23 INNOVATIONS IN DIGITAL COMMUNICATION

Move beyond speculations and master mediated communication

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CONTENT

PREFACE

Digital technologies, such as augmented and virtual reality, chatbots, social media, and mobile applications, have a major impact on our daily lives. They not only change how we communicate with friends and family, but also how we work, and how clients and organisations communicate with each other. To understand the world around us, and to have some idea about what the future will bring us, it is necessary to have knowledge of technological innovations. This book helps us to master digital communication innovations.

This book brings together practitioners and researchers to review 23 digital innovations. Everyone is familiar with clichés about practitioners and the academic world. Scientists are sitting in an ivory tower, drawing far too nuanced conclusions that often cannot be applied in communication and marketing practice. Communication professionals are often aiming for short-term effects, without wondering how effects can be explained, and they do not have the time to reflect. As the director of a foundation that tries to promote cross-fertilisation between science and practice, I know that it can be a huge challenge to let both worlds enter into a dialogue, and to edit and write a book with both readerships as the starting point. Paul Ketelaar, Jan Aarts, and Sanne Demir took up this challenge, with a magnificent result.

This book is NOT a scientific book infused with some practical cases, and it is NOT a casebook or practical guide infused with some scientific contributions; this book is a real blend of practical and scientific knowledge:
• An easy-to-read blend, as it leaves out jargon, and a tasteful blend as it visually illustrates the usability, effectiveness, future proofing, and x-factor of each digital innovation discussed.
• Informative for communication and marketing professionals; one can learn by doing and from experience, but also from peers and from scientific research.
• Informative for students and teachers of communication and marketing; one can learn from research but also from real-life cases that put academic research into context.
• Helpful for everyone who likes to be able to participate in discussions on digital innovations, whether this is at the kitchen table or in the board room: this book helps to understand digital innovations and their implications for clients.

This book offers us a full understanding of technological innovations for communication, not only by bridging practical and scientific knowledge but also by taking on a broad perspective on technology: as a tool, a medium, and a social actor. And above all, it provides a future perspective. A must have for everyone, a pleasure to read.

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Not all innovations are new. Some, such as storytelling and gamification, have already existed for some time. For instance, storytelling in the form of stories and myths has existed for hundreds, if not thousands of years. However, as a result of current developments in the media landscape, new forms of storytelling have emerged, such as transmedia storytelling. Gamification, the application of game techniques such as competition, is not new either but it has a newfound relevance for digital communication.

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STRUCTURE OF THIS BOOK

The book kicks off with contributions by five renowned experts about the current digital media landscape, providing the readers with their views on the present state of digital communication. They discuss several stepping stones for the 23 innovations that form the backbone of this book:
• The success factors in the digital transformation of organisations and the role of digital innovations
• The shifts in the way that market research is utilised
• How digital media are changing our brain
• Ethical perspectives for privacy issues
• Artificial intelligence and machine learning

Following this chapter, we discuss 23 innovations in digital communications that are organised in sections about innovations in media, communication strategies, branding strategies and methods. Each of these chapters is structured in the same way and can be read separately, making it easy to compare the innovations on their value. First, we define the specific innovation, illustrate it with examples, and discuss its distinctive characteristics. Second, we discuss implementations and views in practice and give the floor to an expert on that specific innovation. These experts discuss the innovations from the perspective of their own expertise, often with suggestions for how to implement the innovation successfully in organisations. Thereafter we

discuss the innovation from the perspective of science. We conclude each innovation with a window on the future and ethical issues raised by it, often relating to privacy issues. Each innovation is rated on the items: 1) usability, 2) effectiveness, 3) ethical responsibility, 4) future proofing and 5) X-factor, using icons (see below). These ratings were decided in discussions between the authors of this book and the experts who contributed to the chapters.

| ★★★★★ | ★★★★★ | ★★★★★ | ★★★★★ | ★★★★★ |
| 1 | 2 | 3 | 4 | 5 |

1   **Usability:** the degree of ease with which the innovation can be implemented by organisations.
2   **Effectiveness:** the chance that specified communication goals of organisations can be achieved by using the innovation.
3   **Ethical responsibility:** the chance that the innovation will be considered to be morally right.
4   **Future proofing:** the chance that the innovation is indispensable in the future.
5   **X-factor:** the noteworthiness of the innovation.

After discussing the innovations, four visionary experts offer us a window on the future, prioritising game-changers that in their view will make a difference to digital communication, based on our overview of innovations. They discuss:
• The role of AI-driven agents in our networked society
• Digital influencers in communication
• The role of virtual reality in our lives
• The digital media-landscape in … 2049

In the final chapter of the book we give our view on where we stand, based on the knowledge in this book, and how we can advance in integrating innovations in our media-landscape in a way that is beneficial for all parties involved.

PRIVACY CHALLENGES: WHERE DO WE STAND?

By Marcel Becker
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There once was a brilliant Harvard whizzkid who dreamed of connecting people. Fast techno-logical developments enabled him to build up his dream, first at a university campus and sub-sequently all over the world. As a more than symbolic reward for his efforts, huge amounts of money flowed in his direction. Critical comments about his interference with the personal lives of people were answered with a cynical 'Having two identities for yourself is an example of a lack of integrity'. But 15 years after the start of his project, he found himself in front of Ameri-can and European parliaments facing grave reproaches concerning his inadequate treatment of personal data. He had to pay an enormous price for his naivety, material as well as nonmaterial. In times of abundant data flows, Facebook has become the symbol of a corporation that, blinded by its business model, has fallen prey to privacy laziness and laxity. What does this Facebook experience have to say to the contemporary marketer, who perceives amazing opportunities but at the same time faces the challenge of dealing with the nagging privacy issue?

MORE REFINED DATA FLOWS

First of all, the success side of the Facebook story preeminently makes clear that the flow of data is vital in our economy. The statement 'data is the new oil' is valid in several respects. Mayer-Schönberger and Ramge describe data as 'lubricating oil' that more and more replaces money as a means of communication between suppliers and consumers of goods.[1] It was the classical task of money to express the preferences of the consumer. The price he wants to pay mirrors the intensity of his desire. But a consumer's attitude towards a product has many aspects. For instance, my favourite holiday destination is an ideal mix of hotel location, air and sea water temperature, proximity of a shopping centre and a town centre with cultural attractions. Money brings this wide variety under one header. By contrast, the flow of data gives much more information about the diversity of preferences towards a product. With the help of more refined data flows, suppliers are able to meet the needs and preferences of customers in a better way.

TRADITIONAL ETHICAL FRAMEWORKS DO NOT SUFFICE ANYMORE

The drawback of Facebook's success teaches us about the importance of privacy. Privacy does not, as was the case in earlier times, concern just knowledge about someone's behaviour, and discontent at being spied upon. In the digital era, privacy is about identity. Many were shocked when they realised the full extent of Facebook's knowledge: Facebook knows who we are, prob-ably better than we ourselves know who we are – the classic statement that self-knowledge is very hard to attain is hardly a consolation.

Given the tension between the importance of data on the one hand and privacy on the other, a further lesson of the Facebook story is urgent: traditional ethical frameworks do not suffice any-more. Old-fashioned advertising ethics were built on the assumption that the individual is able to choose freely after having received sufficient information. The persuasive power of adver-tisements should not impede people from making their decisions autonomously. In the digital era, the relevance of this model becomes highly questionable. Apparently in line with this model, Facebook asked the consumer to agree to a long consent form. Formally his autonomy was maintained. But this turned out to be an illusion. People thoughtlessly agreed with forms that were filled with legal jargon and were (therefore) largely incomprehensible. Autonomy became fake autonomy. The Facebook example has taught us that this false sense of clarity leads to discontent, which sooner or later turns against the company.

COMPANIES DEVELOP TRANSPARENCY POLICIES THAT ARE UNDERSTANDABLE

In the digital era where the viewers have become the viewed, the idea of autonomy is still domi-nant, and its counterpart, transparency, is the keyword. At present the idea behind transparency seems as noble as it was before: when you honestly tell me what you're doing, I'm able to make a responsible decision about my use of your services. This line of thought is dominant in the GDPR. But it leads to huge bureaucratic costs, and it can be questioned whether consumers are willing to handle massive amounts of information about the flows of their (meta)data. The least that can be asked is that companies develop transparency policies that are understandable. Nill speaks about 'Active Transparency', which requires companies to take reasonable action to ensure that costumers understand the information provided.[2]

KNOWLEDGE ASYMMETRY

As the next step we have to realise that autonomy and transparency in principle have their lim-its. The majority of consumers are aware of the fact that online advertisers use data to deliver targeted advertisements, but they are oblivious of the breadth and depth of Online Behavioural Targeting. Probably even good transparency policies cannot prevent such a knowledge asym-metry. And freedom of choice, a precondition of autonomy, is eroded. In the digital era, consum-ers hardly have alternatives. Since most websites, including all Google services, use some sort of information collection, consumers would practically be cut out of the internet altogether.

"How are you this morning?" you are asked. You answer, *"Fine."* Then your interlocutor says: *"Considering that the universe is expanding at an accelerating rate into infinite nothingness, I'd have to agree … We're doing relatively well, aren't we?"* Before the show ' Genius ' about Albert Einstein's life aired on TV, visitors to the website of National Geographic could chat with him. He answered both professional and personal questions. Through the funny answers to questions from visitors, the automated conversation partner gave you a glimpse into his love life, family, and drama while also bringing the television show to the visitors' attention. The head of the interactive agency 360i said about the campaign: *"We decided to pursue a conversational chatbot that would feel natural and speak as Einstein would. This provides a more immersive experience for users to really connect with him one on one and organically discover more content from the show."[1]* Fans really connected with 'Einstein' and came back week after week to interact with the chatbot.

DEFINITION AND KEY FEATURES

Never be put on hold again by companies and be helped directly with all your questions. Doesn't that sound like music to the ears? Today this is possible because companies are increasingly deploying chatbots that are available day and night. Chatbots are software-based systems that are designed to interact with people using natural language[2]. Like voice, which we discuss in another chapter, chatbots belong to the category 'conversational agents', dialogue systems equipped with human-like behaviour. The first known chatbot, named ELIZA, already existed in 1966 and was made by computer scientist Joseph Weizenbaum to demonstrate the superficiality of communication between people and machines[3]. ELIZA simulates a conversation by searching for keywords in the input of a user and then transforming the sentence based on some pre-programmed rules to create an illusion of understanding. The following is a typical conversation with ELIZA: (The sentences in capital letters are the responses of the computer, which performs the role of a psychotherapist)

Men are all alike.
IN WHAT WAY?
They're always bugging us about something or other.
CAN YOU THINK OF A SPECIFIC EXAMPLE?
Well, my boyfriend made me come here.
YOUR BOYFRIEND MADE YOU COME HERE
He says I'm depressed much of the time.
I AM SORRY TO HEAR YOU ARE DEPRESSED

Current chatbots are much more advanced and already far more capable of conducting more complex dialogues. To what extent the conversation between a user and a chatbot is running smoothly depends on how chatbots are programmed. A distinction is made between scripted and free conversation chatbots. Both chatbots are seen as a form of artificial intelligence (AI) or intelligence by computers. When machine learning is applied, chatbots search for patterns in large amounts of data and learn from previous interactions with users in general and historical data, enabling them to improve themselves. The free conversation chatbots make use of this. Through machine learning and complex algorithms, these chatbots can better 'understand' the intentions of users. This makes them less susceptible to weird grammatical phrases and ensures that the interaction runs smoothly despite errors in the input. Scripted chatbots like ELIZA, on the other hand, do not use machine learning but only see the question and check whether it corresponds to the data in a fixed database. Although they do not use machine learning, they are still seen as a form of AI. For users, they show some sort of intelligent behaviour but this behaviour is now not achieved by machine learning, but by means of pre-programmed rules.

LANGUAGE BECOMING MORE NATURAL

An essential part of chatbots is Natural Language Processing (NLP), in which the computational modelling of human language is central, both spoken and written. The better a chatbot is able to interpret human language, the better a conversation between man and computer will run. But, in human-human interactions, people can read between the lines, leverage contextual information when giving a response, and make use of sarcasm. For a person, this sometimes causes difficulties with understanding the conversation partner, so you can imagine that this is a challenge for computers, too. To make the conversation between chatbots and people run as smoothly as possible, researchers from NLP try to fathom the human linguistic dynamics in

The study of robots is a multidisciplinary scientific discipline. It studies the application of robots in our society and in our daily life in order to understand and optimise processes. Scientists from artificial intelligence, electronics, mechanical engineering, psychology, communication science, philosophy and law work together to tackle all kinds of robot-related issues. Considering the large number of robotics-related conferences[5] and journals[6], and the potential of AI and machine learning in robotics, this research area is growing fast.

THE PROCESS OF ANTHROPOMORPHISM

When interacting with a robot, people ascribe them human characteristics[7]. This is due to a phenomenon called anthropomorphism[8] – seeing humanlike qualities in non-human entities. Fogg[9] describes five cues that contribute to the process of anthropomorphism: physical, psychological, language, social dynamics, and social roles. Robots offer ample opportunities for people to anthropomorphise them, because they have a face, eyes, a body and limbs, and they move like humans (physical). Robots simulate a personality (psychological) and human feelings ("Oh dear how sad"). People respond socially to persuasive social robots and such reactions are more pronounced when the robots feature more interactive social cues[10]. In order for robots to recognise and show affective behaviour, they should be able to regulate and recognise simultaneously occurring tendencies of positive and negative emotions[11]. Robots recognise voice and human communication (language) and simulate the unspoken rules and dynamics of social interaction (social dynamics). The people interacting with them may impose on them the role of a friend, mentor or team-member, or authority (social roles).

LANDING IN UNCANNY VALLEY

The effectiveness of robots partially depends on how they look, i.e. whether they are humanlike or non-humanlike. According to the uncanny valley theory[12], people will like robots more when they look more like humans. However, when their appearance becomes too similar to humans, people start to reject the robot. A mechanical robot, like a vacuum cleaner, does not look like a human at all, and will therefore be less scary than a humanoid robot that looks more like a human. An android robot that almost looks like a human but moves in a rigid, machine-like way, lands in the uncanny valley, being evaluated even worse than the mechanical robot.

What explains the occurrence of this uncanny valley effect? First, people have a need for distinctiveness[13] in that they want humans to distinguish themselves from non-humans. In their eyes, robots that are too humanlike do not differ enough from humans, which is why they associate them with the living dead such as zombies. This may even lead to a mini-existential crisis: humanity is non-distinguishable from machines, threatening human identity. However, robots looking like perfect humans may go beyond the uncanny valley, raising ethical questions that emerge in science fiction movies. Developers of robots account for the fact that robots should look like humans but not too much, because it then gets uncanny.

FUTURE AND ETHICS

Robots function on the basis of software. Artificial intelligence will enable them to take decisions autonomously. They will advance even more in the near future and may even beat humans in mastering complicated skills such as language and visual capabilities. They will more often make decisions with ethical impacts (i.e. autonomous
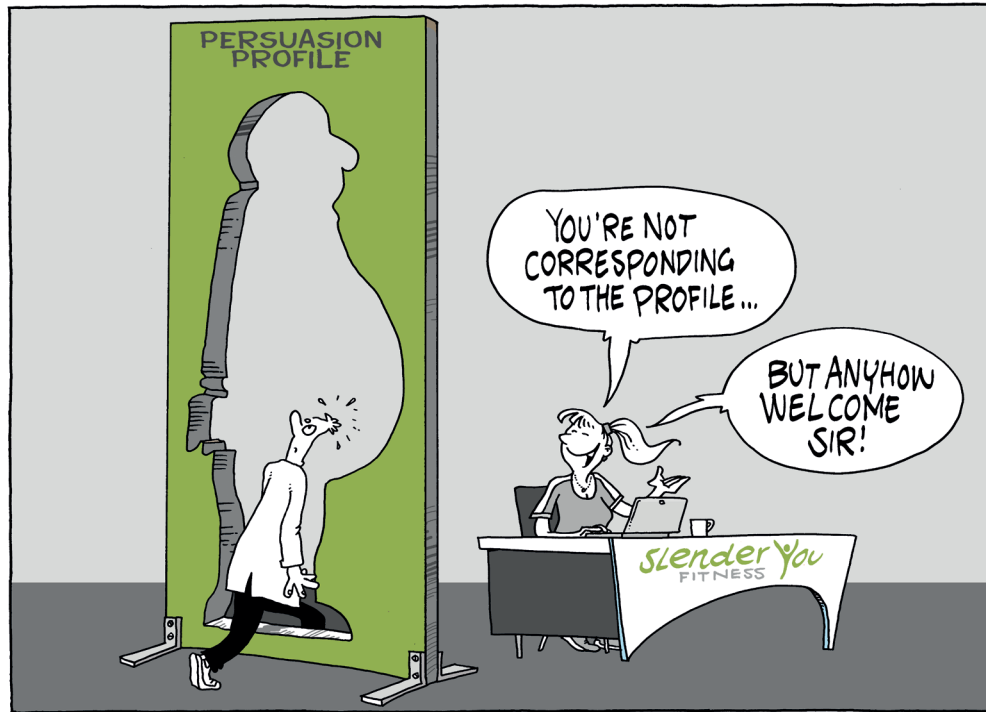
REFLECTING ON PERSUASION PROFILING

By Maurits Kaptein
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Dean Eckles and I first started using the term 'persuasion profiling' in an article on its ethical implications: the term was deliberately chosen to be somewhat scary. We took the term from an early video by BJ Fogg that displayed the idea that the ways in which people were persuaded by technologies could be personalised. Surprisingly, however, it has found its way into both communication research and practice and has – as far as I can judge – lost most of its scariness (although rightfully many authors are still debating the ethical issues of persuasion profiling, and personalised persuasive technologies in general).

Currently, I guess the term is broadly used for what we called "*means* adaptation" (or personalisation); any method by which the argument(s) of a persuasive request, such as a sales pitch or a public education campaign, is adapted to the receiver. I still find this view informative. To illustrate, communication professionals and researchers are largely aware of the fact that in online communication the *ends* of a request are often personalised: the books presented to you when you go to amazon.com are different from those presented to me. However, what we often fail to recognise is that there is much more that can be personalised: whether or not you see large pictures of the products, whether or not you see the ratings of others, whether or not you see endorsements by other authors, whether or not an appeal is made to the excitement of reading the book, or rather to the safety and comfort of reading in your own home, etc. etc. All of the latter are adaptations of the means by which the persuasive request is made, and in my current perception, any personalisation of these means is broadly covered by the term *persuasion profiling*.

Working on persuasion profiling changed my perception of personalisation attempts in (internet) communication. First of all, it totally changed my perception of the value of data that we store in CRM databases or that is obtained by psychological trait measures. Initially I thought that these types of demographics and personality scores would be extremely valuable in matching the type of argument with the recipient of the message. However, comparative studies showed that when trying to predict the effectiveness of different means, the value of these measures is extremely quickly swamped by the value of historical responses. If I see you buy "bestsellers", this is likely to be a better prediction of your propensity to buy "bestsellers" in the future than any combination of your demographics, personality, etc. And believe me, we tried many such combinations.

Second, working on persuasion profiling quite radically changed my perception of a profile. I used to think of profiles as static descriptions of "types of people"; hence, in a personalised communication effort we would tailor the message towards one of a small set of possible profiles (you can easily imagine the "authority" profile, or the "scarcity" profile in the case of Cialdini's influence strategies). However, nowadays I see profiles as the collection of estimates of the effectiveness of different types of messages (including the uncertainty associated with these estimates) based on all the data we have available. For a computer to personalise a message it doesn't need to know that you belong to the "authority profile"; rather, it needs a good statistical model to predict which of the possible means available is most likely to be successful. I have largely moved away from human-interpretable models,

#10 LOCATION-BASED ADVERTISING

Location-based advertising allows companies to approach consumers individually, on the basis of their current location, dynamically and in real time[1].

Suppose you are looking for a new pair of jeans from a certain brand and in a certain colour, but you are a little short of cash. When you park your car in the parking lot of the shopping centre, your smartphone beeps, and shows a nice overview of retailers who sell pairs of jeans of the brand you like. You choose to visit a specific retailer, and when you approach the store: another beep. A pair of jeans in your size is currently available in the store in the model and colour that you like. You decide to go in. Exactly in front of the shelf with the pairs of jeans that interest you, you get another message, customised to your specific need: an extra sale on the regular sales price in your size, only if you decide to buy them right now. The ad says 'especially for you' and the offer also feels like it, considering your cash-flow problem! Although you feel slightly uncomfortable about being tracked, you decide to buy it.

DEFINITION AND KEY FEATURES

When we frame location-based advertising (LBA) as only beneficial, as in the example above, it seems like an innovation that is hard to resist, making the ultimate dream come true: no more ad overload, because the ads are specifically tailored to your needs, at the moment that you want them to show up. However, when you ask 10 people around you whether they would allow advertising to appear on their smartphones, even when it is tailormade, many will say 'my phone is off limits for advertisers'! Is LBA an innovation to account for …

LBA IS LOCATION- AND TIME-BOUND

An increasing number of retailers are offering their own mobile apps, often incorporating a digital version of their loyalty programme card. Consumers might appreciate the convenience and possibility of checking for special offers or for information about developments around the brand, and retailers get unique information about their customers, such as their purchase behaviour, links to their social media accounts, and most importantly, their location. Many apps require consumers to provide access to location services in order to function properly. This means that retailers

elaboration is needed to understand the ad. Consequently, the message is not criticised. There is, however, a small amount of effort needed to connect the message to a central theme. Therefore, we can conclude that we process RTC in a heuristic way[16]: with a small amount of effort, we process the information emotionally, based on heuristics that ease the cognitive load of making a decision. This explanation of the processing of RTC is closely related to the Evaluative Conditioning theory, which states that when a known brand is repeatedly evoked in a positive context, a person will in time associate the brand with these positive cues, even if the context is absent. In other words, it leads to a positive brand evaluation[17]. The Ikea and the Snickers ads are both great examples. They used humour to create a positive context, made sure the message was strongly related to the brand, and became a great success.

ETHICS AND FUTURE

Because RTC is focused on news and events instead of people, in its original form there are few privacy issues tied to this technique. However, RTC is getting more personal and uses data to tailor the message more often. Tailoring the message based on the data of the target group, however, may give rise to some privacy issues. Data that is acquired without the consent of the consumer is not ethical, and consented data is rare. Additionally, with the recently implemented GDPR laws in the EU, acquiring this data is not even legal in most cases. We advise taking these arguments into account when considering the use of tailoring, or while researching the use of RTC.

THE ETHICAL VERSION

There are ways to use tailoring without crossing ethical boundaries, by using contextual data instead of personal data. The #comeonin campaign by the Sydney Opera House illustrates this well. The opera house is the most Instagrammed icon in Australia. However, out of all the people who post a photo of the building, only 1% actually enter it. That is why the opera house started a campaign[18] to invite people to come on in. They used computer vision and public data, namely the geo location and hashtags on Instagram, to track people who were near the Sydney Opera House and had just posted a picture. They created personal welcoming messages, inviting them to come on in. They created unique experiences for everyone who was invited. Some got to try on real costumes, others were invited to attend a private soundcheck, and so on. Of course, they all posted about their unique experiences on Instagram again,

which resulted in over 5 million people seeing another side of the opera house: the inside.

CONCLUSION

As we have argued above, RTC fits the current use of media well. It is timely and relevant. It has a quick development phase and can therefore easily keep up with fast-moving consumers, with even faster social media consumption. The biggest challenge for RTC is therefore not on the consumer side, but in company structures. Consumers 'live in the moment', but companies still work with periods of a quarter – or even a whole year[19]. Marketing budgets are usually set in stone, long before the opportunity for real-time marketing comes along. A company can preclude this, by using real-time as a business model as well. This means agile working: fast, flexible and nimble[20]. It gives companies the opportunity to connect an advertisement in real-time with consumers. This way, one knows the trends in the target group, which will improve the business and future (real-time) marketing.

CLASSIFICATION

★★★☆☆   ★★★★☆   ★★★★☆   ★★★★★   ★★★☆☆

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PERSONAL BRANDING USING LINKEDIN

By Marjolein Bongers
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Do you want to increase the recognition of your name (personal brand awareness) and recruit more leads through LinkedIn? When people search for your name on Google, LinkedIn often appears at the top of the search results. It is therefore very important for your personal branding that you have a professional LinkedIn profile. I train people in the field of personal branding, in which LinkedIn plays a crucial part. Let me give you some practical tips that you will be able to use directly.

CHOOSE YOUR PROFILE
First of all, before you get started with optimising your profile, you have to think carefully about your personal branding. Which key words do you want to be found with, what is your expertise, and what can you help people with? Just like Google, LinkedIn is a large search engine. Companies spend a lot of money on Google Ads and SEO (search engine optimisation) so that they can appear as high up as possible on Google's search results, but they often forget SEO's power on LinkedIn. If you want to score in the search results of LinkedIn or to be able to be found in general, it is recommended that you use the right keywords in your LinkedIn profile. Add these keywords to your profile, as well as to your status updates and blogs.

Essential components of your LinkedIn profile are your profile picture and the headline, because these are the first things that visitors to your LinkedIn profile will look at. In addition, your profile picture and headline appear on the feed of LinkedIn every time you share content or interact. Thus, it is best to state your occupation or business in your headline. Stating solely that you are a CEO or a Manager at a particular company is not so informative. Write more about your occupation and the problems you solve. Part of your headline also appears in Google Search. So, use the given 120 characters of your headline well and do not forget to include the key words.

The strength of LinkedIn is not in the pages of companies, but in the personal profiles. Every day we see and hear many logos and advertisements. We have trained to avoid and become 'immune' to advertising. We no longer absorb it, unless it affects us emotionally. In other words, if you have a company page on LinkedIn and your content appears on the feed of LinkedIn users, they are more inclined to scroll past it when they see a logo than when you, your employees, or colleagues share this message from their personal profiles. People touch people; logos do not touch anyone anymore.

"Power is gained by sharing knowledge, not by hoarding it"

SHARE YOUR KNOWLEDGE
If you want to strengthen your personal branding, a professional profile alone is not enough. In order to work on your visibility, you also have to share your knowledge, for example in the form of updates, blogs, or vlogs. Do you want to add a link to a website in that update? This is possible, but you should know that your reach will be less, because LinkedIn wants to keep its users on its own platform. The best way to convey content is video, which is in line with the innovation online video advertising that is discussed in this book. Placing a video on LinkedIn works much better than a link to a website. However, note that you should be subtitling your videos. LinkedIn is a "silent" platform and takes care of square instead of rectangular video. Square video is much more prominent than vertical video and provides more interaction.

So far we have discussed what your profile should look like. Ultimately, it is of course the added value of the content you share and how active you are on LinkedIn that matter. Do not forget the power of hashtags in your messages. When you add a number of hashtags to a status update, you notice that your messages gain a higher reach. With a good strategy and regular posting of valuable content in the right way, LinkedIn will consider you an expert. And this will generate leads and ultimately sales.

"The best personal brands are authentic, so stay true to yourself"

LISTEN AND CREATE AMBASSADORS
Sharing valuable content is paramount if you want to show who you are and what you can do. This is how you load your personal brand. But there is one more thing you should do: carefully listen on LinkedIn. Do not just send, but also listen to your network. Scroll through your timeline and engage in the interaction. This can be done simply by being active in groups or responding to an update of one of your LinkedIn connections. Giving implies receiving. If you do not pay attention to your connections, you do not need to pay any attention to your updates. Sad, because those interactions strengthen your connections and your own reach.

Someone does not deliberately pay attention to the message, but notices it unconsciously, which may result in an implicit attitude change. For example, the recruiter scrolls through a LinkedIn page and unwittingly registers a message from an applicant who is active on professional social media. When he then takes a list of applicants, he has a preference for this person by recognising the name. In psychology this is called the mere-exposure effect; people tend to judge stimuli to which they are repeatedly exposed more positively because the stimulus (in this case a personal brand) is increasingly easier to process after a number of exposures. The brain subsequently (falsely) attributes the positive feeling that is evoked by the ease with which the stimulus is processed to the stimulus (the personal brand) itself.

For people it is therefore important to match their personal brand to a *person-job fit*, *person-organisation fit* and *person-person fit*, because they all influence the recruiter via different routes and could eventually result in a recommendation. Finally, research shows that subjective impressions (person-person fit) have a significantly greater effect on the perception of a recruiter than objective qualifications (person-job fit and person-organisation fit), in that feelings often prevail over the rationale of the recruiter[11].

FUTURE AND ETHICS

Due to changes in the economy and the way of working, it is expected that building and maintaining a personal brand will become increasingly important. People change employers more often, which makes it important to maintain the personal brand permanently. The competition in the job market means that individuals need personal branding to be able to make the difference. Those who cannot fulfil all the job requirements in a vacancy must have a very good story or a strong personality. Here a personal brand contributes to this: you can show who you are as a person, making you more noticeable and distinctive from the competition. Thirdly, social media is increasingly being used worldwide and it is the most important place for personal branding: people use it to profile themselves and impress employers, and employers use them to seek candidates for a job[12].

An ethical issue that sticks to personal branding is that it could encourage narcissism. As we have seen, research suggested that Instagram usage correlates with narcissistic traits. Moreover, when anybody shows themselves continuously from a positive side, this can also have negative consequences. This could result in jealousy and feelings of uncertainty. According to *the social comparison theory*[13], people constantly compare themselves with others in order to determine how well they are doing. If someone always sees idealised images of others, this increases his or her standard of comparison[14]. Not being able to meet this high standard may cause people to become uncertain about their own (market) value.

Personal branding can have positive effects on man, however. First, because it makes certain experiences possible, which might not be there without personal branding. People, for example, are invited for interesting conversations because of their strong personal brand, helping them in their careers. Personal branding thus supports the achievement of self-actualising experiences and thereby increases someone's eudaimonic well-being, the subjective evaluation of someone's life satisfaction, and of his/her positive emotional feelings[15]. This kind of happiness has repercussions on business. It appears that employees who are given the freedom to build their personal brand are more satisfied than employees who do not have this freedom[16]. Finally, by developing their own personal brand, people learn about their personality and purpose in life and these insights will make people feel more confident and happier[17]. Think about this: someone who incorrectly ascribes certain qualifications to himself, such as lying about his education and work experience, acts unethically. But, when someone highlights his positive side and reveals his talents and passions, is that unethical?

CLASSIFICATION

★★★★☆   ★★★★☆   ★★★☆☆   ★★★★☆   ★★★★☆

Angela is anxiously waiting in the interrogation room. Paperwork has just been done, fingerprints have been taken, her face, eyes, and even her total body were scanned. Now she has to answer all sorts of anxiety-evoking questions, and these answers are thoroughly checked. Then the final redeeming words of the immigration officer that Angela was waiting for: our decision is that you may enter our country. Have a nice holiday!

DEFINITION AND KEY FEATURES

In the above example we touch upon a dilemma that is often associated with facial recognition: giving up your privacy in exchange for relevance. When you want to enter a country for a holiday, nobody will refuse a facial recognition and total body scan procedure, because the relevancy is clear: after approval, you can enter the country; without approval, you have to fly back home on the first available plane. The higher goal is also obvious: to safeguard a country from criminal activities. So you submit, wait in line, accept the scanning procedures and sometimes are interrogated a bit more, like Angela. Besides, you know in advance that you are going to be scanned, and are prepared to undergo it. This knowledge is also important and helps to resonate.

A FACE IS UNIQUE LIKE A THUMBPRINT

In this final innovation in this book we focus on facial recognition, an innovation that appeals to the imagination of many people. Facial recognition is an innovation that uses biometric software to map an individual's facial features mathematically and it stores the data as a faceprint. The software uses algorithms to compare a live capture or digital image to the stored faceprint in order to verify an individual's identity[1]. Machine-learning enables facial patterns to be analysed and compared with facial features stored in a database, such as facial muscles, the distance between the viewers' eyes or the shape of the eyebrows, the width of the nose, length of the jaw line, shape of the cheekbone and even facial movements. This comparison happens in real time.

Thus, this technology is capable of recognising the most personal and unique part of the human body. Just like a fingerprint, a face is unique, and even more important

#23 FACIAL RECOGNITION

Facial recognition is a technology capable of identifying or verifying a person from a digital image or video.

IN 2049 COMMUNICATION MAY WELL BE BIOLOGICAL

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In this final contribution, we will be looking ahead towards possible scenarios for the future of digital communication: how will we, for example in the year 2049, look back upon today's cutting-edge innovations? Fields of research and developments such as persuasion profiling or real-time communication now seem very innovative, perhaps even a bit odd. Thirty years from now, they may well have become the 'new normal'.

HORSELESS CARRIAGE SYNDROME
As we look ahead into the future, we would be wise to remember Marshall McLuhan's 'horseless carriage syndrome': the tendency to build the future, using today's new technology, to address the needs of the past. In the case of information technology, algorithms that focus mainly on targeting advertisements and maximising relevance for audiences are based upon the assumption that in the future, increasing the dissemination of messages will still be the norm. However, we should also consider the possibility that changes in media usage and social-media culture will shift the demand from spreading more messages and reaching wider audiences, to curating the resulting overload of information. Using digital technology to continue doing what we have always done, would thus amount to designing a future 'with all other things being equal'. In doing so, we overlook the possibilities of disruptive change and underestimate the impact of paradigm shifts. The future will result from changes within a complex tangle of political, economic, social, technological, legal, and environmental forces. Seeing technology as anything more than one of these forces is like reinventing the carriage without considering the long-term effects of mass transportation. The digital revolution is not about providing better ways of sustaining old habits; it is about using innovative technologies to reinvent the ways in which we can address the core values behind these habits – such as the need to belong, to be safe, and to stand out. We cannot consider the future without questioning the past.

TECHNOLOGY MAY BECOME DOMINATED BY BIOLOGY
Besides focusing on how innovation can bring about positive change, we should also consider possible transformations in what we currently believe to be normal. The future beyond the digital revolution will result from an exploration of paradigm shifts made possible through innovation: will it be a world in which more information leads to better distribution and less scarcity? A world in which big data and machine learning gradually make the future as predictable as the weather? Looking ahead at what is still a constantly changing future, some possible developments may seem out of place in a publication on digital communication such as this one; consider for example the discovery of the wood wide web (to which we shall return later), or research in the field of brain-to-brain communication, potentially heralding an era in which technology may become dominated by biology. We should also be mindful of the changing nature of the communication process, and of the need for a response to the increasing amount of messages and noise resulting from the explosion in the number of broadcasters.

TRUTH FILTERS
Ours is an age of overwhelming noise amplified by algorithms. Curators are becoming a rare and valuable commodity. Messages spread through social media are endlessly echoed in the form of retweets, likes and nudges, driven by algorithms. Though the original messages may have been sent to targeted recipients, their echoes become noise by the time they have reached a public that has no means of filtering truth from falsehood, amusement from influence. During the past decade, the ever-changing media landscape has seen an increasing concentration of institutional mass media[1], accompanied by an explosion of micro-media channels (i.e. media run by individual users, including social media and blogs) with an estimated 2.9 billion individual broadcasters in 2019.[2] The distinctions between commercial, personal, and persuasive communication have become increasingly blurred, as have the boundaries between advertising, fake news, and civic reporting. This should lead to a renewed focus on gatekeeping and contextual editing: user reviews and curatorial algorithms (which Facebook and Google for instance are already experimenting with) are but a first step towards unravelling the noise.

NEW LINE OF ETHICAL ALGORITHMS
We should thus expect the development of a whole new line of 'ethical' algorithms that address the need for demarcating and curating content, rather than merely enabling broadcasters to further refine their strategies of behavioural targeting. This new ethical curator could, for instance, track the origin of the content and put it into context, making the path of 'influencers' visible to the receiver, or facilitate the further development of technological 'truth filters', which identify the original broadcaster, their motivations, and the interests behind the message. The focus will then shift from spreading to checking. Currently we do this mostly through human peers; a move towards algorithms can help further establish who the original broadcaster of the message was, which parties have contributed to its dissemination, and which lobbying system has contributed to the opinions being presented. This would entail a

'WHAT IS THE IMPACT OF DIGITAL INNOVATIONS IN COMMUNICATION?'

'23 Innovations in Digital Communication' describes, critiques, and evaluates digital innovations that are applied in communication. Innovations that are not hypes, but are becoming part of organisations and life, causing permanent changes in media use and communication.

The goal of this book is to help readers master these innovations. It is a source of inspiration for anybody who wants to understand how digital innovations can impact communication and change the media landscape in the future. Reading this book will render valuable insights into digital innovations in communication, and how they can be used to influence information processing, decision making, and buying behaviour.

Each innovation is discussed, looking at its impact and professional, scientific, future, and societal challenges. The chapters contain examples and cases from advertising, healthcare, journalism, and entertainment.
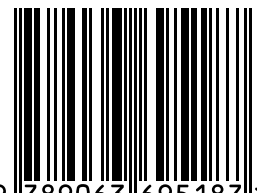
THIS BOOK CONTAINS

• Visions of communication experts about the current and future digital media landscape
• Discussions of digital innovations from a practical, scientific, and ethical perspective
with contributions of experts about its implementation

"Science and practice need each other to grow. This book brings both perspectives together and gives you an all-round scope of recent innovations."

Robert Cialdini