits are expected in relation to the change being
   introduced?
2. What is the principal objective of communication (informing employees,
   disseminating important task-related information, educating, promoting
   bilateral contact, providing instruments for effective organization of
   work schedule and tasks)?
3. What form of mobile technology is most suitable for the purpose de-
   fined above?

Another important element of the process of building mobile communica-
tion in companies is the analysis of current use of mobile technologies. This may
take the form of an audit of opinions from all departments directly involved in
design of company communication environment. Such an audit should address
the following questions [Holt12]:

1. What forms of mobile communication are used for professional purposes
   by employees on all levels of company organization?
2. What forms and patterns of mobile communication are used by employ-
   ees for individual purposes, outside the scope of their professional du-
   ties; is it possible to translate these behaviors into professional setting as
   means of improving company effectiveness?

3. Are the employees ready and willing to utilize mobile technologies for professional purposes, such as checking company news and information, and what factors influence their propensity to use mobile communication in professional context?

4. Are the employees aware of company tools, resources and policies in respect to the use of mobile technologies?

5. Are the employees ready to adopt and embrace new technologies? What can be done to improve their readiness and acceptance in this respect? What can be done to promote the use of new technologies on daily basis?

6. Are the employees willing to participate in design and development of mobile solutions?

7. What information should be passed on to other departments (safety measures)? Are the employees sufficiently informed on all matters related to intellectual property rights and responsible use of new technologies?

An audit of opinions, coupled with the aforementioned strategic approach and the focus on utility of mobile solutions, will provide good basis for proper design of internal communication processes in companies. In addition, the resultant decisions will satisfy the safety requirements and promote responsibility among employees – a particularly important aspect in the face of fierce competition and non-ethical practice of industrial intelligence.

Let us reiterate that even the most advanced instruments should be put in the proper context of communication strategy across company. The main focus should be on satisfying the principal objectives of communication processes. Any other tasks and objectives, such as the choice of particular functionalities, technologies or applications should be subordinated to the main strategic considerations. Only this approach will warrant economic benefit in long-term perspective.

Conclusion

Summing up the above deliberations, it must be noted that mobile communication based on the use of modern mobile technologies is an extremely important factor in design of company internal communication policy. On the one hand, it improves the relevance and topicality of the communicated content, by offering conditions for prompt reaction to current issues, problems and market opportunities. Moreover, proper design of mobile communication processes improves employee integration and involvement in company matters. To be effective, however, mobile technologies should be employed based on predefined objectives of intra-

organizational communication processes, and the area of internal communication should be subject to audit analysis to make sure that mobile solutions are integrated with company global strategy of business objectives.

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TECHNOLOGIE MOBILNE JAKO INFRASTRUKTURALNE WSPARCIE PROCESÓW KOMUNIKACJI WEWNĘTRZNEJ W PRZEDSIĘBIORSTWIE

Streszczenie

Czynniki wewnętrzne odgrywają coraz bardziej istotną rolę w kształtowaniu strategii biznesowych przez przedsiębiorstwa, dla których kluczowym obszarem skutecznego funkcjonowania na rynku staje się aktywna i wydajna komunikacja

wewnętrzna. W artykule podjęto próbę ukazania jednej z dróg doskonalenia procesów komunikacji wewnętrznej poprzez zastosowanie mechanizmów komunikacji zdalnej oraz geolokalizacji, możliwych do uzyskania dzięki wykorzystaniu technologii mobilnych.

W artykule przedstawiono naturę i znaczenie procesów komunikacji wewnętrznej, jak również scharakteryzowano podstawowe jej obszary. Następnie dokonano analizy wpływu technologii mobilnych na procesy komunikacji wewnętrznej i wskazano przykłady ich doskonalenia z wykorzystaniem omawianych technologii. Przedstawiono również bariery integracji technologii mobilnych i procesów komunikacji wewnętrznej, a także zaproponowano rozwiązania ukierunkowane na minimalizację tych barier.