



Consumer Acceptance of New Technology Possibilities

In Mobile Messaging Apps (MMA)

To Approximate What Will Be Next Regarding Value Propositions

In Mobile Messaging Apps

**A Dissertation Submitted in Part-Fulfilment of the Requirements for the Degree of Master of
Business Administration of the**

University of Warwick

'This is to certify that the work I am submitting is my own. All external references and sources are clearly acknowledged and identified within the contents. I am aware of the University of Warwick regulation concerning plagiarism and collusion.'

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To be able to write about the communication behaviour of young consumers, the author 'went down to the catacombs of communication', led by the 'torches' of teenagers via online tools, encountered harsh critic ('swerve') for his research approach and welcomed Twitter support from young digital 'Super Communicators'. Ended up, by accident, chatting with Kim Kardashian and learnt to use the tools that the 'olds' don't know yet.

To the beloved people around me, please accept my excuses for above absence.

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Executive Summary

Messaging is the killer app no. 1 on smartphones. 'Private messaging apps are the full realization of the potential of mobile computing' (Analyst Ben Thompson). As mobile phones are physical, they are always with us, giving us everywhere and always the opportunity to use every free moment for mobile activities like messaging.

2013 has been the year of mobile messaging apps (MMA). In 2012 and 2013 several MMA reached the critical mass of 100 million registered user, which initiated further hypergrowth due to network effect and global media covering. As an example: WhatsApp is at 350 million monthly active users (MAU) in November 2013 with an average of 36 sent messages per MAU. The biggest players in the global MMA market are WhatsApp (USA), LINE (Japan), WeChat (China) and Viber (Israel). As a consequence to their success, these companies received valuations and buying offers from some US\$ billions (Snapchat: US\$ 4 billion; WhatsApp: US\$ 11 billion; LINE: US\$ 28 billion and WeChat/Tencent: US\$ 100). These MMA span from lively first-class mobile messaging apps (WhatsApp, Viber) to full-fledged mobile social networks with mobile commerce (LINE, WeChat, KakaoTalk, Tango). They are in competition and co-operation with mobile network providers and social networks, like Facebook and Google, and are closely-monitored by governments (security and privacy protection authorities). MMA messages are routed as data packets traffic over-the-top (OTT) in internet protocol (IP) to specific IP addresses associated with particular computing devices, while SMS uses phone numbers and the telecommunications provider network to route mobile messages.

The market is the global revenue for SMS is estimated at USD 133 billion for 2013 (TelecomTotal, 2013¹) with profit margins up to 90%. Ovum estimated that MMA (OTT services) will cost mobile network provider USD 33 billion in lost SMS revenue in 2013, rising to USD 86 billion in 2020. This is a 25% SMS revenue loss for mobile network provider due to MMA. It is estimated that daily global OTT messaging volumes exceeded SMS in Q1/2013 and predicted that by the end of 2013 the number of OTT messages sent per day will at 41 billion, more than double the 19.5 billion SMS messages. WhatsApp has a staggering market share of 27% in global OTT messaging and 18% in combined global SMS & OTT messaging. The global market situation is twofold: many of the developed countries have reached maturity in the MMA market in terms of MMA adoption to smartphones. Whereas in developing countries are just at the beginning of the growth phase due to their less well developed mobile network infrastructure.

This works look at the next developments of MMA. Following suggestions are based on the author's survey results, expert interviews and on secondary research on the MMA market. MMA is a youth thing and a culture thing. The author's research suggests that different cultures put similar emphasis on MMA features (besides some new Asian features like time-line updates, making friends nearby and mobile marketing) but uses these features on different levels of activity. Asians and Latins are a cohort (high activity) and Europeans and Americans (lower activity) are a cohort regarding this. Age is the strongest differentiator regarding the affinity in MMA. The highest affinity for MMA comes from 14 – 19 year old mobile consumers.

¹ See <http://www.totaltele.com/view.aspx?ID=482568>, retrieved on 15th September 2010

Youngest consumer use MMA much more, they use other features than older consumers, and they use it in a different use case. The affinity is decreasing by growing age. Men and women use MMA highly similar, which denies the relevance of gender-specific messaging tools.

In a heavily crowded market is vital to have a simple value proposition for a clear positioning towards a targeted consumer segment. For new entrants or further development of existing MMA the author urges MMA to make clear decisions about their orientation: Do they want to be a messaging tool (like WhatsApp, Viber) or a mobile social network (like LINE, WeChat, KakaoTalk, Tango), with or without additional value chain elements like mobile marketing and mobile commerce. The success of WhatsApp shows that to put superior focus on one value proposition is rather convincing than limiting.

The second decision is about the targeted segment. The author sees four models: General segment model (e.g. WhatsApp), youth segment model (e.g. Snapchat, Kik), ethnical segment model (e.g. WeChat, Swisscom iO, local hero MMA), and the most recent model: customer segment model (Laiwang Messenger for Alibaba, Yixin for China Telecom).

The author's research and expert exchange has shown that most critical for success are the following MMA value chain elements: message delivery (message delivery speed; notifications; online timestamp; messaging encryption), interface, and messaging proposition as well as automated directory management. Due to the advanced MMA market the author sees most potential for new creative messaging propositions (what can be sent and how easy can it be sent), and for mobile marketing and mobile commerce in a later stage (based on the simplicity of international use cases which have medium barriers to be copied in other regional markets).

A timely-accurate online timestamp and delivery notifications increase the feeling of mutual and permanent connectivity and help to start communication exponentially. Therefore, the author suggests that online timestamp and notifications are the true delighters (Kano model) of MMA.

Messaging is mainly used for core messaging: local and international messaging, exchanging pictures and videos, messaging with school and work colleagues, local and international calls. There are core features which show high relevance and there are other features which show consumer's indifference in the long-tail.

'Updating a time-line in MMA' and 'Following and exchanging with favourite brands and stars' are top ranked activities among youngest consumers. They have the highest affinity among all segments to mobile marketing (64%). The non-obtrusive permission marketing approach and the possibilities for personal 1:1 exchange with brands and stars are the key drivers for this affinity. Therefore, the author sees a further rise in these in social media features and mobile marketing in MMA in this segment.

During his research the author found that youngest consumers (14 – 19 years) use MMA (1:1), with the help of open communication platforms (1:n) like Twitter and Instagram, to create global contacts and exchanges with new people outside their friends or acquaintances circle. Furthermore, youngest consumers had a high affinity to the open communication concept tests in the survey (making friends nearby). This brings the author to the conclusion that open communication solutions (1:n) and public messaging will rise in the near future (e.g. chat group for regular visitors of favourite leisure place).

The more creative messaging can be done by a tool, the more it will be used, the more content will be shared. Share of habit has become more important than engagement, as success parameter in the over-crowded MMA market. Visual communication will increase (videos, stickers, aso.)

In developed countries, the typical scenario is that a consumer has three-four MMA on the smartphone: one for messaging, one for voIP calls, and one local MMA solution. Younger consumers tend to have another differentiation among the MMA tools: they use one for messaging with colleagues (telephone number based), one for messaging with strangers (anonymous user ID based), one for creative messaging (visual).

More the 50% of the MMA consumers are willing to pay an annual fee of more than US\$ 1. The affinity to pay for a MMA increase from low user to heavy user and from young users to older users (until 50 years). Freemium with in-app purchase possibilities are the most popular revenue model.

Derived from the survey/expert interviews/second research conclusions, the author suggests a 5 step decision plan to make decisions for MMA value propositions and actions.

1.0 Introduction

1.1 Objectives and Context

The author works as a Product Manager in telecommunications and is highly interested in mobile messaging apps (MMA), their possible social media features and their value propositions. New technology possibilities referred to in this study range from core MMA features to mobile marketing (MA), mobile commerce (MC) and location-based services (LBS), all in respect of MMA. These fields are strongly connected with mobile consumers' openness to share and their feelings about privacy on the mobile which this study will analyse, too.

The topic is hot, messaging apps have reached their inflection point in 2013. In the course of the author finalizing his P&D in November and December 2013, MMA continues to make headlines daily. Many of them have found their way into this work.

Globally, there is currently a big surge in MMA. But in the media, the drivers behind these successes are not explored in a systematic way nor is there a lot of comparative overview of this highly fragmented global MMA market.

This P&D follows two levels of perspectives: a macroeconomic and a microeconomic view on MMA. Macroeconomic regarding MMA adoption, competitive market overview and segments; microeconomic regarding business models, value propositions and their usability and consumer context. Therefore, this P&D project follows two focuses: Firstly, this study wants to create a competitive overview which should make it easier to grasp the forces behind the high dynamics in the MMA market. Secondly, but even more importantly, it is written to get a better understanding of what mobile consumers do (or not do) with their messengers and what they would (not) like to do with their messengers. The set-up of this study aims to deliver more a broad big picture of MMA than an in-depth analysis on a single MMA sub-topic.

The author has set up a survey of 40 MMA product questions and intends to derive from it a *MMA activity ranking* and a *MMA preferences ranking*, based on responses from about 180 MMA consumers. To do this survey on an international basis gives the chance to compare European and Asian user patterns and preferences. The approach with this MMA activity and preferences ranking, stratified by several demographics, enables the author to create an overall 'map' about MMA segments and value propositions regarding MMA core activities, mobile marketing (MA), mobile commerce (MC) and location-based services (LBS) in MMA. This 'map' eventually can help to identify spots for in-depth analyses in a latter step. This P&D aims to be a MMA navigator with comparison and explications regarding MMA consumers and economics for professionals who have to make decisions about MMA.

There are three main MMA trends visible: WhatsApp (and Viber) from the U.S. (highly efficient and functional communicators, single featured, no value-added) vs. WeChat and LINE from China resp. Japan (mobile social networks with various features and value-added). MMA are currently transforming SMS capital to social capital. From this situation arises the question: Will the Western consumer world adopt the value propositions and business models of Asian MMA? The above mentioned ranking should deliver hints to answer this question. The third trend is the youth sector with their own preferred MMA solutions (KIK, Snapchat).

These MMA successes threaten mobile network provider and existing social networks. Many telecom operator and other providers (e.g. biggest electronics store chain in China) are launching own messenger solutions in order to stay in the game and not to lose out. Most of these messengers are me-too. How shall they differentiate? Does it make sense to put all features in one or does it make sense to focus on one specific feature in a very elaborate manner for a special segment? This P&D work shall help to find facts and guidance regarding these questions. The concept of being local hero could help to win or to survive in this game.

The author is especially interested in researching the mobile consumers' acceptance of *local hero solutions*. There are diverse options for local hero solutions in MMA. The author has selected two LBS product concepts to be assessed in the questionnaire by mobile consumers. The two MMA features, 'connect people nearby/strangers' (CPN) and 'topic-based regional chat groups' (TBRCG), are inspired by connected cities and networked societies (Ericsson). These features are integrated with four different use cases in five questions in the survey. For this four use cases (CPN and TBRCG), the survey represent a simple product concept testing via online.

These are the research question that the author wants to answer:

1. What do mobile phone consumers do (or not do) with their mobile messaging apps?
2. What would they (not) like to do in their mobile messaging apps?
3. What could be new features that meet the interests of mobile messaging app users?
4. How far can social media features and location-based services support the value proposition of mobile messaging apps?
5. How far can mobile marketing and mobile commerce sustain in mobile messaging apps?
6. What is the expected subscription fee for a mobile messaging app in the eyes of the users?

This thesis seeks to evaluate, based on consumer research, what are the strategic development options of MMA regarding new social media features, mobile marketing, mobile commerce and location-based information. Therefore, this work is of interest to mobile messaging app companies, telecom companies and social networks, as they all have to deal with the MMA phenomena. However, the conclusions of this thesis can be interesting to anybody aiming to keep and grow a mobile community.

1.2 Structure of the Thesis

Subsequent to the Introduction chapter, the Literature Review chapter provides an overview of the important facts and key drivers around MMA. A short history of MMA (earlier and current applications) which helps to better understand today's state of social media features, mobile commerce, mobile marketing and location-base information in MMA will also be provided.

The Research Methodology chapter provides details of the research objective, approach, survey questionnaire and explains the undertaken data analysis, plus summarizes the relevant secondary research on MMA.

The Result chapter first presents the data results from the web survey questionnaire, followed by MMA executive interviews which will also review the findings in more details, linking and discussing them with the relevant points made in the previous chapters.

The Discussion & Analysis chapter compares and discusses the survey results and findings with the existing literature.

The final chapter Conclusions & Recommendations provides a summary for generalizability and the answers to the research questions in order to derive recommendations. Furthermore, it rationalizes a 5 step decision plan for MMA executives. It also states the limitations in the study and proposes potential future research areas.

2.0 Literature Review

The purpose of this section is to review the current academic literature on consumer behaviour in MMA and instant messengers as well as on the perception of mobile messaging value propositions. In order to have an introduction in one flow, the author has also place 2.1 Human and Mobile Phones and 2.2. MMA and Digital Disruption in Literature Review chapter, even though these sections are rather secondary research. Therefore, this section will be based on academic literature and on business consultancy research on smartphone use and MMA.

Definition of mobile messaging app or chat app (partly taken from Wikipedia)

A mobile messaging app (MMA) is a mobile application that enables the exchange of instant/synchronous messages and other rich media (e.g. pictures, videos) within the same app (proprietary systems). These messages are routed as data packets traffic over-the-top (OTT) in internet protocol (IP) to specific IP addresses associated with particular computing devices, while SMS uses phone numbers and the telecommunications provider network to route mobile messages. OTT content refers to delivery of messaging over the Internet without an Internet service provider or mobile network provider being involved in the control or distribution of the content. The provider may be aware of the contents of the Internet Protocol packets but is not responsible for, nor able to control, the viewing abilities, copyrights, and/or other redistribution of the content. MMA are established via mobile networks (with mobile data rateplans) or WIFI (home internet access). They are OS-specific (iMessage and former BBM) or enabled across different mobile operating systems like iOS, Android, Windows Phone, Blackberry OS, Symbian OS, et al.

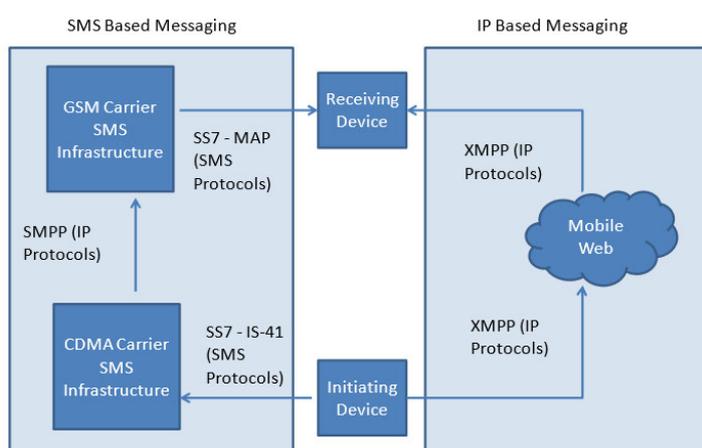


Figure 1: Routing technologies for messaging (source: Smith's Point Analytics, 2013)

In December 2013, Appstore iOS listed 2200 messaging apps and Amazon store listed 429 messaging apps (Google play does not provide quantity numbers). The multitude of MMA and the proprietary systems (natural lock-ins of users) underline a strongly fragmented and unconcentrated MMA market with a

Herfindahl index of approximative 0.0768 (own calculations) in a long-tail distribution with 3 top players, 15 followers/big players and 2180 small and niche players.

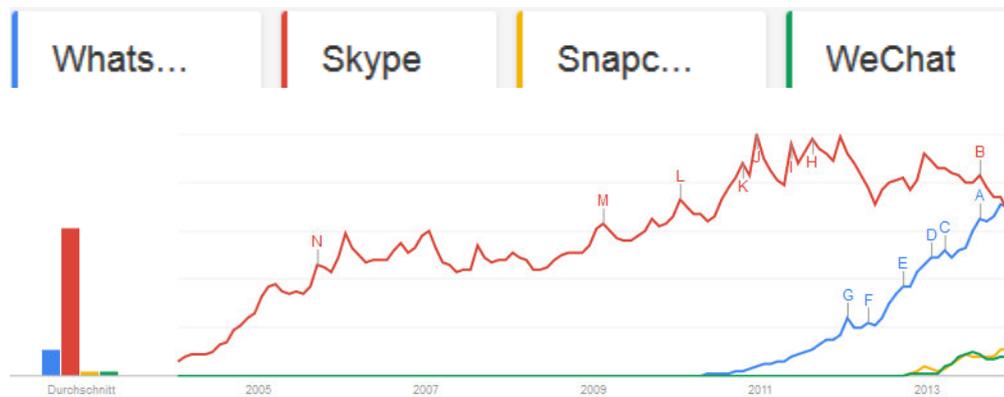


Figure 2: Google trends analysis shows WhatsApp high search term popularity against Skype, Snapchat, and WeChat. Underlining that a once innovative long-time VoIP/OTT communication player, like Skype, was not able to take high advantage of its VoIP and OTT-know-how in the new MMA market. Skype was missing the mobile first approach.

2.1 Human and Mobile Phones

Mobile (smartphone and tablet) has and is continuing to change human behaviors in profound ways. Smartphones have become literally a part of our bodies. With a smartphone we have a tool in our hands, a remote control for the world, and all seems to become a game (Shelton, 2013). Smartphones are literally always with us. Smartphones have changed internet consumption from planned separate time periods during the day to steady short-timed frequent usage. Americans look approximately 150 times per day in average at their smartphones (Mary Meeker, 2013). Today's mobile usage has grown in both direction: task-oriented search (leaning forward) and leaning-back consumption (watching videos on-the-go).

Messaging is the no. 1 activity on mobile phones, proven by various surveys (see below results from Pew Research Center and from Nielsen, 2013). It is the killer application of mobile phones and especially smartphones, meaning messaging has proven to be the core value of a larger technology, the mobile phones. Consumer would buy the expensive hardware just to run a (free) messaging application.

Cell phone activities

The % of cell phone owners who use their cell phone to...

81	send or receive text messages
60	access the internet
52	send or receive email
50	download apps
49	get directions, recommendations, or other location-based information
48	listen to music
21	participate in a video call or video chat
8	"check in" or share your location

Source: Pew Research Center's Internet & American Life Project Spring Tracking Survey, April 17 – May 19, 2013. N=2,076 cell phone owners. Interviews were conducted in English and Spanish and on landline and cell phones. The margin of error for results based on all cell phone owners is +/- 2.4 percentage points.

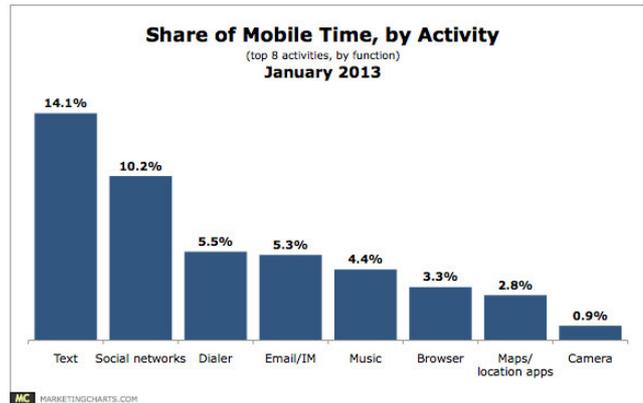
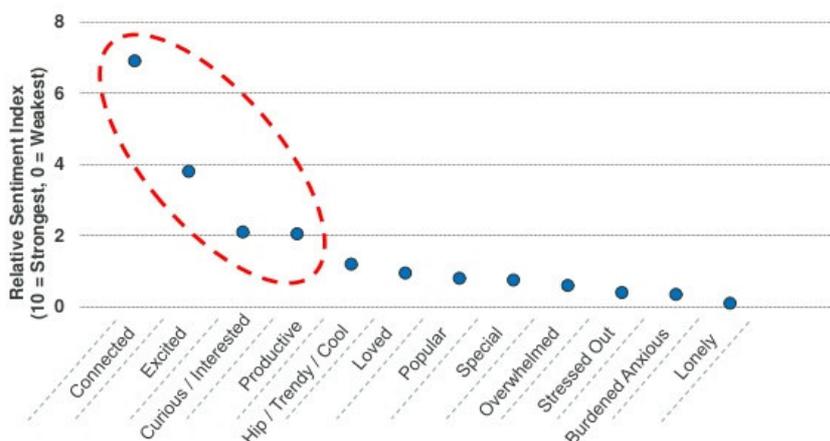


Table 1: Statistics that emphasize messaging as the killer app on mobile phones (source: Pew Research Center; Nielsen)

Messaging nurtures very basic feelings within humen, this is illustrated in below graph where people were asked how social and communication activities on the mobile would make them feel. The result: They make them feel connected, excited, curious, and productive. These statements are congruent with the findings of the author in his questionnaire. Especially the feeling 'connected' will be recognized in the result chapter afterwards as the core benefit of a messenger. These feelings are also connected to the feelings about messaging or messengers. A product that can unify these attributes can be regarded as a valued and promising product.

Smartphones = Extraordinary Attributes - Connected + Excited + Curious / Interested + Productive

USA Smartphone User Relative Sentiment Index (10 = Strongest, 0 = Weakest), 3/13
When Asked How Social and Communication Activities on Smartphones Made You Feel



KPCB

Source: IDC, 3/13. Facebook-sponsored research asked smartphone owners how an array of social and communication activities on their phones made them feel. Most owners use ~7.4 social and communications apps on their phones. Responses are indexed above.

31

Figure 3: Humen and their emotions for social and communication activities on smartphones (source: IDC, 2013)

Smartphones offer three significant benefits: human connection and communication (the core product of messengers), boundless available information, and fun and leisure. All delivered in a way to answer our needs for instant gratification. Many consumers have become fully connected customers.

Some like to see in a smartphone a small, mobile TV but this comparison goes too short: the mobile devices is much more human-like: it has ears (mouthpiece), a mouth (earpiece), eyes (camera), a skin (touch screen) and feelings (sensors). To many people, smartphones are almost an extension of their bodies, which is the fundament for the tech industry's high interest into wearables (is it also a consumer interest?), like web-enabled watches (iWatch) or eyeglasses (Google Glasses). Many key activities have already gone from the desktop to the mobile devices in terms of preferred medium:

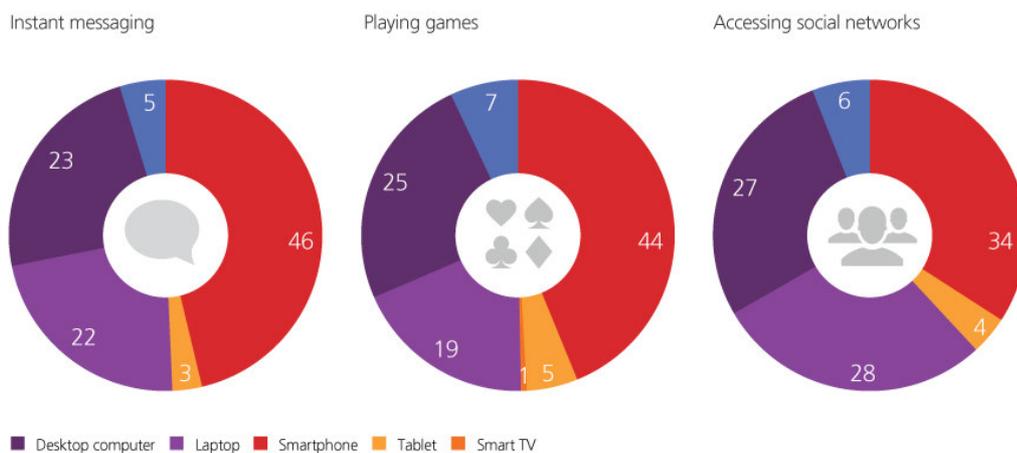
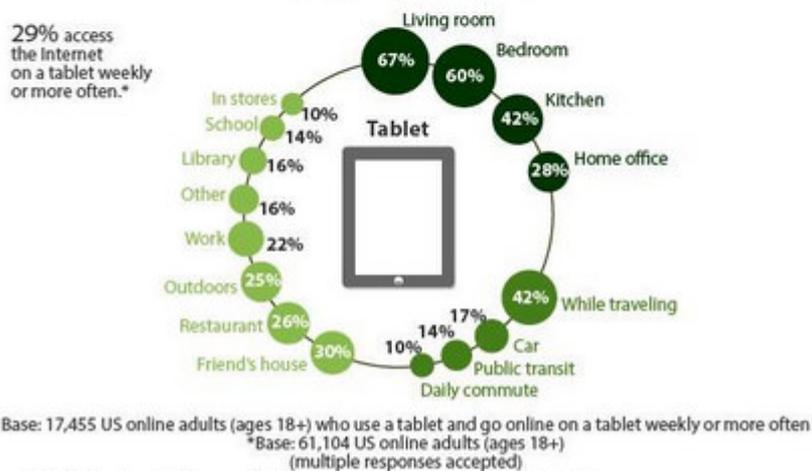
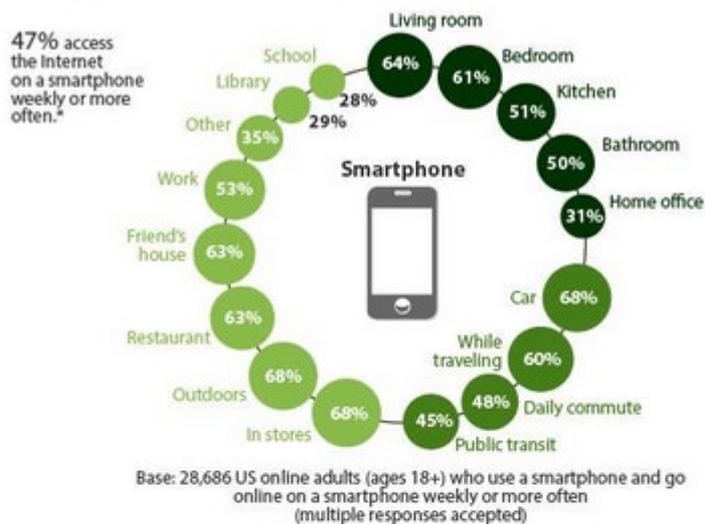


Figure 4: Smartphone is preferred for instant messaging, playing games, and accessing social networks (source: TNSglobal.com / Mobilelife panel, 2013)

Below chart graphic (Forrester Research, North American Technographics, 2013) from USA illustrates how smartphones have seized consumers' lives. Human race uses smartphones nearly everywhere. Now this chart is from the States, but Asian studies confirm that the consumption in Asia is even heavier.

"Where do you access the Internet on your . . . ?"



Source: North American Technographics* Online Benchmark Survey (Part 1), 2013

Figure 5: Where do we use our smartphones and tablets? (source: North American Technographics, 2013)

Above charts state that 60% of consumers use their smartphone/tablet in bed. Consumers are unconsciously inviting hardware devices into their mental processes like memory, sexuality, and communication. Human race couldn't internalize these devices more unless they were eaten or bio-hacked into bodies. We bring a device to bed with us consciously and enthusiastically. They are actually honest extensions of our 'selves.' We have emotionally charged relationships with these devices that are very intimate. One could go so far to say that 'they are least equal to the plant and animal kingdom symbiosis that occurs all around us every day.' (Businessinsider.com, 2013).

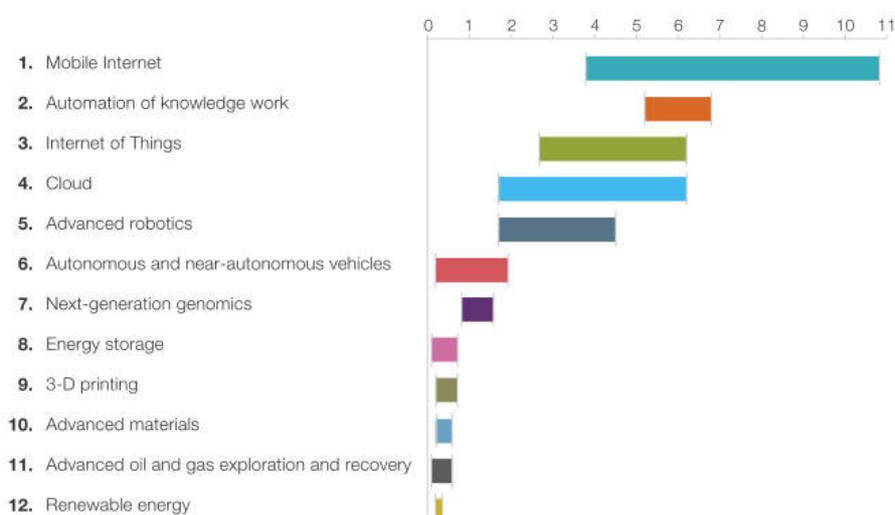
On global view, there are no signs of a slow-down of the smartphone demand. IDC finds worldwide smartphone shipments on pace to grow nearly 40% in 2013, compared to 2012. In the same time, the average smartphone selling price went down by 12% which helps smartphone adoption additionally.

2.2 MMA and Digital Disruption

MMA are based on availability of IP (internet protocol) communication and mobile internet. In a recent calculation about the potential economic impact of various technologies McKinsey Global Institute (2013) placed mobile internet as the most disruptive technology with estimated economic impact of USD 4 to 10 trillion until 2025. In the future nearly everything will be based on mobile internet.

A gallery of disruptive technologies

Estimated potential economic impact of technologies across sized applications in 2025, \$ trillion, annual



SOURCE: McKinsey Global Institute

Notes on sizing: These economic impact estimates are not comprehensive and include potential direct impact of sized applications only. They do not represent GDP or market size (revenue), but rather economic potential, including consumer surplus. The relative sizes of technology categories shown do not constitute a "ranking," since our sizing is not comprehensive. We do not quantify the split or transfer of surplus among or across companies or consumers, since this would depend on emerging competitive dynamics and business models. Moreover, the estimates are not directly additive, since some applications and/or value drivers are overlapping across technologies. Finally, they are not fully risk- or probability-adjusted.

Figure 6: According to McKinsey Global Institute (2013) mobile broadband is economically the most impactful technology.

The success of MMA has further been driven by two technology changes: the rise of apps (markets) and the rise of 'mobile-first' product approach. Both foundations have been used and adopted by MMA entrepreneurs in very effective and radical manners. Since the introduction of the App Store (iOS) by July 2008, competition has dramatically changed in various industries. The app markets has helped to open up new possibilities to innovative start-ups and brought entrepreneurship to new heights. Whereas the rigorous adoption of mobile-first principles in product development has early anticipated the consumers' inherent natural movement to mobile activities and thereby met the consumers half way. Meaning that these innovators were earlier at the mobile consumers than the companies who tried to adopt (successful) desktop solutions to a mobile solutions. Below chart points out how tech consulting company Forrester Research summarizes the current momentum of the digital disruption:

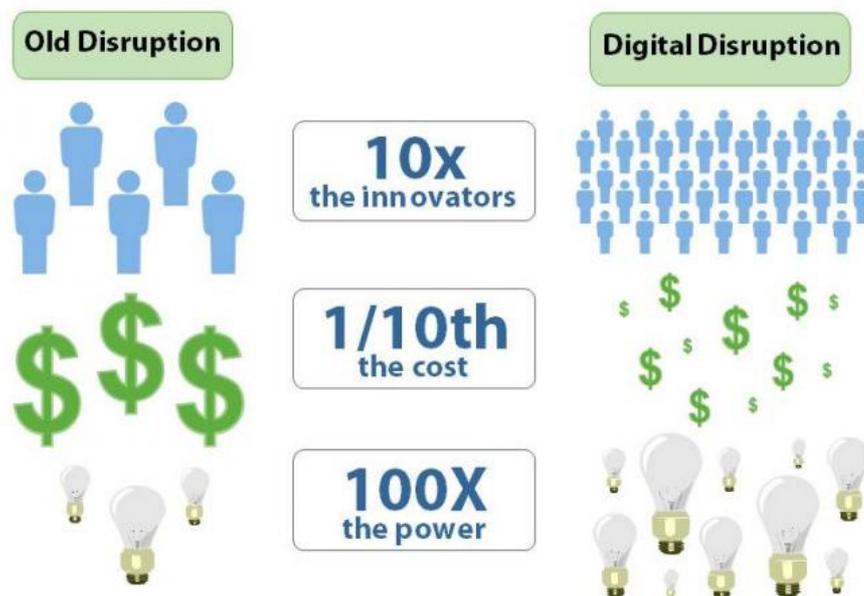


Figure 7: The book *Digital Disruption* by Forrester's James McQuivey says Digital Disruption is better, stronger, and faster. McQuivey urges businesses to access their digital disruption readiness to start to react to this new threat.

Mobile first product strategy execution can be seen at MMA in a very most progressive form. The world leader in MMA, WhatsApp, even refuses to bring its highly lively communication interface to the laptop. Why should they? They have the best user experience on the most relevant device for messaging, the mobile phone. Every return to desk-top would be a step backwards. Whereas other MMA provide a desk-top solution in order to satisfy the demand to inconspicuously chat from work place and to grow the customer base.

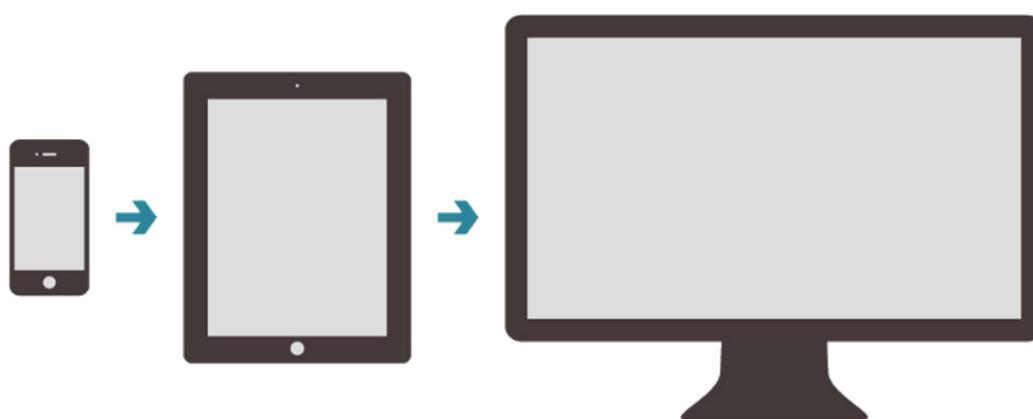


Figure 8: The visualization of mobile-first concept. The concept means that a new product design starts on the platform of a mobile phone and will then be adopted for tablet and laptop/desktop screens.

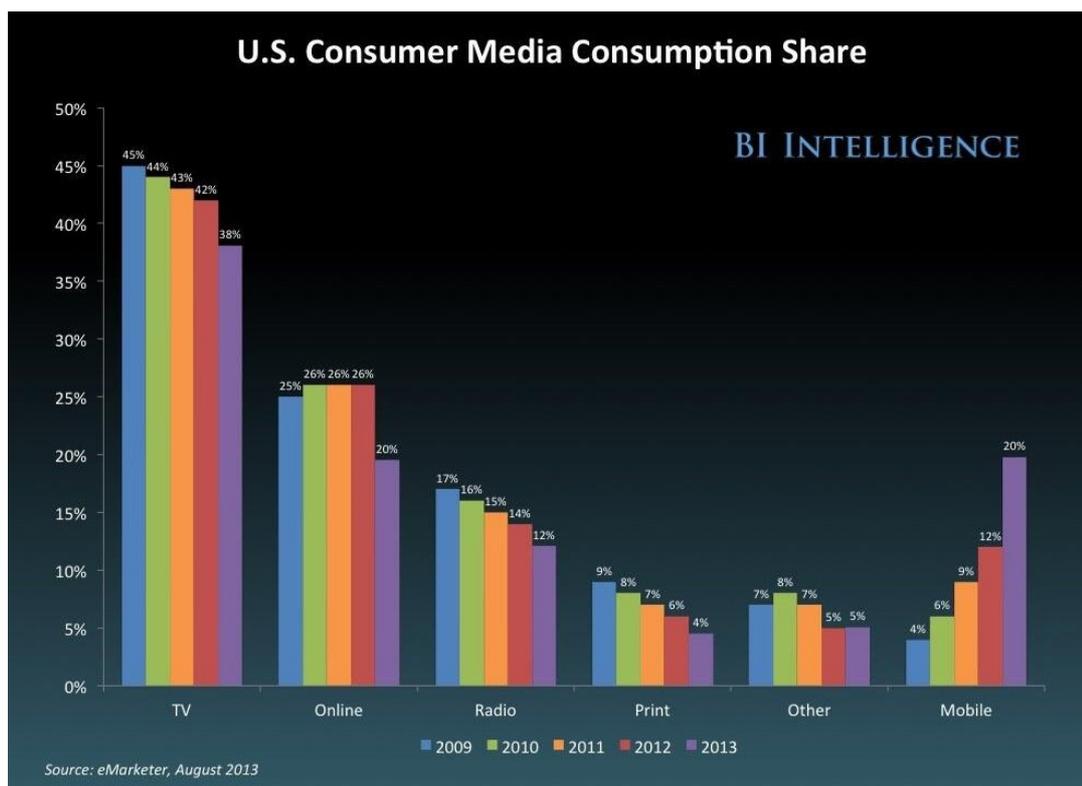


Figure 9: Mobile is the only media time growing, proving that mobile first strategy is driven by consumer preference (source: BI intelligence)

MMA are together with game app companies like Rovio (Angry Birds) and Supercell (Clash of Clans, Hay Day) some of strongest representatives of digital disruptors (Forresters, 2013) and digirati (Capgemini/MIT, 2013). They have a common digital DNA: very few employees, a huge user base, and as they are often just focusing on one value proposition, they are fast, highly efficient and with better financial performance. These entrepreneurs are foremost about creativity; how to create something new at minimum resources. This fundamental maxim stands in strong contrast to traditional and slow innovation department in big companies. Mobile apps are reaching tens of millions of users within weeks. Underlying these developments is the unprecedented speed at which mobile computers are spreading.

Capgemini Consulting and MIT (2013) have analysed why some companies (digirati) have a higher digital maturity and perform better in the new digital space. They have defined two parameters which influence digital success the most: digital intensity (degree of advanced digital capabilities in the company) and transformation management intensity (degree of effective transformation management with vision in the company). Both parameter can be found with MMA start-ups in high degrees. Digirati have significantly higher financial performance then their less digitally-mature competitors.

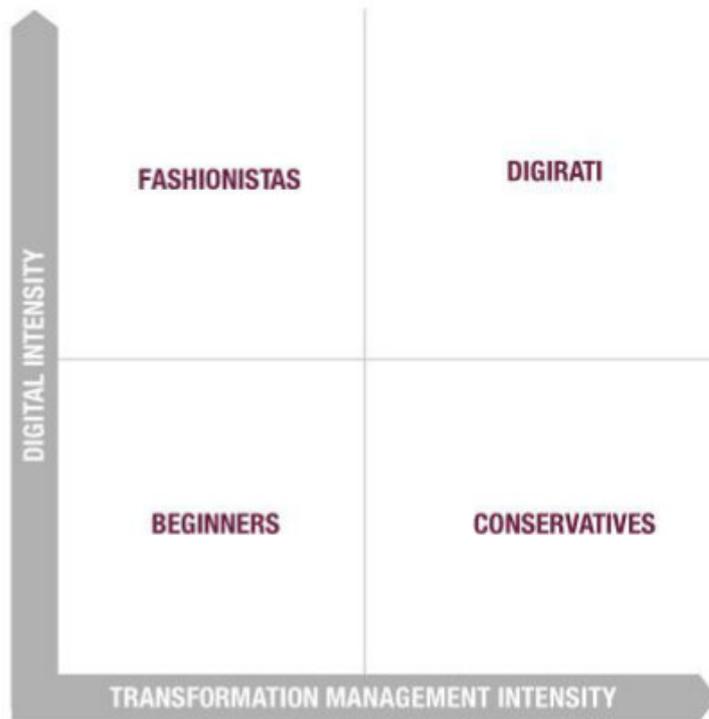


Figure 10: The digirati matrix, measuring digital strategy commitment and digital capabilities of companies (source: CapGemini Consulting, 2013).

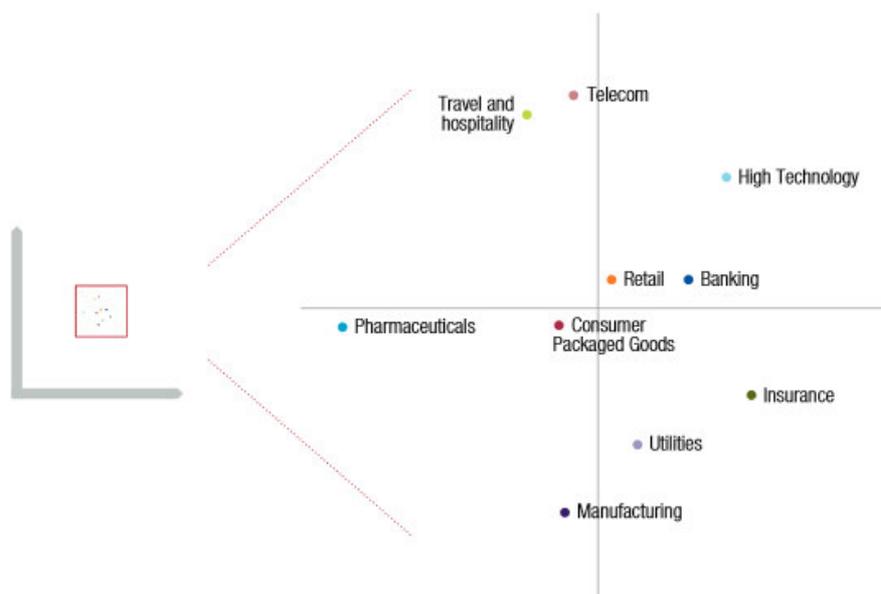


Figure 11: The average digital maturity position by industries. Remarkable is the distance between telecom and high tech. Telecom can easily accumulate and pay talents, but there is a hesitation in going forward with the new value proposition strategies as telecoms also have to deal with a numerous legacy customer base (source: CapGemini, 2013)

Telecom analyst firm Ovum (2013) states 2013 as first inflection point for MMA, when user adoption changed from traction to hypergrowth speed. 2014 is predicted to mark the next inflection point, when these MMA networks will diversify their offers to new value propositions besides messaging.

2.3 Technology Adoption

Smartphones have had one of the fastest technology adoption (if not the fastest) ever to reach the first 50% of penetration of US households in August 2012 in the USA, according to analyst Horace Dediu (2012). It took smartphones 6 to 7 years to reach this mark (depending which source is quoted and which mobile device is marked as first smartphone). This is a speed that puts high acceleration to the original concept of innovation diffusion (Rogers, 1962). Michael DeGusta (2012) from MIT and Harvard Business Review (2013) underscoring Dediu's judgement. Though, there can be big differences in technology adoption between developed and not developed countries. Furthermore, tablets (also smart mobile devices) are currently finding adoption at an even higher rate than smartphones (DeGusta, 2012).

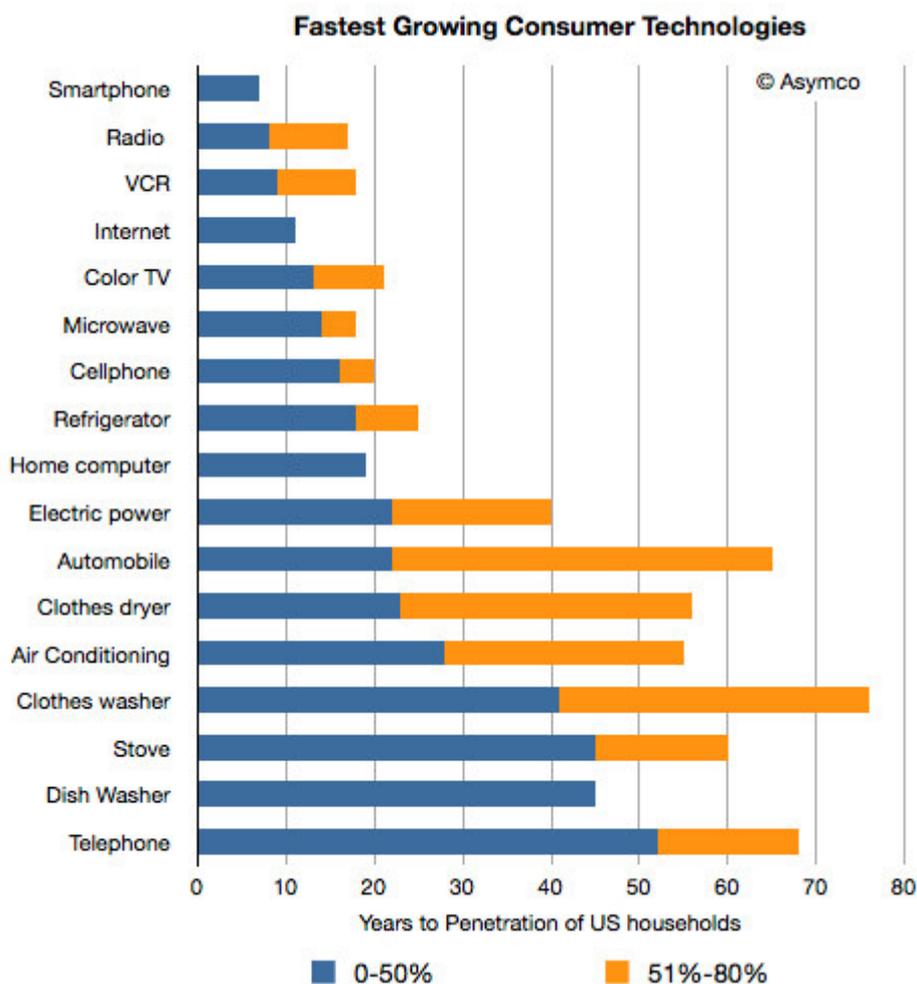


Figure 12: According to Dediu (2012) smartphones reached 50% penetration rate in US households within 6 to 7 years.

But it is not just smartphones that set records, MMA like WhatsApp have shown enormous hypergrowth, too: Skype was fast when they reached 300 million users in September 2013 within 10 years, but WhatsApp skyrocketed to this user base within 4 years, and only 7 years after the launch of Skpye. This comparison proves that technology adoption and network effects have significantly accelerated.

How long did it take to reach 300 million connected users?

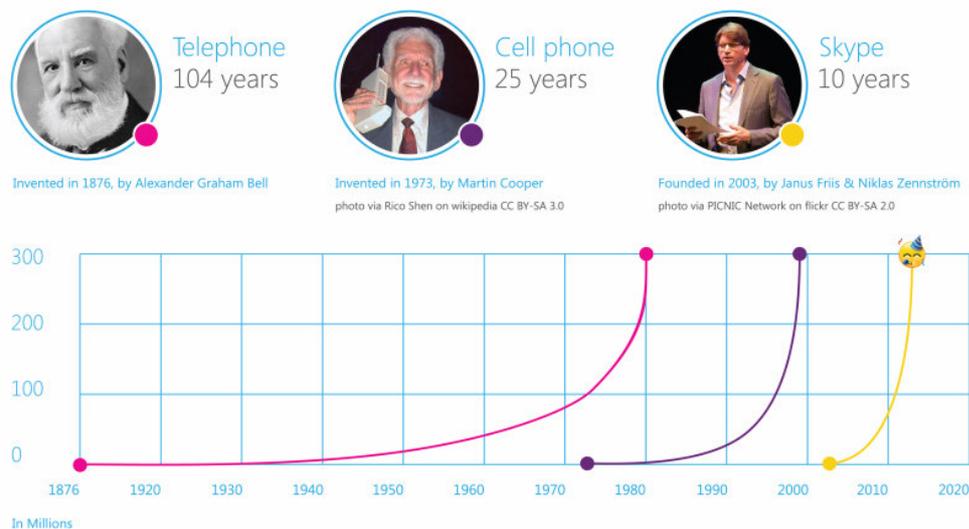


Figure 13: Thanks to smartphones and apps, technology adoption has never been faster and smoother: WhatsApp needed only 4 years to reach 300 million connected users (only 40% of the time Skype needed to reach the same user base, starting just 7 years before WhatsApp). WhatsApp didn't pay for marketing, just used word of mouth propaganda.

One of the effects of this pace of technology advancement is that companies, and especially technology companies, are forced into hypercompetition (d'Aveni, 1994) to reinvent themselves again in even shorter cycles. Major technology names like Research in Motion (Blackberry) and Nokia are being undone by rapid changes to their markets. Blackberry e.g. just opened their messenger solution (BBM) to all mobile platforms in October 2013. They could have strongly improved their current situation, if they would have changed their concept from proprietary to across all platforms much earlier. Together with over-heated financial markets and technology bubbles, this leads to the fact that technology companies tend to have a shorter existence in newer time, be it caused by exits or by acquisitions. Below chart shows that from all the constituents of NASDAQ 100 in January 2001, only 31% remain in the index today.

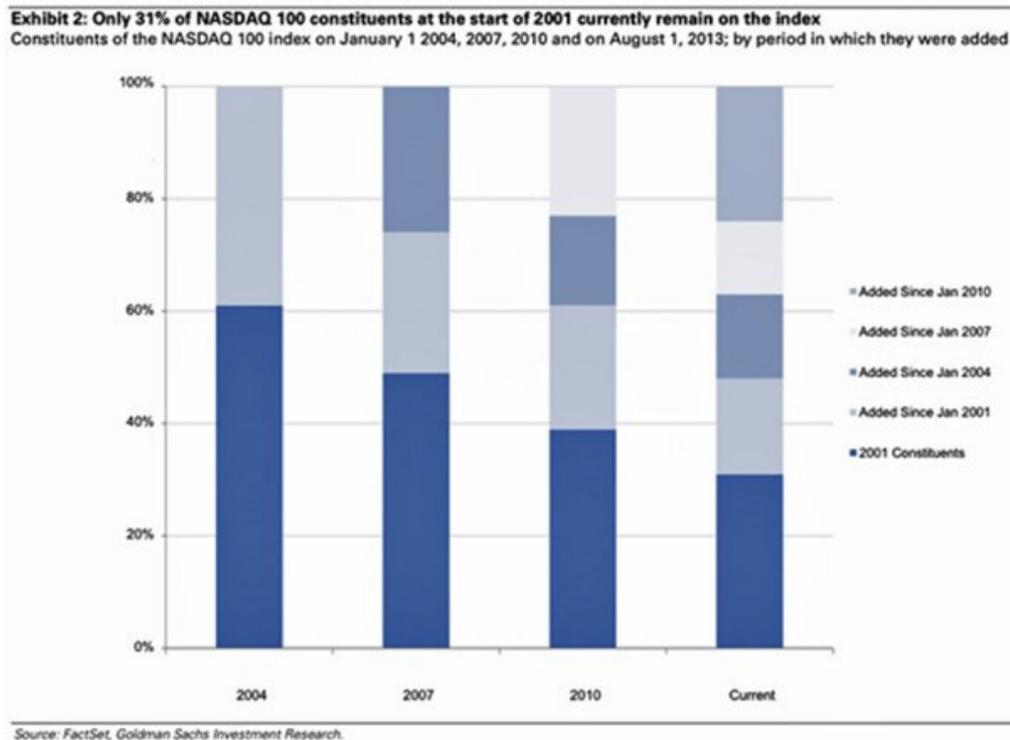


Figure 14: The newer the tech company, the lower the viability (Source: FactSet and Goldman Sachs Investment Research, 2013)

These rapid changes in technology adoption and obvious popularity of MMA brought the author to the conclusion, for the particular case of MMA, not to focus mainly on the variety of technology adoption models. Technology adoption research helps innovators to disclose potential obstacles of new technologies whereas messaging is not a new technology and has overcome possible adoption obstacles especially by facilitation through technology.

The theoretical background to the global spread of MMA in terms of technology can be found in three academic areas: 1) in the innovation and technology diffusion theories, 2) in technology adoption models and 3) in competitive actions in the diffusion of Internet technology products.

In the light of the increased global competition of MMA with many players, two recent studies are especially relevant: First, the work of Cavusoglu et al. (2010) that postulates a three-segment diffusion model and underlines the importance to recognize the influence of opponents to a new technology. The concept describes three groups (influentials, imitators, and opponents) and their timely and quantitative influence on the diffusion of a technology.

Rogers' (2003) innovation-diffusion theory offers theoretical justification for a three-segment diffusion model, which explicitly considers three kinds of actors - influentials, opponents, and imitators. Rogers conceptualized diffusion as a process in which an innovation is communicated through certain channels among members of a social system. Innovations are often associated with some degree of uncertainty.

Members of the social system use information about consequences of innovations in deciding whether to adopt or reject the innovation. Therefore, the innovation-decision process is essentially an information-seeking and information-processing activity in which individuals gather information about advantages and disadvantages of an innovation. Rogers defined opinion leaders as members of the social system who have the ability to influence other members' attitudes or overt behaviours by communicating favourable or unfavourable information about an innovation.

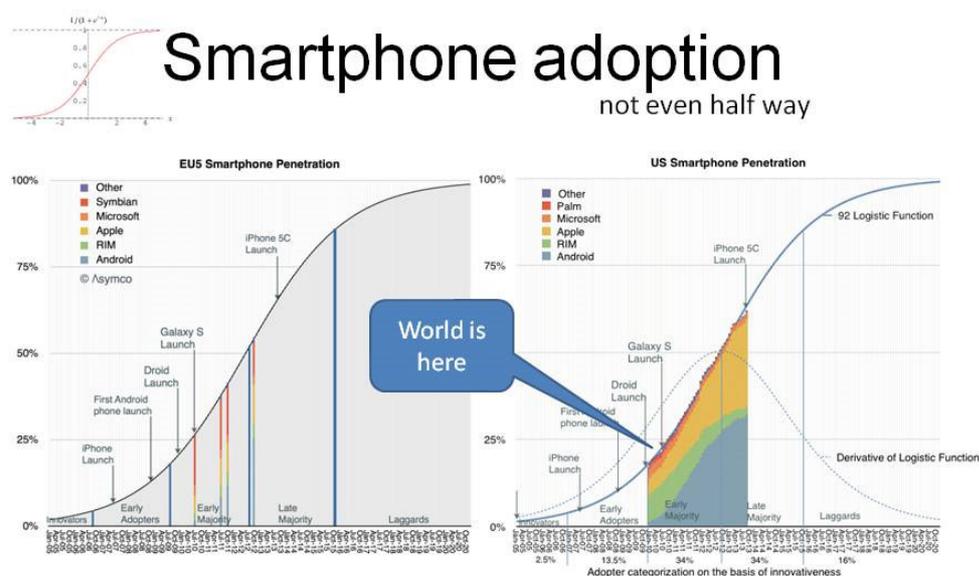


Figure 15: The example of smartphone adoption in Rogers' (2003) innovation diffusion model. According to Dediu (2013), global smartphone adoption was at about 25% in October 2013.

Below adoption example for cell phones can be compared with the MMA adoption in some perspectives. At the beginning, opponents (mobile network providers) tried to hinder the spread of MMA by officially not allowing the over the top (OTT) voIP services on their network which is a prerequisite of MMA. Other cases of opponents are the governments of Saudi Arabia, UAE and Iran, as these countries try to protect the revenues of state-owned telecom companies and limit access to communication networks (e.g. OTT) over which governments have little or no control. Some of these early opponents have changed to influentials now as they have started to co-operate with MMA for special mobile data rate plans. In the case of the MMA adoption existed influentials, smartphone geeks, who were first to check out the new messaging apps and invited their friends to join the apps too. This is different to the cell phone example where no influentials existed probably because mobile phones had a broad access to consumers from the beginning. The author does not agree with the absence of influentials in this case, but his clarification email to the authors of this study remained unanswered.

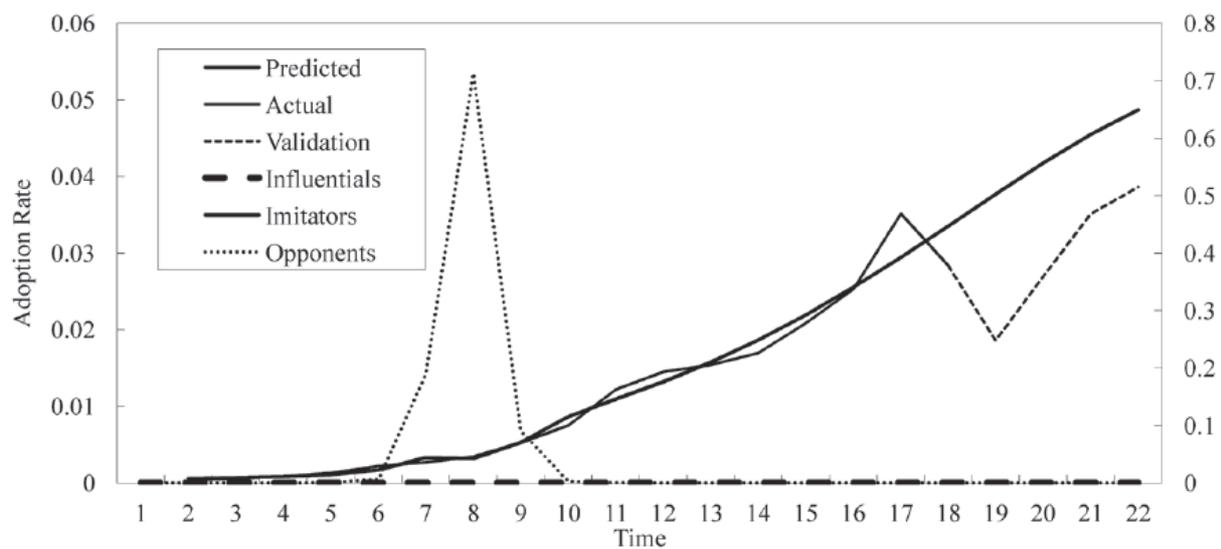


Figure 16: Example of adoption of cell phones with opponents, like health risk agitators, and the absence of influentials (source: Cavusoglu et al., 2010).

Kwon and Zmud (2002) presented a staged model of IT diffusion process going through six stages: initiation, adoption, adaptation, acceptance, routinization, and infusion. They argued that contextual factors such as community characteristics, organizational characteristics, technology characteristics, task characteristics, and environmental factors affect the six stages of new IT diffusion within a user community.

Glover et al. (1998) found that a complex relationship exists between IT diffusion, perceived productivity improvement and process redesign. This complexity can be seen in MMA: e.g. they increase our possibilities to fast initiate an exchange or a meeting, and e.g. school classes learn a new collaborative system and its advantages with MMA group chats. It is paramount for MMA to find ways to make adoption easy for consumers, therefore information system process innovations are relevant. The following factors from diffusion theory play a central role IT process innovations: need recognition, availability of technological infrastructure, past experience, trials, autonomous work, ease of use, learning by doing, and standards. Innovation and technology diffusion of is not a purely rational event, it is a broader social one (Beynon-Davies et al., 2003).

Second, Zhang et al. (2011) analysed competitive action in the diffusion of Internet technology products in emerging markets and compared the battles between Internet multinational companies (IMNC) and local vendors' intense competition on the examples of Google, eBay, and Amazon in emerging markets.

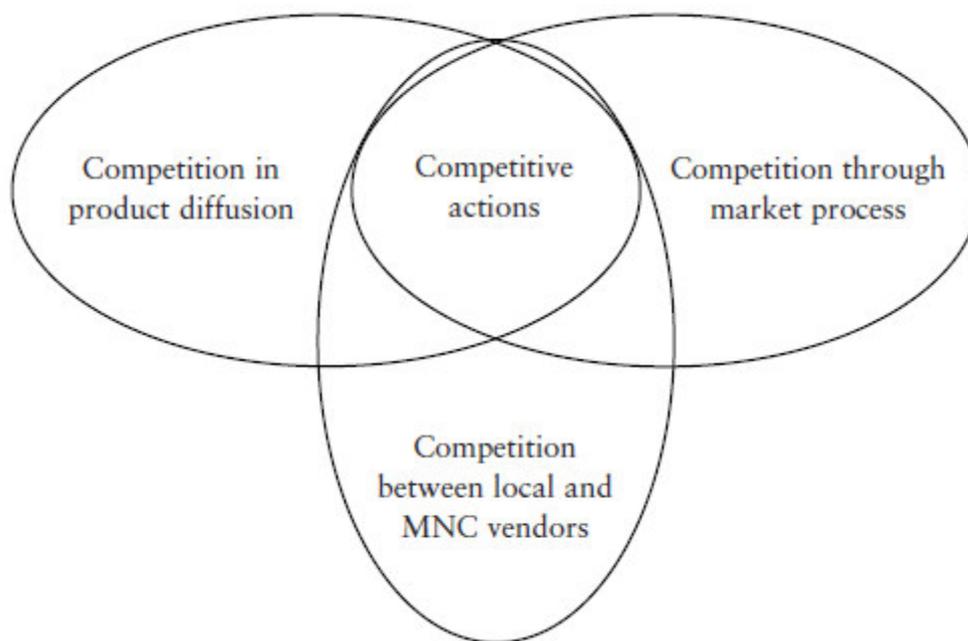


Figure 17: Zhang et al. suggest three main areas of competitive actions in the field of Internet product technology diffusion.

The findings of Zhang et al. confirm the benefits of adopting a simple repertoire of actions in emerging markets. Specifically, by carrying out a simple repertoire of actions, vendors can focus on the most important and effective actions. This findings are consistent with recent literature (Rindova, Ferrier, and Wiltbank 2010); however, it is in sharp contrast with the observed relationship between simplicity and performance in mature markets (example from author: WeChat can run simpler marketing activities in China than in mature markets like Spain, where the brand launched a TV ad campaign with world footballer Lionel Messi as ambassador). Their research also demonstrates potential detrimental effect of competing with local vendors on IMNC responsiveness. Cross-border operations unveil multinational companies' weaknesses in responsiveness. In contrast, responsiveness is one of the strongest advantages of local vendors because of their operational flexibility. Therefore, improving responsiveness in emerging markets is important (Lee 2010); however, employing it as a major marketing strategy to compete against local vendors could be harmful for IMNCs. The negative and significant coefficient of the timing of MNC actions indicates that IMNCs that carry out faster competitive responses are more likely to experience diffusion rate erosion.

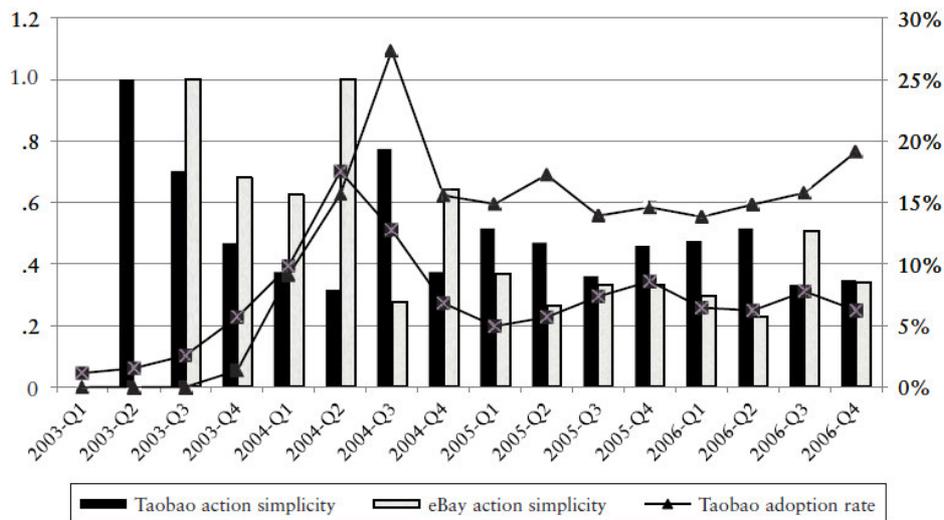


Figure 18: Firms' action simplicity and their diffusion rate in emerging markets (source: Zhang et al., 2011). The stronger Ebay marketed in the market, the stronger grew the adoption rate of the competitor.

Technology Adoption Models

Looking at the micro level of MMA, it is important to understand how technology adoption could happen that fast. The literature regarding technology adoption and network effects give several hints.

Various researchers (O'Callaghan et al., 1992; Premkumar et al., 1994; Iacovou et al., 1995; Premkumar & Ramamurthy, 1995; Crook & Kumar, 1998; Chwelos et al., 2001; Kuan & Chau, 2001) have investigated in electronic data interchange (EDI) as an enabler for technology diffusion. The anticipated benefits are a significant driver for integrating EDI into a solution. Research suggests that competitive pressure is a significant determinant of both internal and external EDI integration (Ramamurthy et al., 1999).

Meanwhile EDI is a common practice for MMA to improve their ease of use as EDI automatically saves all mobile numbers from the address book of a phone user to the MMA server in order to immediately return all contacts of the user who already use the relevant MMA. Thereby, contacts don't need to be entered one by one into the MMA in order to start communication. EDI is one of the main reasons why MMA could spread faster than the social networks in the early 2000 years.

Early technology adoption models (e.g. TAM by Davis, 1993) were mainly based on two factors: perceived usefulness and perceived ease of use which both together led to an attitude toward using and a behavioural intention to use it. The most often cited technology adoption model is the unified theory of acceptance and use of technology (UTAUT; Venkatesh et al., 2003) which has recently been updated by Venkatesh et al. (UTAUT2, 2012) with three new constructs: hedonic motivation, price value, and habit. This extended the generalizability of UTAUT from an organizational to a consumer context.

In this study of UTAUT2 were the following hypothesis (H) supported: H2, which predicted that age, gender, and experience will moderate the effect of hedonic motivation on behaviour intention such that it will be stronger among younger men in early stages of experience. H3, which predicted that age and gender would moderate the effect of price value on behavioural intention such that it will be stronger for older women. H4 theorized that habit's effect will be stronger among older men in later stages of experience. And H5 stated that the effect of behavioural intent on use will decline with increasing experience.

Basically the results from the author's research brought out the same tendencies. Especially the new parameters of hedonic motivation (the fun or pleasure derived from using a technology/MMA; Brown and Venkatesh, 2005) and price value (consumers' cognitive trade-off between the perceived benefits of applications/MMA and the monetary cost for using them (Dodds et al., 1991) are positively related to MMA adoption whereas habit (change from SMS to MMA) is negatively related to MMA adoption.

Current observations indicate that although TAM and UTAUT are a highly cited models, researchers share mixed opinions regarding its theoretical assumptions, and practical effectiveness. It is concluded that research in TAM lacks sufficient rigor and relevance that would make it a well-established theory for the IS community (Bagozzi, 2007).

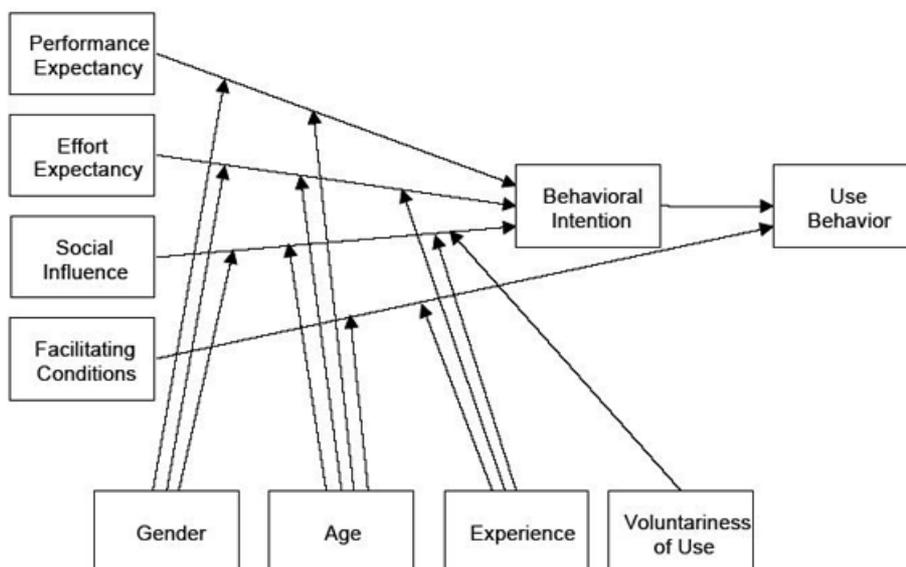


Figure 19: UTAUT (Ventakesh et al., 2003), unified theory of acceptance and use of technology, the most often cited technology adoption model.

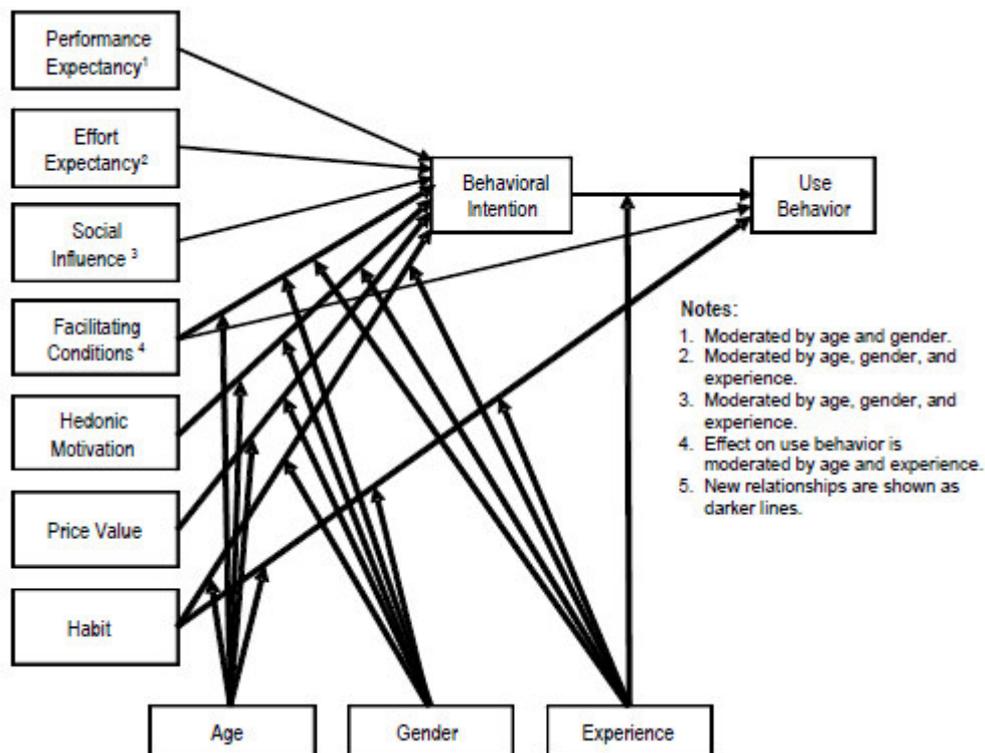


Figure 20: UTAUT2 (Ventakesh et al., 2012) with new parameters hedonic motivation, price value and habit; voluntariness of use as moderating factor was taken away from the model.

Network effect

MMA exhibit strong network effects or also called direct-benefit effects. This is the effect that a single person using a good or a service has on the total perceived value of that product or service for others. The more who use the product/service/technology, the higher its value becomes to the group (see social networks and MMA). The effects are also called positive externalities. An externality is any situation in which the welfare of an individual is affected by the actions of other individuals, without a mutually agreed-upon compensation (Gandal, 1994; 1995). There are also negative externalities that can cause a decrease in welfare (e.g. traffic congestion in a communication network).

Afuah (2012) argues that besides network size the following parameter are of strategic impact on a network's value: a network's structure (feasibility of transactions, centrality of members, structural holes, network ties, the number of roles each member plays) and its conduct (opportunistic behaviour, reputation signaling, perceptions of trust). These parameters can be applied in different MMA examples: 1) Feasibility of transactions: MMA made group chat possible which does not exist in SMS. 2) Reputation signalling: Snapchat has a high reputation for creative messaging which gives them a superior market position in the youth segment. 3) Perceptions of trust: WhatsApp repeatedly confirm that they will not introduce advertisements or use the messaging data for marketing activities which creates a superior element of trust in WhatsApp, even though the encryption level in WhatsApp messages is rather low.

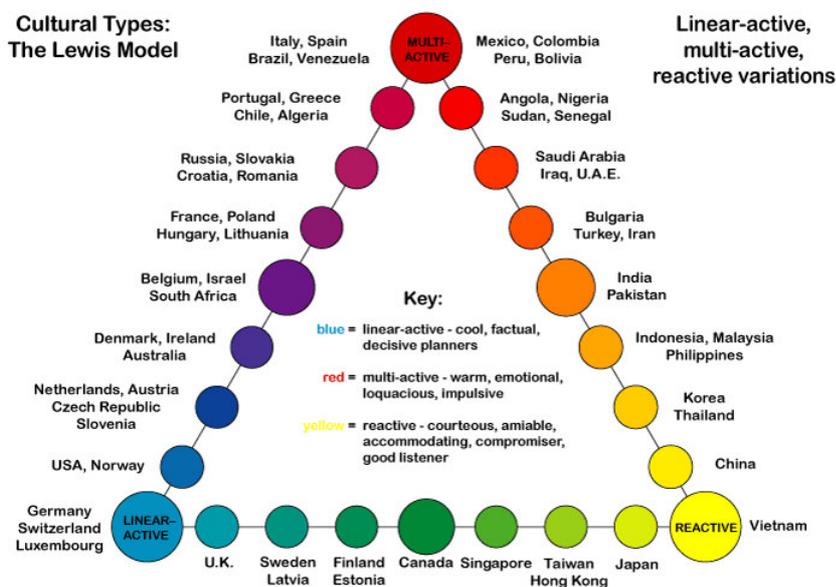
As messaging with work colleagues and with school colleagues is one of the major appliance o MMA and give MMA also the aura of social networks, it makes sense to reflect the work of Zhang & Venkatesh (2013) who analysed the effect of online and offline communication on job performance. As a contrast to this research is the study of Pollet et al., (2011) which states: 'Use of social network sites and instant messaging does not lead to increased offline social network size, or to emotionally closer relationships with offline network members'.

2.4 Cultural communication research

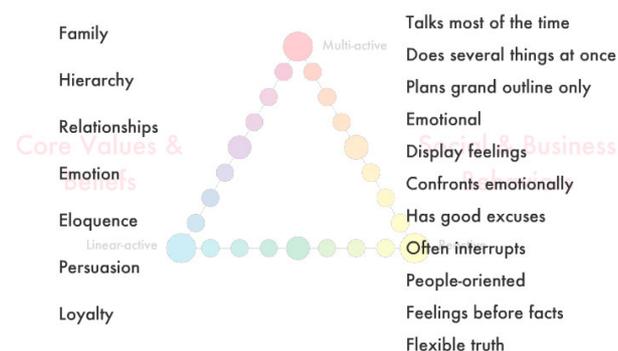
In relevance to international communication behaviour patterns in MMA the separate cultural communication research of Hofstede (1980), Lewis (2000) and the recent work of Putit et al (2007) can provide guidance to the subject.

Hofstede uses six different dimensions to describe cultural communication differences: 1) small power distance vs. big power distance, 2) individualism vs. collectivism, 3) masculinity vs. femininity, 4) structured situations vs. unstructured situations, and 5) long-term orientation vs. short-term orientation. Examples: Openness to share is related to collectivism or a low rating in uncertainty avoidance is related to high quantity of communication in MMA which can easily change a former agreement on a certain subject.

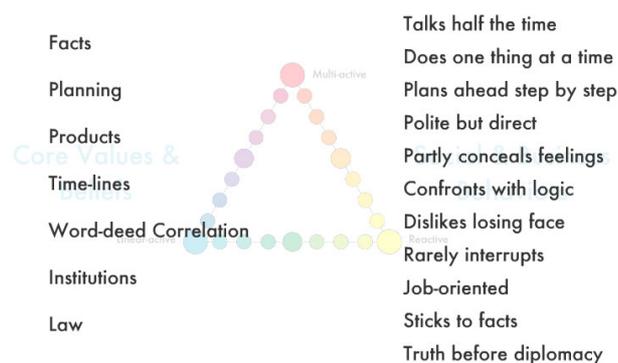
Lewis rationalizes 'cultural behaviour is the end product of collected wisdom, filtered and passed down through hundreds of generations as shared beliefs, values, assumptions, notions, and persistent action patterns.' He uses three dimensions to describe different communication attitudes in his Lewis communication model: multi-active, linear active, and reactive (see below).



Multi-active chief characteristics:



Linear-active chief characteristics:



Reactive chief characteristics:



Figure 21: Extract screens from Lewis cultural communication model (2000).

A critic point to the cultural generalisation works of Hofstede and Lewis is the research of Putit et al (2007) who analysed micro-cultures and consumers adoption of technology and came to the conclusion that there is a need to re-evaluate the concept of national culture. They summarized that 'the impact of culture on, and cross-cultural differences in, buying behaviour and purchase intentions are extensively researched in the marketing literature. The intuitive conclusion that the social influences to which one is exposed alters attitudes, beliefs and values and thus ones preferences for goods and services is borne out by that research. However, in almost all research on national culture on homogeneity of the nation is assumed through the use of single, mean values on a limited series of dimensions (Hofstede) or syndromes (Triandis).' They argue that some societies are strongly multi-cultural (e.g. Malaysia) and that the assumption that all nationalities are mono-cultural is fundamentally flawed. Their point of view is founded on the suggestions by Steenkamp

(inter alia) that there is a need within the cultural impact research to 'account for within-country heterogeneity'.

2.5 New Technology Possibilities in MMA

In this section the author discusses the literature about mobile marketing, mobile commerce and location-based marketing/services as they are referred to be new technology possibilities in MMA. Due to its vast area, this section just covers a high-level overview of theoretical frameworks from these fields. More business related case-studies and MMA results in these fields will be pointed out in the research section, secondary research.

2.5.1 Mobile Marketing

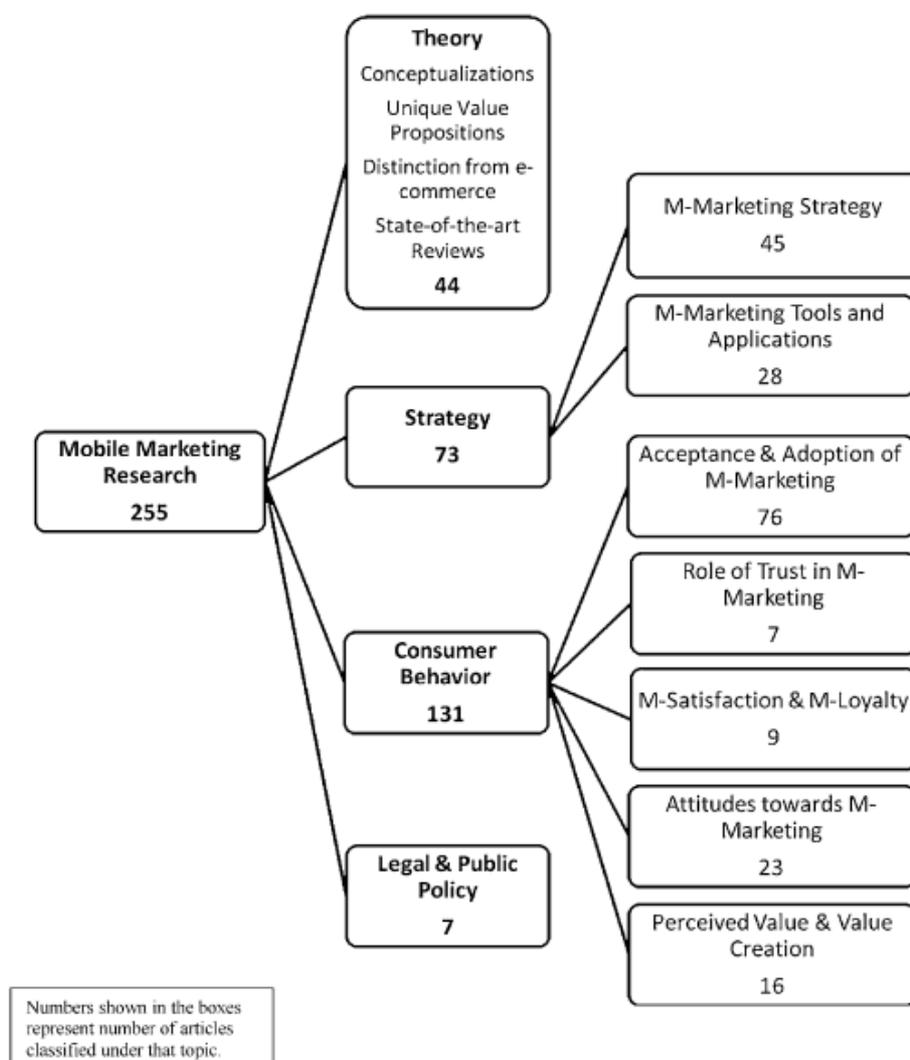


Figure 22: Vanali and Toker (2009) reviewed 255 peer-reviewed journal articles from 82 journals published between 2000 and 2008 in order to classify the literature on mobile marketing and access the state-of-the-art.

Bauer et al. (2005) found that entertainment value and information value are the strongest drivers for attitude toward mobile advertisement. Vanali & Toker (2009) stated that consumer behaviour and especially acceptance models of mobile marketing were the focus of academic mobile marketing research by then.

2.5.2 Mobile commerce

Mobile commerce has gone through three stages of evolution, starting with mobile portals (1997) through mobile internet (since 2000) to mobile apps (since 2008). This three-step evolution (Kourouthanassis et al., 2012) went from walled gardens to open internet and returned with mobile apps to a walled gardens again. Basically every MMA is a walled garden, set into the open internet. The more MMA exist, the more fragmented will be the market, the less the network effect plays, the more consumers will ask for a tool that could integrate several MMA. According to this study, this claim already is one of the strongest preference from consumers after the top-of-mind demand for encrypted messaging. But there is currently no answer to this claim and there probably won't be a solution to this soon. As one of the rare integrative solutions, Uni Messenger states 'it would not be a good business to try to combine communication between WhatsApp and WeChat, as such a solution would make the underlying solutions redundant'. Furthermore, an integrated solution would need to access the application programming interface (API) of the underlying MMA which those will not allow for obvious reasons.

Often viewed as an extension of e-commerce, mobile commerce is regarded as a distinct channel that conveys ubiquitous value by providing convenience and accessibility at any time and in any place (Balasubramanian, Peterson, & Jarvenpaa, 2002). In addition to the 'anytime' access to services provided by traditional e-commerce, m-commerce allows individuals to accomplish business transactions 'anytime and anywhere' (Saidi, 2009). Research into mobile shopping and mobile commerce is still in early stages. Researchers interested in mobile commerce have used quantitative approaches to investigate topics such as adoption of mobile shopping (Kim, Ma, & Park, 2009; Ko, Kim, & Lee, 2009), general attitudes toward mobile commerce (Bigné, Ruiz, & Sanz, 2007), and perceived mobile service value (Gummerus & Pihlstrom, 2011).

However, many consumers who have mobile shopping experience are unwilling to use mobile devices continuously to do their shopping; as a result, the growth of mobile shopping remains relatively slow (Kang, Hung, Yang, & Hsieh, 2010). What is needed is further empirical knowledge concerning mobile consumers' characteristics and mobile channel utility. To develop mobile web shopping in an effective manner, Kang et al. (2012) concluded that information concerning the type of mobile consumer who wants to integrate mobile shopping into their consumption behaviours would be essential. With this issue in mind, they investigated whether the big five personality traits (openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism) were related to mobile communication, mobile distribution, and mobile accessibility utilities and ultimately willingness to mobile shop, and whether mobile communication, mobile distribution, and mobile accessibility utilities were related to willingness to mobile shop. Personality traits are firm parts of a person's disposition rather than simply habits. Therefore, traits are stable over time and directly affect behaviour (Matthews & Deary, 1998).

Kang et al. referred to Kotler (1997) who summarized that marketing activities exist by means of various channels. Every marketing function is accomplished through one of three common types of marketing channels: communication channels, transaction channels, and distribution channels (Peterson, Balasubramanian, & Bronnenberg, 1997). Further, in the e-commerce context, Li, Kuo, and Russell (1999) identified that a consumer considered a channel to be high in utility if its attributes were perceived to excel in the three dimensions: communication, transaction, and distribution utilities.

Kang et al. found in their study about mobile consumers that mobile communication utilities (degree of fulfilling consumers' information need for the purpose of decision making; Li et al., 1999) and mobile accessibility utilities (degree of which time and effort are involved in using a channel) were key factors in predicting willingness to mobile shopping. Mobile distribution utilities (degree of mediating/facilitating the payment of a product, transferring its ownership and execution of post-purchase services) was positively related to mobile communication and mobile accessibility utilities. Interestingly, contrary to their hypothesis, mobile distribution utility was negatively associated with willingness to mobile shop. In other words, mobile consumers who perceived low levels of mobile distribution utility were likely to be willing to mobile shop. It appears that consumers who are willing to mobile shop may accept and not seriously consider the disadvantages of mobile distribution utility (e.g. pre-purchase inspection) due to the well-known drawbacks of the mobile web shopping format.

Their findings demonstrated that more extraverted, more agreeable, and less neurotic mobile consumer were likely to perceive high levels of mobile communication utility. More conscientious mobile consumer were likely to perceive high levels of mobile distribution utility and low levels of mobile accessibility utility. Finally, they identified that consumers who were more open to experience, more extraverted, and less conscientious were likely to have high level of willingness to do mobile shopping.

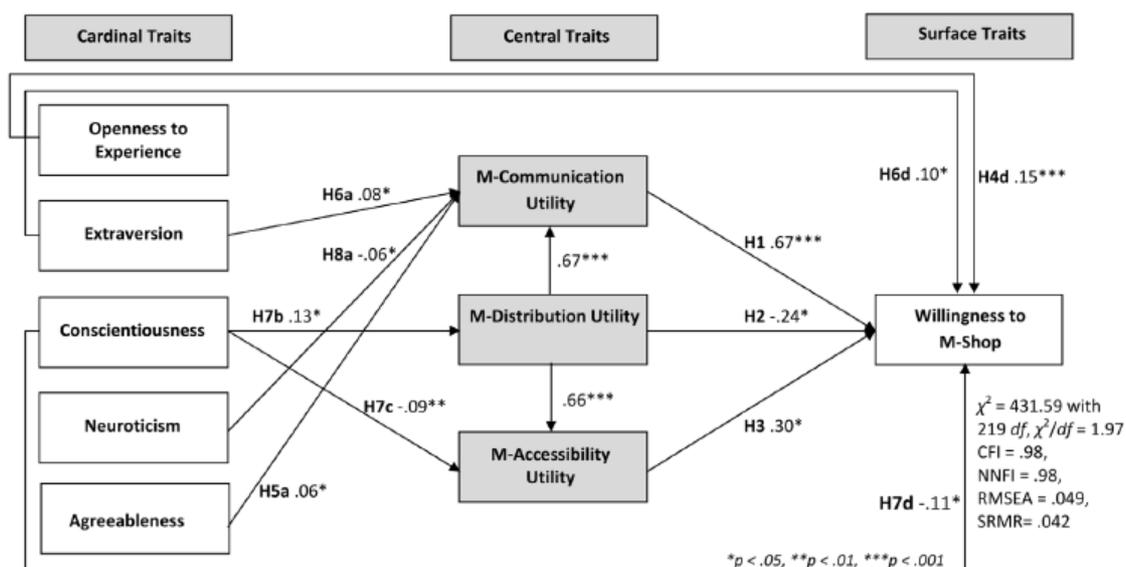


Figure 23: The model of Kung et al. (2012) puts the big five personality traits into relevance to willingness to shop

From the managerial perspective, Kung et al.'s analysis suggested to enhance the mobile shopping web's mobile communication utilities. Further findings were: Mobile retailers and mobile service providers need to provide a broader assortment of mobile merchandise, along with up-to-date and quality information that satisfies mobile shoppers' specific needs. Limited previews could facilitate trial and possibly purchase. Pinch-and-zoom views of retail product images, allowing for close product examination, could enhance mobile consumers' decision-making abilities. Further, there is a need for enhancement with regard to the search and navigation functions, as well as monetary transaction systems and security. To intensify mobile accessibility utility, mobile retailers need to raise the degree of interactivity, provide convenient access, and make customized-information more available by improving mobile web functions. Fast download speeds as well as stable Internet connectivity need to be improved.

Most successful mobile commerce providers like eBay, Amazon and Apple succeed because they make it very simple for customers to buy via mobile devices. They provide top-class selection and check-out systems in mobile first strategy which create by personalization features superior (to desktop) customer experience on the mobile device. These mobile front-ends allow instant one-click purchases, once set up with a connection to a credit or debit card. A study by eMarketer (2013) states that approximately 25% of online retail transactions in the U.S. will take place on mobile devices, more than double the number that occurred in 2012, with a volume of USD 434 billion. Forrester (2013) quotes the same figure at USD 370 billion.

While mobile is a relatively new channel, customers have been quick to begin using it, along with web sites, traditional stores and physical branches. An IBM study (2013) reported that three out of five (60%) of the companies surveyed said their customers research products on mobile devices for later purchase online via a computer. Likewise, almost half (48%) said their customers purchase products directly using a mobile device (up by 5% since last year), and a similar proportion (44%) report that their customers use mobile devices to research products for later purchase offline. Additionally, 17% said their customers are using their mobile devices to conduct research while in a store or a branch.

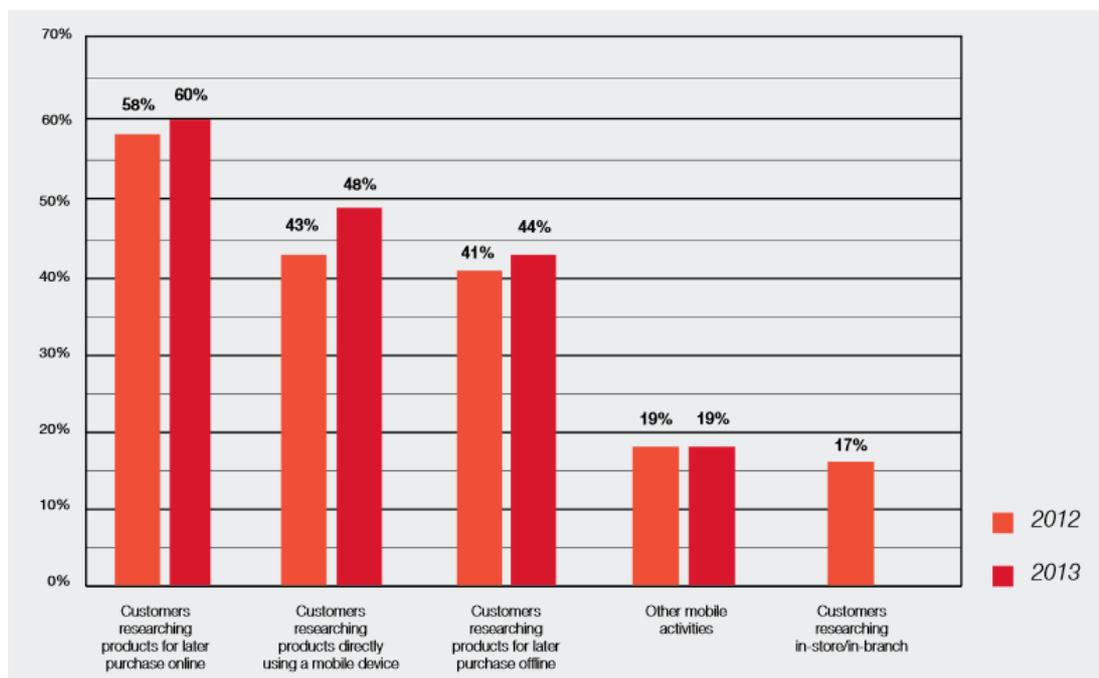


Figure 24: How are your customers interacting with you via mobile devices? Source: IBM, survey with 500 e-commerce owners, 2013

2.5.3 Location-based marketing / services

The field of location-based advertising and services has a strong relevance in the e-commerce possibilities of MMA. Newest data (Pew Research Center, 2013) shows that 74% of American adult smartphone owners aged 18+ use their phones to get directions or other location-based information. 30% of social media users aged 18+ say that they include location in their posts in at least one of their accounts. This figure is up from 14% in 2011. There is also a modest drop 18% to 12% of smartphone users who use check-in location services (mainly with Facebook places, Foursquare and Google Plus among other services). This rather low number can be explained by privacy reasons and by the fact that there is little marketing reward for the consumer to do that yet.

Location-based advertising is targeted to overcome geographical and information gap by reaching mobile consumers when they are proximate to advertisers' location. Banerjee (2008) investigated into the concept of mobile and location-based advertisement, emphasizing on the different strategies of location-based advertisement and location-independent advertisement and on the difference of receiving these messages in private or public locations. He analysed convenience vs. intrusiveness of such 'contextual' advertising and emphasized to advertiser the need of consumers to 'like' these advertisements and find them 'useful' even though they be location-based.

Near location and high task-congruency are important influences on the effectiveness of location-based advertisement. Interestingly, opposite to Banerjee's hypothesis, people perceived location-based advertising

not more useful than location independent advertisement. Some of the confirmed hypotheses were: (1) Mobile advertising was found to be more useful in situations with higher consumption congruity. (2) Mobile advertising will cause lower perceived usefulness in private locations.

Places are known to influence the role people play and thus it influences also the receptiveness to different types of information (Dholakia & Dholakia, 2004). If a location-based advertisement was received in a private location, then Banerjee recognized a 'location inertia', as it appeared that the actual distance to a store does not matter (the distance for private and public locations were specified as the same) Though, when received at private location, consumers were less likely to avail the offer.

In this context, Pedersen (1997) defines Privacy 'as the boundary control process where the individual controls who he or she establish contact with, how much and what nature the interaction will be. Privacy concerns are higher in private locations like residences' (Altman, 1975).

2.5.4 Openness to share and privacy concern

Privacy concerns are key to all of the above three subjects. The openness to share data varies strongly by cultures in such way that North America and Europe are more conservative with privacy matters than Asia and the Latin world. The following survey results (sample 1,002 adults) by Pew Research Center (July 2013) pronounces the current status quo regarding anonymity, privacy and security online in the United States: 86% of American Internet user (aged 18+) have taken steps online to remove or mask their digital footprints. 55% have taken steps to avoid observation by specific people, organizations, or the government. 59% do not believe that it is possible to be completely anonymous online, while 37% of them believe it is possible. In this context the rise of ephemeral and self-destructing media and messaging, like MMA Snapchat and Wickr are providing it, are an answer to the consumers' worries for two reasons: it decreases the digital footprint of a person and helps to keep the growth rate of stored data (big data) at a slightly low speed.

A critic point to above literature review is that various cited research results are from the American market, and for several topics, the United States are not the average indication for the current status quo, but still a substantial referral.

3.0 Primary Research & Methodology

This chapter details the research methodology of the primary research that was used about MMA.

3.1 Objectives

This project aims to be a strategic navigator for MMA, to map an overview of the MMA competitive landscape and the possible next strategic moves that could be done by MMA, with an emphasis on three fields of new technology possibilities which refer in this study to mobile marketing (MM), mobile commerce (MC) and location-based service/features (LBS). This overview can be given best by analysing a) the earlier development, b) the status quo and c) new possibilities.

In order to answer b) and c), the main research questions of this project are:

- What are consumer (not) doing in their MMA?
- What would consumer (not) like to do in their MMA?
- How far can mobile marketing, mobile commerce and social media and location-based features sustain in MMA?
- What is the expected subscription fee for a MMA in the eyes of MMA consumers?

With at least two questions regarding each of the three focused fields: mobile marketing, mobile commerce and location-based features, the questionnaire delivers counter-verified statements about these focused areas. The author's questionnaire was inspired by the Hansen Birkinshaw questionnaire to visualize a larger sentiment or assessment regarding a subject.

3.2 Approach

After having analyzed the competitive landscape of MMA the author has set up four hypotheses:

H1: The activities and preferences in MMA differ by **age groups**.

H2: The activities and preferences in MMA differ by **cultural backgrounds (continents)**.

H3: The activities and preferences in MMA differ by **MMA communication types**.

H4: The activities and preferences regarding MC and MM will differ by **age groups and gender**.

H5: The majority of users are willing to pay a small annual amount like USD 1 for a MMA.

These hypotheses seeks to explain, on high-level basis, the success or failure potential of different MMA features in different segments and in different regions of the world. Hypothesis H4 may be an indication that the public opinion (driven by mobile experts) is ahead of the preference or readiness reality of the mobile consumers.

In order to validate these hypotheses, an online questionnaire for consumer and expert research has been set up with the following sections:

- 1) 5 introduction questions about MMA choice and demographics
- 2) Core part A: measurement of activities and preferences in MMA (22 items)
- 3) Core part B: product concept testing with absolute judgement questions (15 items).
- 4) 1 question about mobile commerce (with one follow-up question)
- 5) 1 question about mobile marketing
- 6) 1 question about the MMA pricing
- 7) Expert input
- 8) 1 administrative question

The questionnaire can be look up at: <http://www.6mobiles.com/wp/wordpress/survey-2/>

Obviously, this questionnaire seeks to make an overall statement about MMA and does not go in-depth into one single subject. This research shall rather be the starting point for further detailed investigation in a single matter (e.g. why is feature X not popular based on this survey). The survey is rather in the tradition of newer kinds of value proposition/product concept testing (Osterwalder, 2010).

It takes about 10 minutes to answer the questionnaire, 95% of which are multiple choices questions. The only two free inputs questions are regarding mobile commerce outside of an app store and the expert input field.

The content of the questionnaire:



Thank you for participating in this global survey.

This one-page questionnaire aims to understand among others:

- what you are (not) doing in your mobile messaging apps (MMA) like WhatsApp, WeChat, LINE or Viber.
- what you would (not) like to do in your MMA, especially regarding new possibilities that some MMA offer.

Your participation in this survey is highly appreciated. Your responses will be kept confidential and your anonymity will be ensured. Please fill in the survey in one row in order to capture all your answers.

1. Which mobile messaging apps do you use? Multiple choices possible.
Not considered as mobile messaging apps (MMA) in this survey:
Facebook, Twitter, Instagram, and Tumblr (social networks).

- Swisscom iO Messenger
- Kik
- Google Hangouts
- WeChat
- Blackberry Messenger
- Viber
- Pinger
- FB Messenger (Facebook Messenger)
- Hike
- Tango
- LINE
- WhatsApp
- Snapchat
- Joyn
- Apple iMessage (is a messenger but not an app)
- Saya Instant Messenger
- KakaoTalk
- QQ Messenger
- Skype Mobile App
- Nimbuzz

7. Below is a list of possible features in **mobile messaging apps (MMA)**. Please indicate which features you are using in your MMA, and how often. Please also indicate which features you would **(not)** like to use in your MMA.

Not considered as mobile messaging apps in this survey: Facebook, Twitter, Instagram, and Tumblr (social networks). Please do not refer to them when answering below questions; only refer to activities which you do in all your MMA. Consider that all following activities are free in MMA, besides an annual subscription fee in some apps.

	several times per day in my MMA	about once per day in my MMA	few times per week or less in my MMA	never did, but would like to do in my MMA	don't like to do in my MMA
Making local messaging	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Making international messaging	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Messaging with my class mates (school class group chat)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Messaging with my work colleagues (work group chat)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Exchanging pictures and video	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Exchanging voice messages (walkie-talkie)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	several times per day in my MMA	about once per day in my MMA	few times per week or less in my MMA	never did, but would like to do in my MMA	don't like to do in my MMA
Exchanging files (e.g. word or excel documents)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Exchanging creative elements (like sketches, edited photos/videos or self-destructing photos; editing happens in MMA)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sharing my locations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Making local calls	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Making international calls	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Making video calls	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	several times per day in my MMA	about once per day in my MMA	few times per week or less in my MMA	never did, but would like to do in my MMA	don't like to do in my MMA
Doing online games in the app	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Updating my profile/time-line with activities and photos in my MMA	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Making friends with new people nearby - made visible by my MMA	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sending money to a friend's smartphone	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Buying stickers / chat emoticons / emojis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Buying goods / services (e.g. virtual gifts or McDonald meal or games)

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
several times per day in my MMA	about once per day in my MMA	few times per week or less in my MMA	never did, but would like to do in my MMA	don't like to do in my MMA

Following and exchanging with my favorite brands and stars (by adding their profile / QR code) in my MMA

<input type="radio"/>				
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

Receiving / using (location-based) mobile coupons from brands/stores and stars that I follow

<input type="radio"/>				
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

Receiving new music song suggestions according to my profile

<input type="radio"/>				
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

Using a language translator in my MMA

<input type="radio"/>				
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

Do you do something else in your MMA which is not listed here? Or would you like to do something else in your MMA? Please enter it below:

<input type="radio"/>				
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

8. How much do you agree or disagree with each of the following statements in connection with mobile messaging apps (MMA)?

	strongly agree	agree	neutral	disagree	strongly disagree
I prefer texting to speaking in most of my mobile communication.	<input type="radio"/>				
I have strengthened many existing relations by my MMA.	<input type="radio"/>				
I send much less SMS since I use a MMA.	<input type="radio"/>				
I would like to have one MMA that integrates several different messengers.	<input type="radio"/>				
My messages must be sent encryptedly (so only the recipient can read them).	<input type="radio"/>				
	strongly agree	agree	neutral	disagree	strongly disagree
I prefer a communication interface with notifications 'online, send, delivered, read' to an interface without these.	<input type="radio"/>				
I would like to have a chat group for all regular visitors of my favorite leisure place (e.g. fitness club / concert location / sports club / dance	<input type="radio"/>				

club).

I would like to have a MMA that lets me easily connect with people located nearby (not friends yet, but people with same location / having similar profile / interests).

I would proactively contact people located nearby (not friends yet) via such a MMA (see above; e.g. to get information when the place is new to me).

I would like to have a MMA that could receive public messages / news from people nearby (e.g. 'Tonight at 6pm is happy hour time at bar XY'; or neighbor talk).

strongly agree agree neutral disagree strongly disagree

I would like to have topic-related discussions in my MMA with people nearby (not friends yet), e.g. discussion of mothers or a specific ethnic group in the same area.

The mobile phone is a very good mean to find the right product to buy.

I would like to pay via my mobile phone for goods and services.

I would like to use my mobile phone as remote control (e.g. CD player or TV or heating or light).

I would like to open and start my car by an app (offered by my car brand).

9. Have you ever bought something via your mobile phone ...

	Yes	No
from an app store? (e.g. Apple App Store or Google Play)	<input type="radio"/>	<input type="radio"/>
from any other website than an app store? (e.g. eBay or Amazon)	<input type="radio"/>	<input type="radio"/>

11. What would you need to have as benefit in order to let **your favorite brands** (e.g. fashion brand) or **stars** send you marketing messages to your mobile phone (coupons / sale info / loyalty card / location-based info)?

- Yes, I like to receive updates from my favorite brands and stars. No need for compensation.
- No, I dont want such messages on my mobile.
- Well, they would need to offer me the following benefits:

12. The maximum amount per year you would pay for a mobile messenger app is ...

- I would never pay for a mobile messenger app.
- less than 1 US\$
- 1 US\$
- 2 US\$
- 3 - 5 US\$
- 6 - 10 US\$
- 11 - 20 US\$
- 21 - 50 US\$

13. Optional for mobile experts (or consumers):

How do you judge

- the development of mobile commerce/marketing in MMA? Key drivers and limitations?

- the ability of some MMA to connect people by their feature 'see people nearby'?

Any general comments?

14. I plan to do some short personal interviews via Skype or via email / user ID (10 min).

Would you participate in an interview? Multiple choices possible. Thank you!

My Skype name is mahaenni.
with your messaging colleagues.

Please share this survey

- Yes, I would participate in an interview. My Skype ID or email or MMA user ID is:

No

I would like to receive the survey results. My email address is (will only be used to send survey):

>>

This research will

This research be using three methodologies to find answers about the field of MMA.

- a) Desk-top research about MMA
- b) Online questionnaire (one for both mobile consumer and for mobile professionals)
- c) Explorative (online) exchange with young people using MMA chats among others (aloud speaking protocol)
- d) Semi-structured MMA expert interviews

Expert talks with:

There were three major analysis or surveys on MMA. The author has had an expert exchange with the three behind the publications/projects:

Siim Teller, Senior Research, On Device Research, London

Neha Dharia, Analyst, Ovum, Mumbai

Spencer Ng Tse Chieng, Associate Director, TNS. Mobile Internet Insights, Singapore

The author talked to the following MMA executives by telephone:

Robert Lamptley, Co-Founder Saya messenger, Accra

Olga Steigl, ex-CEO Talkbits, Berlin

David Hui, Co-Founder Uni messenger, San Fransico

Kobus Smit, GSMA RSC initiative, Köln (planned)

Steve Wong, CEO Frankly App, San Francisco (planned)

The semi-structured interview with MMA executives will have the following subjects:

- General rules and observations in MMA market
 - MMA business metrics of specific messenger
 - Local hero concepts
 - Features: Connecting People, location based features
 - The future business models of the three big players (WhatsApp, WeChat, Line)
-

In-depth interviews with digital 'Super Communicators' (using Twitter and e.g. Instagram, using various n:n communication tools and 1:1 messenger) via written (Kik, Skype) or by telephone.

- Pakistani girl, Enrice Iglesias Fan, 18, London
- Swedish rock singer, 16, Malmö
- Mexican teenager, 18, San Diego / Tijuana
- 2 Australian teenagers,
- German teenager, 16, Stuttgart
- 2 English teenagers, England
- 2 American Teenagers

Questions:

Why do you use Twitter?

How do you use MMA?

Why do you use your MMA in that way?

Highlight and lowlights of MMA use?

3.3 Process

Sample used

The target audience for the web survey are mainly residents in Switzerland. The author tries to reach global participants via his network of Facebook, LinkedIn, Xing, Instagram and Twitter, followed up by personal email invitations to participate in the survey.

SPEND BY RESEARCH METHOD 2012 (%)

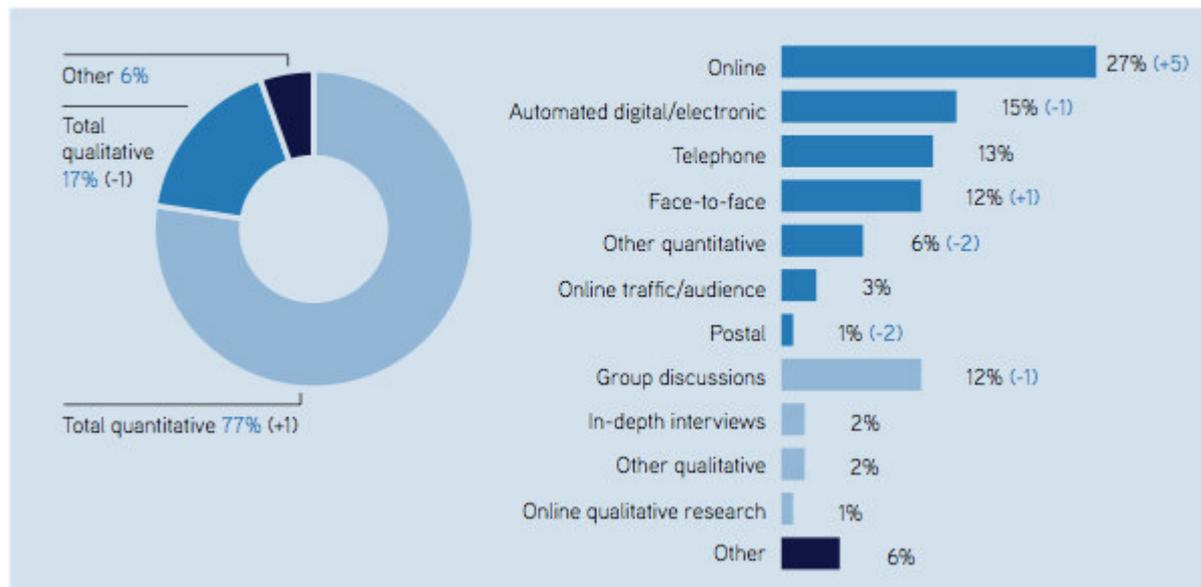


Figure 25: The author used a quantitative online approach which represents that most often used approach in consumer research methodology, according to Esomar (2012).

3.4 Design

The survey questionnaire was developed using a web-based tool named Qualtrics. The questionnaire was piloted with a dozen of in-depth discussion respondents (mainly young people) from all over the world via chat in major MMAs (like WhatsApp, WeChat, Line, KIK and Snapchat), after which the newest features have been added and value proposition/product concepts have been reformulated, mainly to further clarify the questions and to make suggested product concepts more tangible and attractive to respondents.

The author is aware of the many technology adoption models, and the many different theories about planned behaviour and so on, which have not been used in this survey for the following reasons:

1) In many European and Asian countries, these MMA has reached 80+ % penetration rate of smartphones. With such adoption success, the in-depth enquiries about motivations (e.g. perceived ease of use/usefulness/enjoyment/social influence and so on) is not highly relevant anymore and has been analysed by many studies before.

2) Many earlier hurdles regarding the abilities of the mobile devices have been removed with the introduction of the iPhone and the app markets by 2010. With all the app possibilities the smartphone

doesn't give limitations anymore, nowadays smartphones can even be regarded as enabler for nearly everything.

But the author still sees high relevance in values like perceived trust/security especially in the sector of the three focused fields of new technology possibilities in MMA. In order not to overload the questionnaire the author seeks to find a judgment on these subjects via personal interviews. So regarding these new fields, the survey will deliver only a high-level preference ranking regarding the many suggested product concepts. In a second step, should the reasons for winners and losers of the product concept testing be further analysed, integrated research models like Technology Readiness and Acceptance Model will be utilised (Lin, 2007).

Survey Design

The survey starts with five introduction and demographic questions about MMA product choice, gender, mobile expertise, cultural background, ages, and MMA communication typology; as these parameters strongly define the usage of MMA features. The parameters are very important for the data analysis later where all the answers of the different segment respondents are compared against each other. Further variables that could have been included, but were neglected due to reduction of question, are: education and income/social status.

In the first part of the questionnaire, core part A, activities and preferences in MMA (15 items), the respondents are asked to indicate how often they do various activities which are possible in extant MMA, and what they would (not) like to do in their MMA. To find out what new features could be popular among MMA users, the author has set up a simplified consumer preference testing for product concepts. This core part B of the survey is set up in form of absolute judgment questions in self-explicated preference statement by which respondents specify their level of agreement on a 5-point Likert scale with mid-point labelled 'neutral'. Scale was changed from a 7-point to a 5-point Likert scale in order to facilitate and accelerate the interviewee's decision.

The absolute judgment has advantages over paired comparison and preference order, as it shows the positions of the choices on the scale. It is also easier for the respondents to answer the form of questions as he/she can focus on one product concept per question and does not need to compare it with other potential solutions. Core section B is set up in a conjoint-similar (Green, 1970) measuring where the preferences about different products are asked. The different absolute judgements can be seen as variation of the same high-level value proposition (to connect people (not friends yet) for common special interests).

In an attempt to better understand the motivations behind the preferences made by respondents, this second core section includes also questions designed to characterize the extent to which other concerns (money spent, security, relationship based among others) influenced respondents' preferences.

Core section B is organized by six general questions to understand the motivations first, followed by four questions about location-based features (connect new people), followed by two questions about mobile payment, continued by two questions regarding progressive usage of mobile app, for which MMA could be a distribution channel. By these survey layout we avoid the single-option aversion (Mochon, 2013). Again, the survey questions are listed in subject grouping (like mobile commerce and location-based features) but are not labelled as such, so that a neutral enumeration does not influence the respondents by tags like 'mobile commerce section'.

An impair rating points scale has been chosen because to many survey respondents the communicated features or product concepts will be new, ergo the respondent may have no opinion on the subject, ergo the respondent is neutral to the situation in the question. The Likert scale has three potential bias: respondents may avoid extreme response categories (central tendency bias); agree with statements as presented (acquiescence bias); or try to portray themselves in a more favourable light (social desirability bias).

Pricing question in MMA could have been asked by many different methods (e.g. van Westerdorp method), but as the minimum price is given for about 95% of these MMA, the author has decided just to ask for the maximum indication what a consumer would pay for a MMA.

Validity of data

The predictive accuracy of the simple aggregated choices of the consumer preferences is for many reason questionable: 1) this survey can't reach statistical relevance as the number of respondents will be too low. The target is to reach a sample of 100 to 150 respondents. 2) There will be more answers from Europe than from other continents. 3) There may be more answers from people who are above 30 years old. As the extensive and progressive use of messengers lies within the youth segment, it is important to get many answers from young people. The author tries to steer against these situations by involving and trigger more overseas people and teenagers for this survey (by collaborating with Swiss schools).

Data Analysis

Compare the aggregated preferences by the five key parameter of the survey (gender, age). The author was inspired with this P&D from the innovation value chain questionnaire to fetch a feeling or attitude which they use.

*It could be argued that the selection of the respondents are too much online-affine and too progressive oriented to give a general picture of the situation. The author defends this approach as it was intended to contact a potential target group with this survey in order to find out in which segment would *this have the most product relevance.**

Weeks after the launch of his survey, the author found exactly the same survey approach he used in a **statistics** of the TNS Mobile life panel (2013), which had also the target to investigate in detail into

consumers' usage of their mobile devices. See on the right side. Mobile Life is an annual study that draws on behaviours, motivations and attitudes of 38,000 people in 43 countries, to develop recommendations on activating business and marketing strategies via mobile.

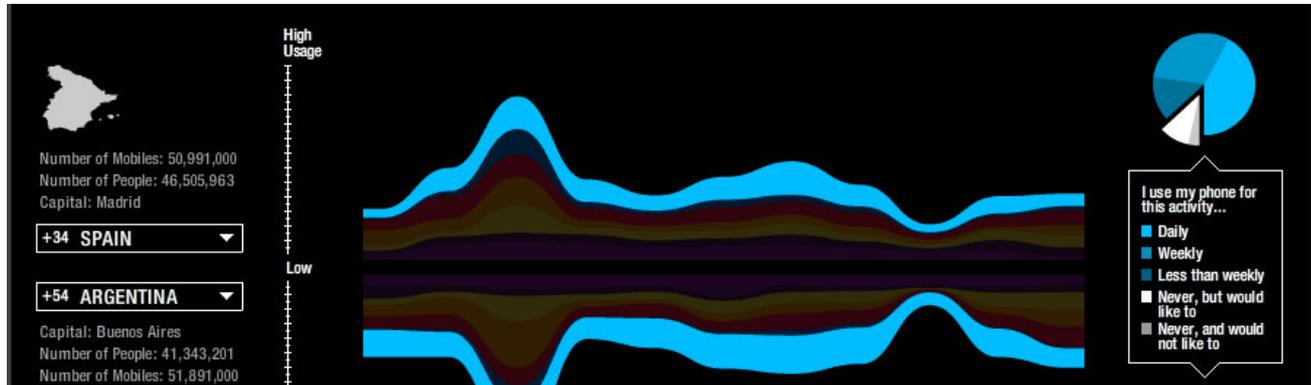


Figure 26: The author's survey set-up is coincident with TNS Global's discovermobilelife.com monitoring method of mobile consumer behaviour and activity (see right).

4.0 Secondary Research

In this section, the author's secondary research for MMA is documented.

4.1 PESTLE for MMA

4.1.1 Political

The governments of Saudi Arabia, UAE and Iran limit access to communication networks (e.g. OTT) over which they have little or no control. By banning some OTT MMA, these governments try to protect the revenues of state-owned telecom companies. Other countries like India co-operate with the USA as it fears the threat of terrorist activities on these networks.

4.1.2 Economical

A recession is a very strong driver for MAM adoption (see Spain and Greece) and SMS replacement.

4.1.3 Social

Messaging is the number one killer app on cell phones. In 2013, a strong increase from 1 billion MMA installations to 2 billion installations has happened, marking a frightening shift by the segment for 12 to 20 year olds from social networks like Facebook and Google to messaging apps and mobile social networks. MMAs like LINE even want to become, through their stickers, a new universal language.

4.1.4 Technological

The use of the OTT layer in mobile networks by messaging apps was foreseeable and has disrupted the 20 year old SMS technology within two to four years. It is a shortcoming of the telecom industry not to have reinvented SMS themselves, proving that innovation is most often reached by small companies and not the large companies. It is a classic example of the tendency of large telecom companies to stick to a product that is milked until it finds no customers anymore.

4.1.5 Legal

The privacy protection authorities of the governments of Canada and Netherlands have questioned some MMA techniques (e.g. saving MMA users' phone books on MMA servers) regarding their breach of consumers' trust and privacy at early stage in 2011. The MMA co-operated well then, knowing that if they would not solve the issues the foundation of their business model was at risk.

4.1.6 Environmental

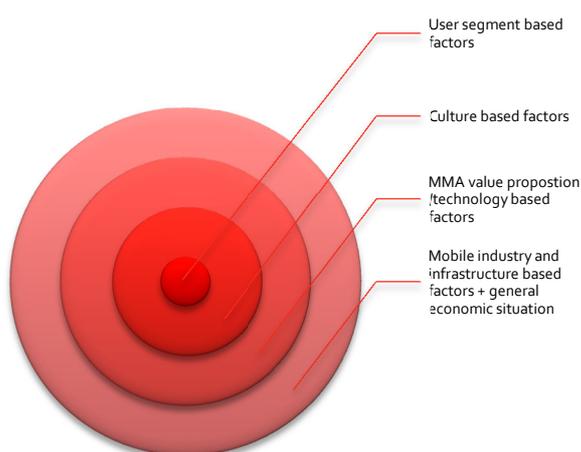
Messaging helps to save paper as it is not intended to be printed by its functions. Newer generation of smartphones are also based on solar energy.

4.2 Drivers and Limitations of MMA Adoption

It is important to investigate all relevant drivers and limitations for MMA adoption in order to be able to make a judgement about a current MMA market development or about a potential new MMA solution in the local market. Therefore, the author has accumulated a list of 24 influence parameters on MMA.

Basically, the drivers and limitations can be categorized into four groups, ordered by their relevance: factors based (1) on industry/infrastructure, (2) on MMA value proposition/technology, (3) on culture/country and (4) on user segment. When dealing with a market and a MMA adoption rate, the author suggests the following view on the subject:

First, the regional telecom industry defines by their mobile networks the market entry possibilities for a MAM. In this layer, the general economic situation in a region can play an important role (e.g. a recession increase MMA adoption). Once a MAM has decided to enter a market, it mainly needs to deal with the communication culture of this area. Once there is an obvious match between the MAM and the local communication culture, or a MMA localisation strategy has been set up, it makes sense to consider the next circle of requirements, the one from single user segments. The favourable MMA/market fit of each circle is the prerequisite for the next inner circle. It can be argued that the position of MMA value proposition circle and the culture circle can be exchanged. To illustrate above concept see also the example of Dr Jeanie Hun, CEO LINE Americas and Europe, who lived for one month in Spain in June 2013 to deep dive into of local communication behaviour, before she launched the Spanish LINE campaign.



Figures 27: Approach to the local MMA environment from outside to the inside (source: Michael Hänni)

Which strategy for the launch of a new MMA? Taking into account above approach concept, a new MAM solution would be launched in geographically focused campaigns like one city in order to be able to reach network effect at all. This network, if successful, would then continuously increase to bigger circles (see

Spain and Latin America) or along cultural immigration routes across countries (see China and its immigrants into other countries). This launch approach can also be started simultaneously or consecutively in 2 - 3 cities of different countries to gain more insights.

All above parameters can be applied on just one certain country or any other defined target market size.

This section summaries current tendencies which are true for the majority of the cases but also may be wrong in some individual cases. Below table shows a summary of these influences.

Influence are	Parameters	Weighting of parameters
Industry/infrastructure factors	<ol style="list-style-type: none"> 1. Price of SMS 2. Telecommunication behaviour 3. Mobile network infrastructure 4. Price of mobile internet 5. Smartphone adoption 6. General economic situation 	35 %
MMA/technology factors	<ol style="list-style-type: none"> 7. MMA value proposition and competition 8. MMA spread of technology (by phone number or user ID or email) 9. MMA marketing/advertisement 10. Market penetration of the top MMA 11. Perceived usefulness and ease of use of the technology 12. Usability/user interface 13. Context of use 	35 %
Culture/country factors	<ol style="list-style-type: none"> 14. Cultural communication behavior 15. Openness to share vs. privacy concerns 16. Social facts (e.g. long commuting) 17. Illiteracy 18. Different languages/alphabets (e.g. Cyrillic, Chinese) 	15 %
User segment factors	<ol style="list-style-type: none"> 19. Consumer age 20. Available free time 21. Introversion/extroversion 22. Degree of connected life 23. Purchasing power/income 24. Technology savviness 	15 %

Each influence is explained in detail in the following:

4.2.1 Price of SMS

When OTT messaging emerged, SMS revenue started to decline. The telecoms with the highest SMS prices had the strongest decline (e.g. KPT from Netherlands with Euro cent 7.6 per SMS) or Spain. Below tipping point risk ranking for SMS revenue (McKinsey, 2013) of national telecom providers. Their analysis concludes that MMA adoption is positively related with smartphone adoption, mobile network development/quality, and average cost of SMS, among others. The countries that are green lag behind in mobile network infrastructure or SMS has been bundled in most mobile rate plans, therefore SMS is still on the rise.

#	Country	Score	#	Country	Score
1	Netherlands	74	17	Hungary	50
2	South Korea	73	18	Czech Republic	49
3	Japan	69	19	Finland	48
4	Spain	68	20	Portugal	48
5	Germany	67	21	Malaysia	48
6	Switzerland	64	22	Thailand	44
7	United Kingdom	62	23	Sweden	43
8	Singapore	60	24	Norway	40
9	Russia	60	25	Denmark	36
10	Canada	57	26	Turkey	36
11	United States	55	27	Indonesia	No risk
12	Italy	54	28	India	No risk
13	Poland	54	29	Brazil	No risk
14	Australia	54	30	Argentina	No risk
15	Austria	52	31	Mexico	No risk
16	France	50	32	China	No risk

Table 2: SMS revenue tipping risk ranking of McKinsey (2012). Red = high risk, green = low risk

4.2.2 Telecommunication behaviour

MMA entering a new target market should know the telecommunication behaviour of the inhabitants of the targeted market, in terms of quantities of call minutes, SMS, and data package subscription. To understand their specialities which then should be reflected as match to the features of the MMA in the marketing campaign. Every country has such data available through the national communication authority or through the annual reports of the relevant telecom companies or through TSNglobal and Mobilelife panel.

Telecommunication usage is different in every country, depending on different national telecommunication solutions (e.g. SMS). It is a very different situation if a country has low or high usage of mobile broadband.

4.2.3 Mobile network infrastructure

OTT messaging needs mobile access or home internet access. Both forms of internet access are in some developing countries still very low (e.g. China, India, and Indonesia). MMA adoption is therefore at low to medium level in these countries. Meanwhile after an early phase of confrontation, mobile network providers

and MMA have started to team up to provide customer-oriented solution/data rateplans to the benefit of both parties, especially in emerging markets.

4.2.4 Price of mobile internet

High prices of mobile internet/broadband hinder MMA adoption whereas low prices support MMA adoption (e.g. Indonesia has one of the slowest national Internets, but also one of the cheapest, source: ondeviceresearch.com)

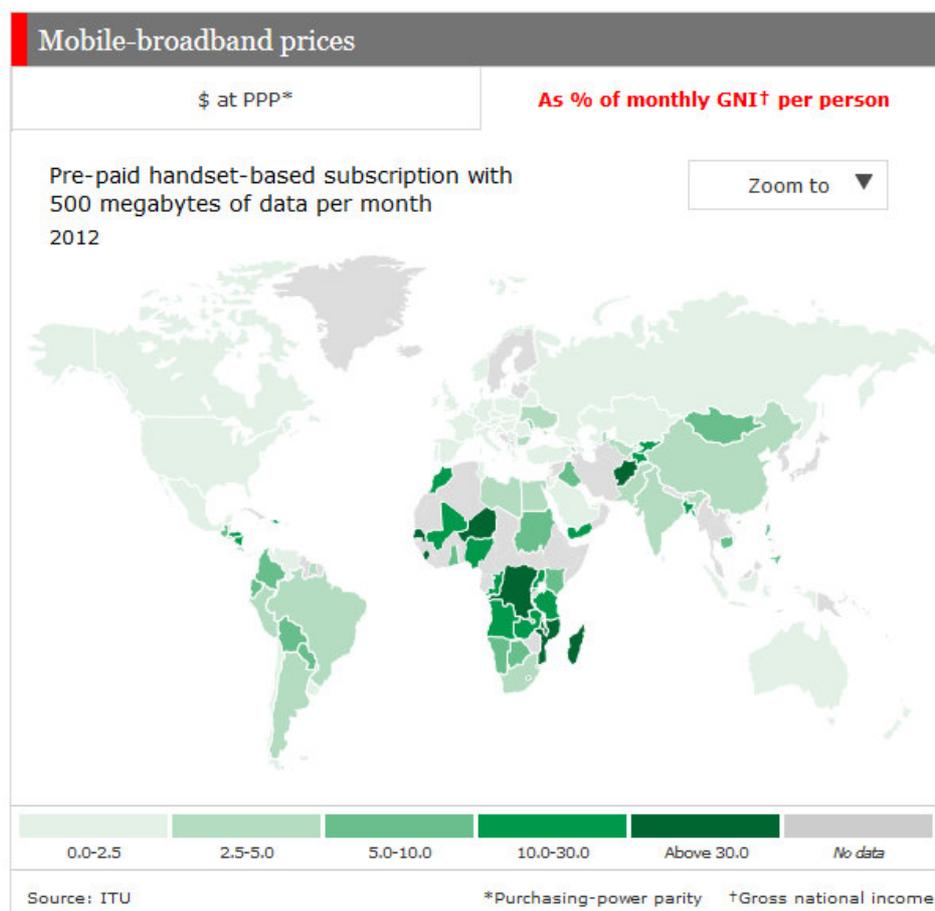


Figure 28: Mobile broadband is available at reasonable rate in almost every country in the world. Countries with high prices for mobile broadband indicate early development stage of mobile infrastructure and potential corruption with mobile network licences. Low mobile broadband prices are positively related to MAM adoption.

4.2.5 Smartphone adoption

While the Western world has reached early stages of maturity with smartphone adoption, markets like Asia, Africa and South America have still high growth potential. For developing countries, the MMA advantage (SMS replacement) is of high relevance due to lower purchasing power per capita. MMA normally need smartphones to operate their messaging apps. Some MMA like Nimbuzz and WhatsApp also have OTT messaging solutions for feature phones (e.g. Asha and Yezz) to gain more market penetration in developing markets. MMA cooperate with feature phone manufacturers and pre-install their messaging service directly into the default operating system of the device. This cooperation is advantageous for all involved: users save

money by not sending SMS, manufacturers can co-brand with international MMA to increase image and to position favourably their feature phones, and MMA can gain preferential market access.

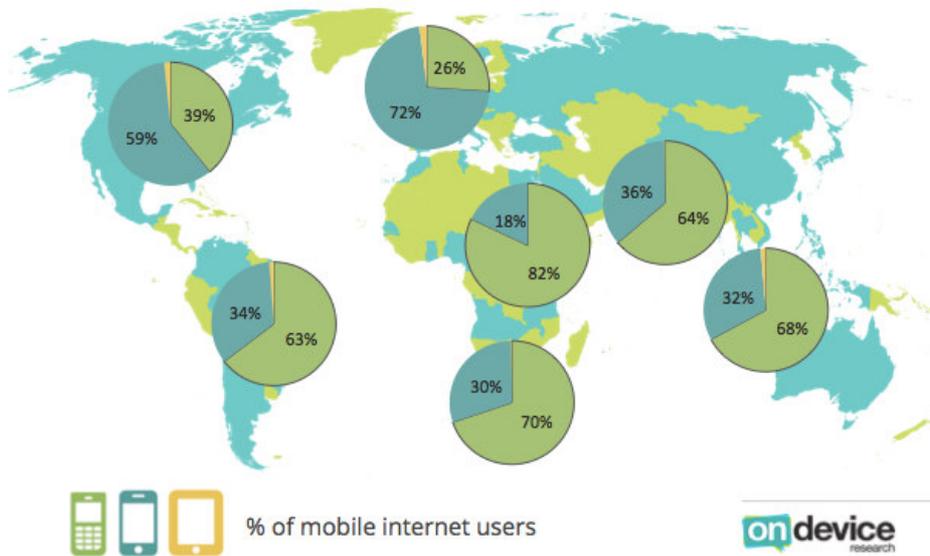


Figure 29: Smartphones are the majority in the Western world consumer base, in all other regions feature phones are still the majority in 2013. This can change in the developing countries within 1-2 years. (source: researchondevice.com survey)

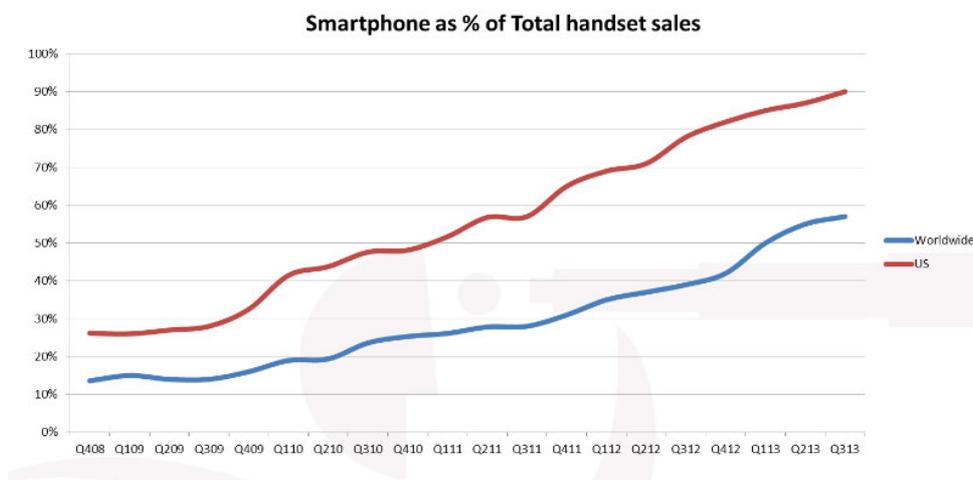


Figure 30: The shift in the global mobile consumer base towards a majority with smartphones will happen soon, as the global handset sales has crossed 50% already in early 2013.

The national growth rates in smartphone penetration can strongly vary as countries are in different market maturity stages.

Smartphone Subscriber Growth = Remains Rapid 1.5B Subscribers, 31% Growth, 21% Penetration in 2013E

Rank	Country	2013E Smartphone Subs (MM)	Smartphone as % of Total Subs	Smartphone Sub Y/Y Growth	Rank	Country	2013E Smartphone Subs (MM)	Smartphone as % of Total Subs	Smartphone Sub Y/Y Growth
1	China	354	29%	31%	16	Spain	20	33%	14%
2	USA	219	58	28	17	Philippines	19	18	34
3	Japan*	94	76	15	18	Canada	19	63	21
4	Brazil	70	23	28	19	Thailand	18	21	30
5	India	67	6	52	20	Turkey	17	24	30
6	UK	43	53	22	21	Argentina	15	25	37
7	Korea	38	67	18	22	Malaysia	15	35	19
8	Indonesia	36	11	34	23	South Africa	14	20	26
9	France	33	46	27	24	Netherlands	12	58	27
10	Germany	32	29	29	25	Taiwan	12	37	60
11	Russia	30	12	38	26	Poland	11	20	25
12	Mexico	21	19	43	27	Iran	10	10	40
13	Saudi Arabia	21	38	36	28	Egypt	10	10	34
14	Italy	21	23	25	29	Sweden	9	60	16
15	Australia	20	60	27	30	Hong Kong	8	59	31

2013E Global Smartphone Stats: Subscribers = 1,492MM Penetration = 21% Growth = 31%



Note: *Japan data per Morgan Stanley Research estimate. Source: Informa. 40

Figure 31: It is important for MMA to be timely in the markets when the market has highest growth rates in smartphone adoption to profit from first mover benefits (see co-operations with local mobile network providers and feature phone manufacturers) .

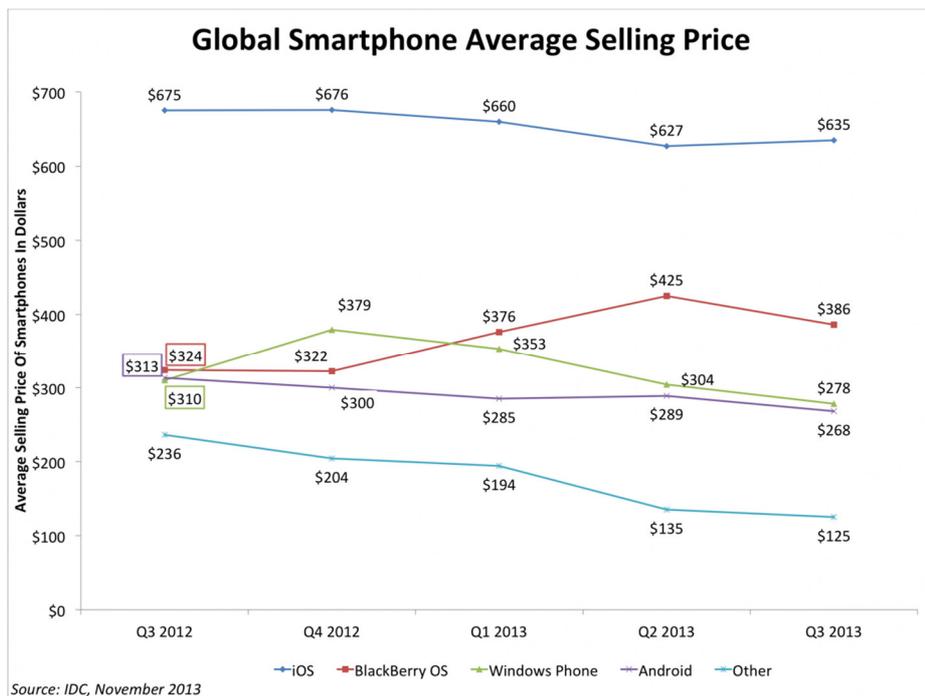


Figure 32: Additional support for MMA adoption is the fact that the prices of smartphones have come done by 12% in 2013 (source: IDC, November 2013).

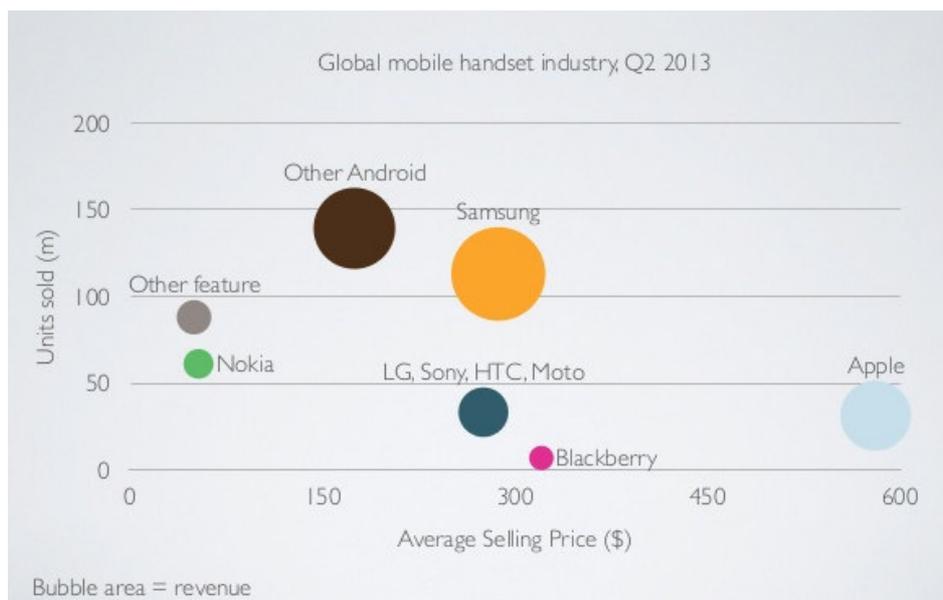
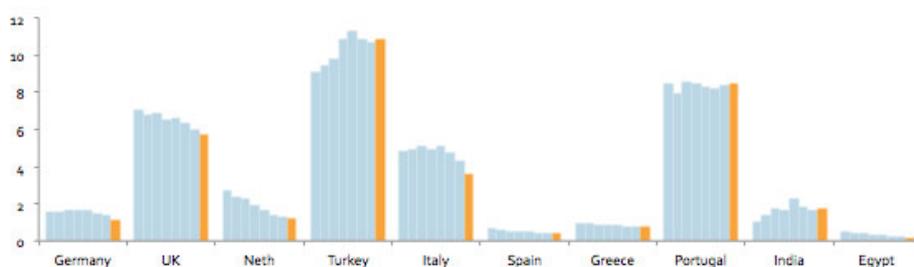


Figure 33: Smartphone prices down to USD 30-60 for simpler devices from no-brand manufacturers, e.g. from China (source: Companies and Enders Analysis, 2013)

4.2.6 General economic situation

A recession is highly positively related to MAM adoption (see Spain and Greece) and SMS replacement. It is not accidental that the European financial crisis and the MMA boom in Europe happened in short time intervals after each other.

Vodafone network SMS/user/day, Dec 11-Sept 13



[Source: Vodafone, Enders Analysis]

Figure 34: Recession lead to decrease in SMS for Greece and Spain (source: Vodafone, 2013)

4.2.7 MAM value proposition and competition (see chapter 4.3.5)

It is important to understand which features of a MMA are locally very sought after and how well the positioning and adoption of the competing MMA in the local market already is.

4.2.8 MAM spread of technology

The easier the installation process of a MMA is, the faster adoption will happen. The registration to a MMA can be done with a telephone number, email address or a user ID. All three forms are used by different MMA for different reasons. Doing it by telephone number is the easiest and fastest form for the user and for adoption, but also the most invasive. By this automated electronic data interchange (EDI) will the address book of a user be matched with existing mobile numbers on the MMA server and (was saved there) in order to return immediately all contacts of the user that also have registered with the relevant MMA. The technology diffusion effect of this automated EDI is enormous: a user may immediately have up to hundred messaging partners, depending on how big the own contact list and the MMA network already is. This seamless contact sharing is to opponents (like national protection and privacy authorities) an invasion and is questionable in terms of security and privacy: 1) users just must trust that their mobile numbers will not be shared with third parties, 2) MMA have been granted access to the user's friends' phone numbers without your their permission. 3) the EDI initially connects all contacts without giving control to choose the chat partners; later options to block people were added. WhatsApp, which was the first MMA to do this automated EDI, soon had to cooperate with protection authorities to improve this process. The EDI has to happen with clear information to the user, the exchanged data should be sent encrypted/untraceable (at the beginning it was plain text by WhatsApp) and the central server should have high security standards. It is a breach of trust to execute automated actions without letting the user explicitly know about it, or giving the option to opt-out. Google caused such a case when it launched Buzz in 2010 and automatically opted in Gmail users to Buzz, making their contacts public. This action resulted in an uproar over privacy and a class-action lawsuit in the US (with Google paying out US\$ 8.5 million as settlement). Furthermore, Google was convicted to accept privacy audits by the Federal Trade Commission for the next 20 years. On the contrary, influentials like how e.g. WhatsApp scours their contact lists for existing WhatsApp users to facilitate the start of communication within the MMA. American MMA like WhatsApp, Viber and Tango use this address book matching. It is remarkable that this EDI process comes from the US where one of the highest level of privacy concerns can be found (see 3.4.5). This invasive method can be one of the reasons why WhatsApp found low adoption in the US by mid 2012 (9% in iPhone according to Onavo.com). One key driver for the strategic decision to apply phone book matching is the global competitive pressure (see Ramamurthy et al., 1999). On contrary, Germany which has even higher privacy concern levels has a high adoption rate of 90% on iPhones in mid 2012 (source: onavo.com). The price value driver in recession times is stronger than privacy concerns.

Kik and Asian mobile social networks like WeChat and LINE do not use this method on purpose as they want to offer a private environment with registrations via user ID (and email). As these tools also provide a personal timeline, the selection of which contacts shall be added is a more sensitive question than in MMA which focus on text messaging. Kik offers both methods which is a dual strategy due to strong competition. The consumers can choose how to build up their networks. The advantage is that a user can remain completely anonymous with a user ID, the disadvantage is that every contact needs to be separately selected and added. This process slows down adoption but LINE and WeChat have similar growth rates like WhatsApp which proves that their marketing is effective. QR codes (quick response) for each user ID and QR scanners integrated in LINE and WeChat helps to overcome difficulties with entries in different alphabets and improve network growth.

4.2.9 MMA marketing

LINE and WeChat are the only MMA which invest high sums in MMA marketing (online, TV, print, co-branding with local celebrities to conquer international markets now. These campaign are locally adopted and show strong adoption rates in short time. E.g. when LINE released in Spain in July 2013 the official accounts and stickers of Real Madrid and FC Barcelona, the MMA could gain within 3 day 12 million new registered users (vs. an average of 25 million new registered users per month). In the case of the USA, the adoption rate of LINE felt down after the marketing campaign was phased out. If after such campaigns the network effect does not set in and leads to further momentum for a MMA, the short-term growth success is not sustainable.

4.2.10 Market penetration of the top MMA

The higher the adoption rate of a MMA in a country is, the bigger the network effect for this MMA, the higher is the risk for SMS replacement. Due to its simplicity and communication interface excellence or social network value proposition, WhatsApp, LINE and WeChat have reached strong positions in many countries around the globe.

4.2.11 Perceived usefulness and ease of use of the technology

The perceived usefulness of MMA is mainly driven by the national price level of SMS. The higher the price of SMS the more useful is a MMA perceived (example: Netherlands, KPT cost 50% of its SMS revenue due to a 90 percent adoption rate of WhatsApp; in the US was MMA adoption kept low due to bundled SMS flat rates). The easier a MMA (core feature focus) is, the more and the faster it can find adoption (example: WhatsApp, Kik).

4.2.12 Usability/User interface

SMS remain for 20 years on the same development level, apart from introduction of international interoperability in 2002. MMA advanced SMS in all parts of the MMA value chain: interface; directory management (contacts could be individualize by photos and status); content delivery (up to real-time delivery; exchange of rich media); social media features (inclusion of timeline). Optimizations for low mobile broadband data (price of data rateplan) and low battery usage are basic parameters which attract high user attention. Kik and WhatsApp are good examples for intuitive user interfaces where WeChat is rather made to discover new features (e.g. the author and others had to google how to make a text only post in WeChat timeline). Snapchat is an example for a rather challenging interface which is not easy to understand, though it is highly successfully with its (earlier time) unique value proposition of creative snaps which are ephemeral (core feature focus). E.

4.2.13 Context of use

Messaging is a killer app and has low barriers to get engaged in. Messaging can fill every free minute of users as mobile phones are always with us. Due to its often asynchronous or casual exchange of messages, it is inviting to start and suspend communication without much announcement or mutual agreement, especially in the youth segment and among friends. Not engagement, but share of habit (share of time devoted to one

MMA compared to total time in various MMA) has become the most important valuation metric in the highly competitive MMA market.

4.2.14 Cultural communication behaviour

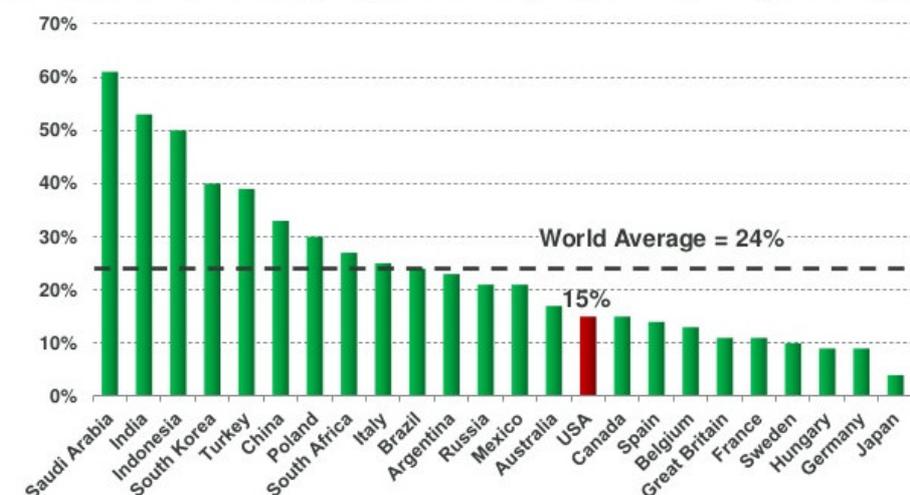
Cultural communication behaviour patterns have a high influence on MMA communication. The combination of openness to share (related to collectivism in Saudi Arabia and Asia) and cultural conformism (or even repression) is positively related to MMA adoption. During his research with MMA users all over the world, the author saw strong relevance of the Lewis communication model and some of the Hofstede dimensions (We vs I feeling). Many effects from the models can be see in reality. An example: as Asians have a high long-term orientation they put more importance on written words.

An example is the MMA feature 'find/contact people nearby'. This feature is popular with Asians due to their reactive communication attitude. In North America this feature is less relevant, as the North Americans are more open to directly get in touch with new people. MMA facilitate some communication by bringing it from regulated real life to more undefined and uncontrolled digital life. Essentially, it comes down to whether or not the potential behavioural impact of technology is great enough to overcome the inherent cultural traits many consumers have been raised with. Important factors are also the general eReadiness of a country, which positively relates to higher activity levels in MMA. E.g. WeChat forms a digital cultures which reflects accurately real-world ethnic groups across the world (mainly Chinese).

4.2.15 Openness to share vs. privacy concerns

An important factor in the evaluation whether European and American will adopt to the Asian mobile commerce pattern depends on their privacy and sharing concern which are in Asia and in the Latin World much lower. See below graph.

% of Respondents Indicating They Share 'Everything' or 'Most Things' Online, 5/13'



KPCB

Source: Ipsos OTX.
 *Survey was published on May 14, 2013, the underlying data derived from an online survey (weighted sample size of 12,000 across 24 countries) conducted between January 1-18, 2013. Survey question is "describe how much you share online (including status updates, feelings, photos, videos, links, etc.)"

28

Figure 35: Openness to share (source: KPCB, 2013)

A reaction to the high amount of shared posts is the rise of disposal media, which help to deal with privacy concerns. The rise of disposal media (e.g. in form of Snapchat) has advantages. It slows down the digital footprint of a person and the general stored data volume.

The abundance of data is a potential gold mine and a mine field. The paradox is that, despite being protective of their privacy, the people themselves give away plenty about themselves on social networks.

4.2.16 Social facts

Asia is more crowded, more (publish) traffic time, more commuting time, more idle time for using the mobile phone.

4.2.17 Illiteracy

In many developing countries is the illiteracy rate considerably high which would be an adoption barrier for MMA. The innovative MMA have solved this situation by adding voice messages to their features.

4.2.18 Different languages/alphabets

Different languages or alphabets immediately bear the risk of the entry of a new MAM competitor that would refer to one of the different needs even more localized or creative solution, so that the general version would lose relevance.

4.2.19 Consumer age

The younger the consumer, the more relevant are MMA. A simple impression of the age level on the different MMA can researcher find when looking in Twitter at the hashtag post of the single MMA (#WhatsApp, #LINE, #WeChat, #Tango, #Kik and #Snapchat).

4.2.20 Available time to consumer

Teenagers are the people who have most time available and are most interested in new technology communication tools as they are still setting up their connections to their environment. These activities reduce with growing age, family settling and reach of a certain targeted or accepted place in the society.

4.2.21 Extroversion/introversion

The more extroverted a person is, the higher the activity level of communication in MMA. Alternatively, there is also the paradigm of the generally shy who likes to communicate but 'like to hide behind the computer' and can by the means of MMA defeat/bypass their shyness (original statement from a teenager in the personal interviews with author). An example (told to the author by several user): Chatting with strangers by MMA has become increasingly popular in recent time. The typical use case is that a Twitter

account owner make an a 1:n public post like 'I am bored, entertain me, my KIK id is ...'. According to several female interviewees, such an 'ad' can generate in the use case of a female within minutes one or up to 100 requests for chat (mostly from men). This activity is night entertainment for teenagers who are not allowed to go out in the evening yet. In these chat sessions young user encounter all sorts of contact which makes them experienced and trains their socializing skills and helps to improve their ability to recognize communication types and how to handle them best. These 'ads' are also a call for confirmation. These people want to know what other people think of them.

Asians favour 'connecting to people nearby' features as they have a natural shyness. Whereas Americans and Europeans are rather outgoing and prefer to connect without technological means in their spare time. Africans care about their neighbours that is why MMA features like 'street talk' (group chat for same street/environment) is popular. Shyness example from Thailand: (young) people would go to an (internet) café, logging in to Foursquare and starting to chat with others in the same location for hours, but would not talk directly to each other.

4.2.22 Degree of connected life

The more a person is involved in social media (especially the young in Twitter, Instagram, Kik), the higher the activity level of communication. If a person is using Twitter, then there is a high correlation to being a heavy user of MMA is in strong correlation according to the research of the author. One example: Saudia Arabia is no 1 in Twitter and also no 1 country in terms of registered users for the most anonymous messenger Kik outside North America.

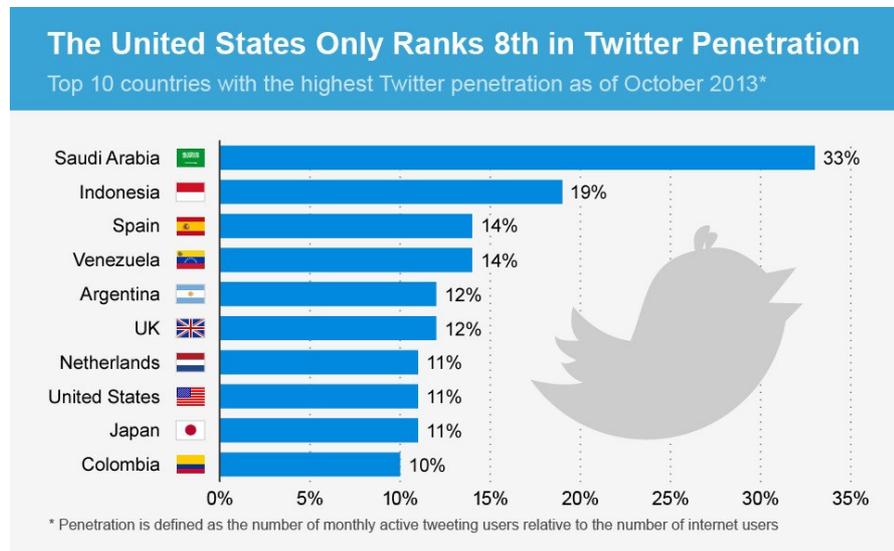


Figure 36: Countries with highest Twitter penetration (stastica, 2013)

4.2.23 Purchasing power/income

Not all markets can the majority afford smartphones. Innovative MMA have reacted to this disconnect by creating MMA solutions for feature phones. WhatsApp and Reliance in India.

4.2.24 Technology savviness

The credo young 'Super Communicators': More tool knowledge, more caution, and there will not be a problem.

4.2.25 Conclusion

If all these MAM factors are reflected for a relevant segment or country, this list can help to do an holistic potential analysis for a MAM in a certain country and help to evaluate the profile of a potential user in order to think of the most relevant MMA features of the targeted segment. If thinking of launching a new local MMA, this analysis has to be done to understand the consumers' expectations.

4.3 The Competitive Landscape of MMA

4.3.1 MMA market size and trends

The market is the global revenue for SMS is estimated at USD 133 billion for 2013 (TelecomTotal, 2013²) with profit margins up to 90%. Ovum estimated that MMA (OTT services) will cost mobile network provider USD 33 billion in lost SMS revenue in 2013, rising to USD 86 billion in 2020. This is a 25% SMS revenue loss for mobile network provider due to MMA. As some developing markets like China, India, and Africa are still emerging the global SMS revenue is since the 1990 still on the raise and will reach its peak at USD 159 billion in 2015 (Deloitte, 2013). Looking at calculations that involve lost voice minutes too, there will be a loss of 25% - 45% of the SMS/voice revenue until 2018 (Telco2.0, 2013). MNO lose on the SMS and voice revenue, they gain increasingly profits from mobile data revenues (waterbed effect). The MNO basically has not really 'lost' very much, but there is much to rethink for going forward. The rapid loss of SMS revenue should MNO lead to evaluation new revenue sources.

Scenarios vary from a \$92bn to \$172bn decline on a base of \$375bn

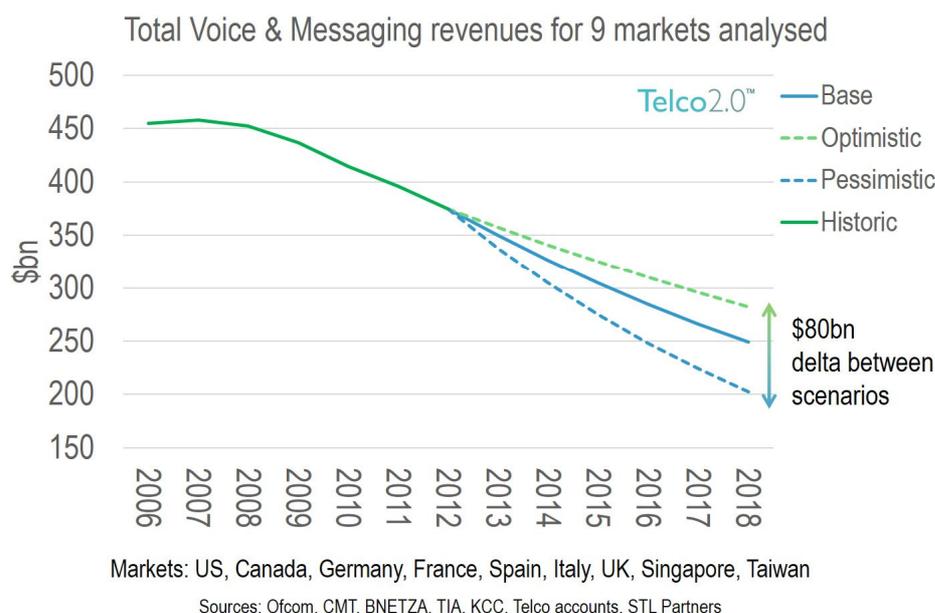


Figure 37: Lost money for mobile network providers (Telco2.0, 2013)

Informa Telecoms & Media (2013) has estimated that daily global OTT messaging volumes exceeded SMS in Q1/2013 and predicted that by the end of 2013 the number of OTT messages sent per day will at 41 billion, more than double the 19.5 billion SMS messages. In November 2013, WhatsApp announced that they are processing 11 billion messages sent per day. This would give them a staggering market share of 27% in global OTT messaging and 18% in combined global SMS & OTT messaging. Thus, in average, a monthly active user in WhatsApp sends 30 messages a day, this figure has come down from 36 messages per day in August. This

² See <http://www.totaltele.com/view.aspx?ID=482568>, retrieved on 15th September 2010

decrease hints to the scenario that even for non-marketing company WhatsApp has become growth more important than engagement with the product. Obviously, now is the time to win as many as possible customers for all MMA. In 2013 and 2014, the big market shares in messaging will be distributed and cemented for new entrants into the messaging market.

Many messaging estimation numbers for 2013 may have been too low as it can be seen in a prominent example: In February 2013, telecom expert company GigaOM estimated that by the end of 2013 1.4 billion consumers would be OTT messaging solution users. In fact, by the end of 2013, the market will have an approximate level of 2.2 billion consumers. Thus this estimate is missing the actual number by 36%. Obviously, even messaging analyst are surprised by the messaging hypergrowth in 2013.

4.3.2 MMA market overview

MMA companies are among the companies with highest customer base increases in the last two years. Some of them have developed from mobile messengers only to from the scratchboard newly conceived mobile social network app. This bothers not just mobile network operators and telecom companies for the lost SMS revenue but also giants like Facebook and Google because these MMA start to grab away considerable online time from these companies.

The 10 biggest MMA combine a user group of approximative 2.2 billion mobile consumers by the end of 2013 (own calculation). Below graph gives a better understanding what that means: Knowing that there will be approximative 1.5 billion activated smartphones and approximative 5 billion feature phones in the world by the end of 2013, two statements can be concluded: there is currently a high MMA penetration rate on smartphones (about 1.5 MMA per smartphone on global average). A more realistic scenario is that 2 – 3 MMA are already installed on smartphones in the Western world and, on the contrary, there is still big growth potential for MMA in developing countries, for the next 2 – 3 years on feature phones which will step by step be exchanged into smartphones.

Smartphone Usage = Still Early Stage With Tremendous (3-4x) Upside

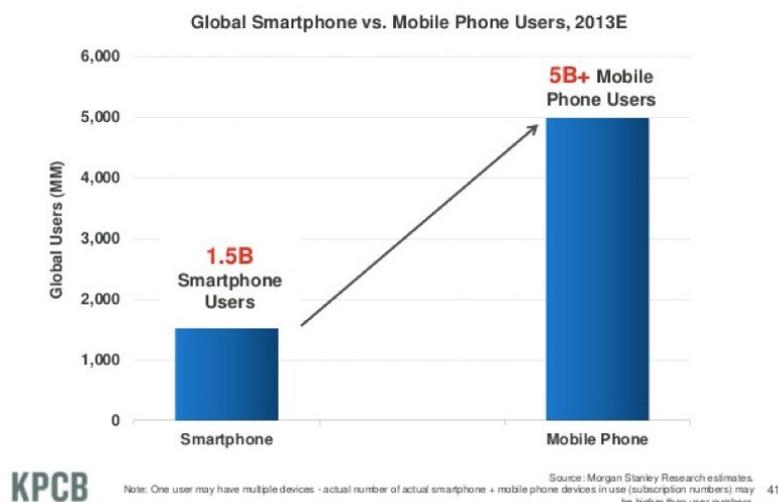


Figure 38: Smartphone usage (Source: KPCB, 2013)

To express their visions, these companies name themselves e.g. NHN – Next Human Network. They have aspiring ambitions: The Chinese competitor WeChat wants offer a ‘one-stop online lifestyle services’ and aims to become the most respected Internet company anywhere³. The Japanese competitor LINE plans to turn its messenger into a ‘common language for the world’ and sees itself as the first global Internet company from Asia⁴. And the main competitor from the USA, WhatsApp, refuses to use any marketing besides word-of-mouth effect because eventually it is ‘the product that needs to shine’, and nothing else. In order to give the best user experience for instant messaging, WhatsApp stands out of any form of added value services like ads or game besides their core product. Rather they want ‘WhatsApp to be the product that keeps you awake... and that you reach for in the morning’⁵. Its global scalability gives WhatsApp, currently employing fewer than 50 engineers, the highest ratio of monthly active users per long-term employee today of any active tech company (approximative 6 million users per long-term employee)⁶.

The race for the global leadership in MMA has come – after four years of early stage – into a strategic second-stage phase now and has currently become one of the most regarded commercial battlefields.

³ See <http://www.tencent.com/en-us/at/abouttencent.shtml>, retrieved on 15th September 2013

⁴ See <http://www.nytimes.com/2013/09/06/technology/a-japanese-social-app-contacts-new-shores.html?partner=rss&emc=rss&r=0>, retrieved on 15th September 2013

⁵ See <http://blog.whatsapp.com/index.php/2012/06/why-we-dont-sell-ads/>, retrieved on 15th September 2010

⁶ See <http://techcrunch.com/2013/04/16/whatsapp-bigger-than-twitter-with-over-200m-monthly-active-users-8b-inbound-and-12b-outbound-messages-daily/>, retrieved on 15th September 2010

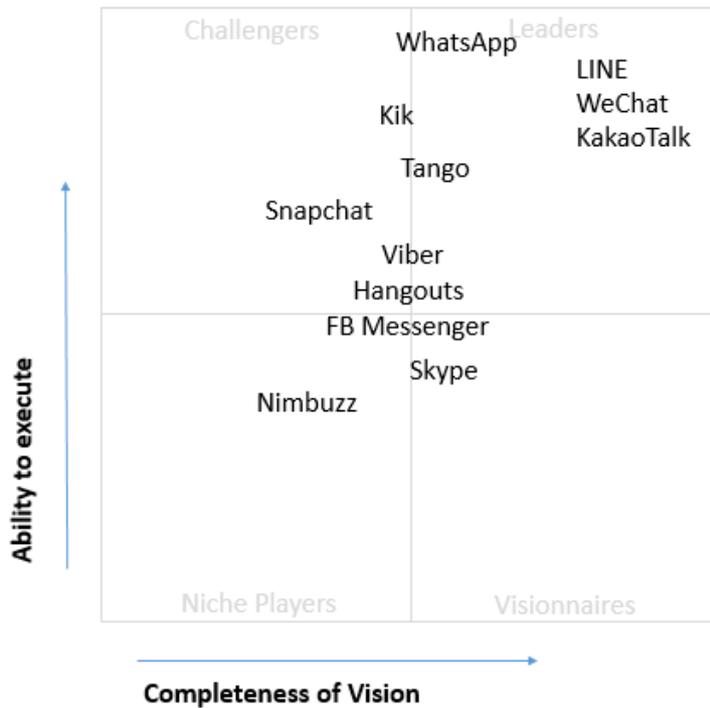


Figure 39: Company positioning in Gartner's Magic Quadrant (source: Michael Hänni)

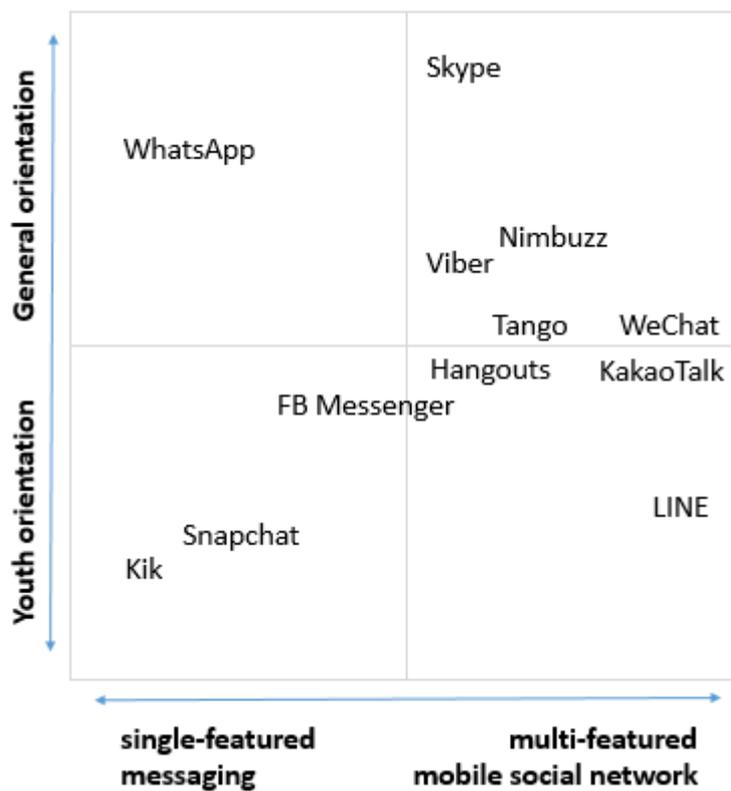


Figure 40: Consumer market positioning of MMA (source: Michael Hänni)

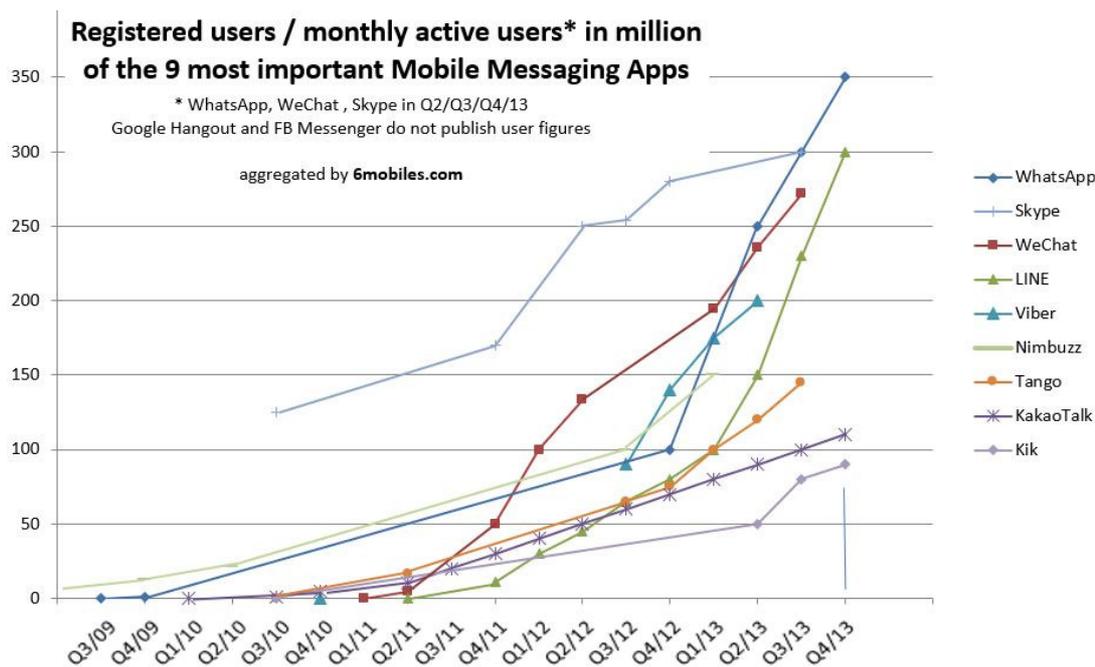


Figure 41: The user development of the 9 most important mobile messaging apps by number of users (Sources: websites of MMA and press, 2009 - 2013)

Now that mobile messaging app companies like WhatsApp have drawn over 350 million monthly active users, the questions remain: How should these companies sustainably generate revenue and how should they further develop their value propositions to keep and to grow their messaging users.

There are two main trends visible regarding business models in the current MMA competitive landscape: the mobile messaging app only strategy (WhatsApp) and the messaging app-plus-VAS-strategy. In between these two poles of a mobile commerce (MC) orientation there is a variety of new MMA value propositions that drag young users away from traditional social networks like Facebook (even though Facebook had 52% of its total audience traffic from mobile⁷ in 2012). So what are the sought-after differences and drivers behind this user migration? Is it just a momentary development or an irreversible trend into mobile social network apps like WeChat, LINE and Tango provide it in an early stage form?

4.3.3 The relationship between MMA and mobile network operators

Richer user experience at a lower price, it was easy to revolutionize SMS as it has not much evolved since 20 years. The mobile carriers should have started earlier to think how to re-invent SMS in order to keep the revenue rolling in. Since 2009, the relationship between MMA and mobile network operators has change from enemies to partner who seek to increase their share of margin in the field. MMA can be seen as 'arbitrage services' to the mobile network operators since they let consumers arbitrage between SMS and mobile internet data pricing. Some MMA are also taking up the Skype out concept (see Viber out). This trend

⁷ See <http://www.forbes.com/sites/ericjackson/2012/11/29/the-biggest-players-in-mobile-these-days-are-pandora-twitter-yelp-and-espn/>, nretrieved on 13th September 2013

will redefine the concept of OTT messaging, as the convergence of SMS and IP messaging is routing messages through carrier infrastructure as well as over the top. This convergence also allows market players to leverage one another's strengths in the value chain, with carriers providing scalability and delivery while IP-based messaging apps develop compelling and innovative interfaces.

What should carriers do about over the top substitutes for text messaging? The initial advice suggested three options: 1) refuse OTT voIP services on the network (Saudi Arabia, Iran and VAE with Viber), 2) cooperate with MMA for special rate plans (WhatsApp e.g. with Reliance in India), 3) create an own MMA (e.g. Swisscom iO for Swisscom; Yixin for China Telecom). Meanwhile, option 1) is not relevant any more, as the consumer has decided and could not be stopped from adopting to MMA. Option 3) makes only sense for larger mobile network operators. Joyn is a common MMA project of larger mobile network operators. But reading the consumers reviews in the app stores about Joyn shows that this solution still has many deficiencies. Some approaches involve supplying in-app advertising or billing services. Several bigger mobile network provider have also launched their own MMA solutions. If these solutions have a clear strategy and a local value proposition, these MMA solutions have good chances to become local hero solutions. Option 2) is the most relevant solution for many mobile carriers, in order to monetize the growing popularity of MMA better. Deloitte suggests unlimited use of instant messaging also will be popular with many users, and that service packages can be crafted to supply such access. WhatsApp is the most active player in this field: It cooperates with mobile network provider for beginner mobile data rate plans which cover unlimited usage of WhatsApp (and Facebook) on a daily or monthly basis. Furthermore WhatsApp cooperate with mobile phone manufacturers to integrate WhatsApp directly on the devices. BBM will be installed on smartphones from the likes of Celkon, Micromax, Mito, Nexian and Zen. Not OEMs of particular renown in the West, but significant players in the emerging markets to which they cater. At the same time, mobile carriers should work to add value to text messaging, which will remain a substantial business for some time.

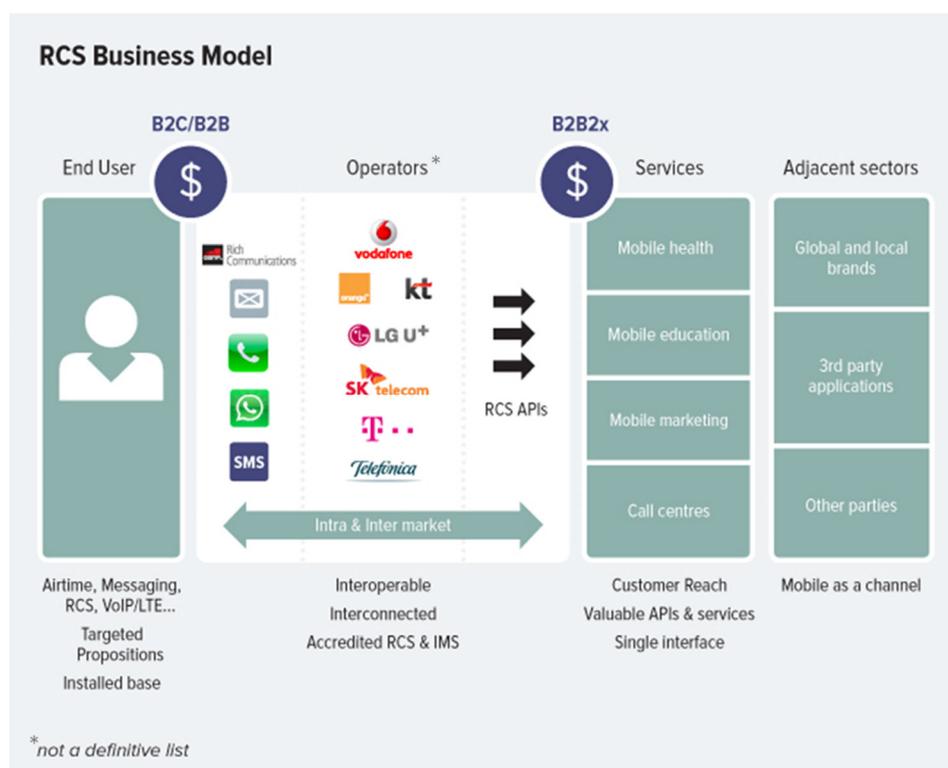


Figure 42: Joyn business model (Joyn, 2013)

4.3.4 The relationship between MMA and social networks

Since Q3/2013 Facebook report it is a confirmed fact that Facebook is loosing young consumers to MMA. A growing number of young users are feed up with Facebook's permanent and transparent (1:n-communication) posting set-up, where even their parents, uncles and aunties follow every of their steps and posts. Teenagers look for adventures (out of sight of their parents), privacy, intimacy (1:1-communication) and first-class mobile solutions. So they get all of that from MMA solutions. The mobile first approach plays an important role in this context: Not all young consumers have an own desktop computer, but most of them have a mobile phone nowadays.

Just considering messaging, it would be quite simple for social networks to react to the threat by offering own messaging solutions, which Facebook and Instagram just did. But it is not solved by this. As the young people have to move to the communication tools which are taken up by their colleagues. Below chart by digital media strategist Ben Thompson summarizes the elementary differences between social networks and MMA.

The value of these new MMA is that if they can lock-in young consumers, they will also stay there and generate revenue for these systems in the future. Big changes in engagement levels are rare, because consumer app habits tend to be relatively stable. Executives should think twice about big changes in mobile systems which have become an important and 'organic' extension of our bodies and personalities.

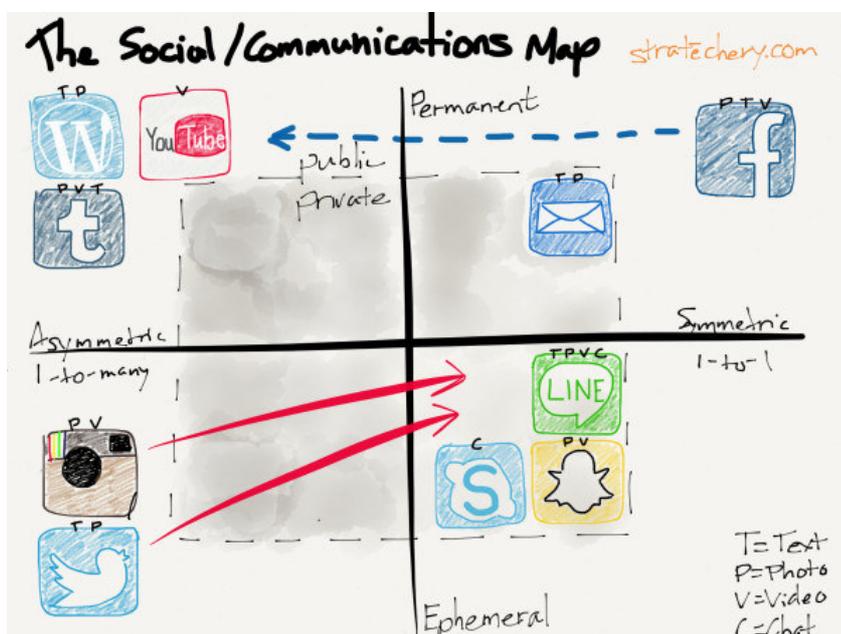


Figure 43: The social / communications map by Ben Thompson with the axes permanent vs. ephemeral and 1-to-many vs. 1-to-1

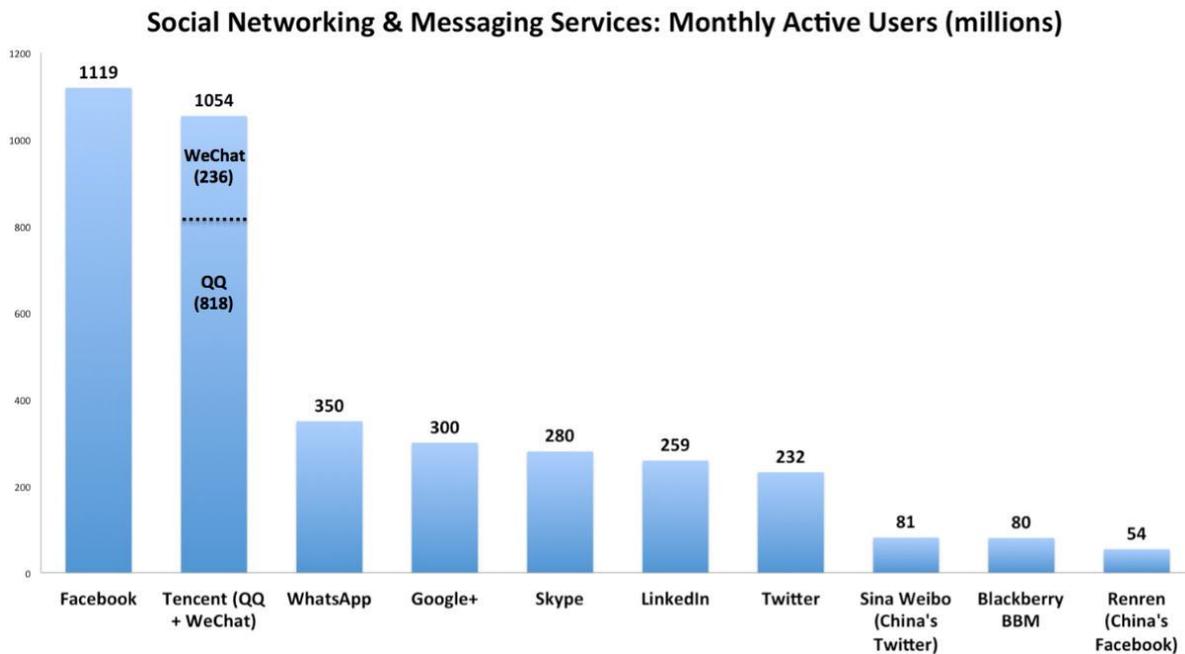


Figure 44: Tencent's two MMA Wechat and QQ are near to the Facebook's user base. (source: WorldofCEOs et al., 2013)

The use of proprietary protocols has meant that many MMA have been incompatible and users have been unable to reach users on other networks. This may have allowed social networking with MMA-like features and text messaging an opportunity to gain market share at the expense of MMA. MMA carry a natural lock-in since users typically require their friends to be using the same service in order to chat to them (Yuilop is an exception), so unless friends decide en masse to move to a new service, consumers will stay on a MMA for a long time.

4.3.5 Value chain of MMA

The value chain of a MMA consists of the 3 basic blocks of interface, directory management, message delivery and can be enriched by the two elements social media and mobile marketing/commerce. WhatsApp is emphasizing on the three first elements of the value chain, while WeChat and LINE are focusing on the two last elements.

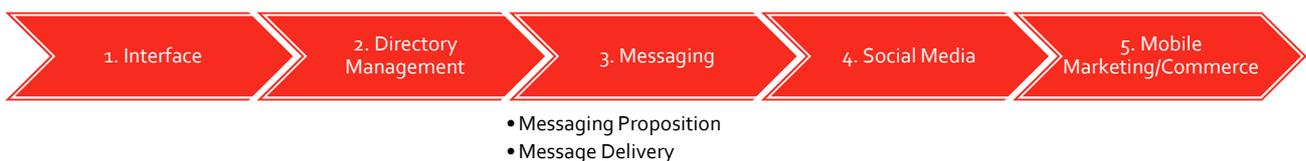


Figure 45: Value chain of MMA (source: Michael Hänni)

Interface is about usability and look&feel. Its early position in the value chain emphasizes its importance as first impression of a MMA. WhatsApp is emphasizing on a superior interface and usability the most among

all MMA players. This is visible in the example of how they included the walkie-talkie feature (record and send in one button) or that they were the first to place the 'send' button above the keyboard, so that 'send' would not be typed by accident. Now all have followed this interface change, but WeChat has the button still next to the keyboard. Furthermore, WhatsApp has innovated the directory management (EDI) and puts importance on message delivery (but not on messaging proposition) which deals with message delivery speed. According to messaging experts, delivery speed and messaging security are currently the most important messaging parameters for consumers. This is also proved by the author's survey result which puts notifications and timestamp about 'send, delivered, read, and online' at highest preference, which again is an intrusive feature (which can be turned off), but helps enormously to find the right moment to start a messaging exchange, or more importantly: to feel a constant connection with the messaging partner/s. The author sees in the online timestamp, which is accurate to seconds, the strongest competitive advantage of WhatsApp, besides the use of EDI for accelerated network effect. It makes the interface lively. Interestingly, WeChat is not dealing with these notification at all, as they give no information about delivery time nor about online presence in their interface. In contrast, WeChat and LINE are working very successful at the end of the value chain, plus on messaging proposition (Stickers), in all three parts leaves WhatsApp the field to the competition due to its own core product focus. The author see in the area of messaging proposition (what can be exchange and how easy) the highest relevance for new market entries with creative messaging propositions. Kik and Snapchat are good examples of a vast and creative messaging proposition (see highest ratio of photo sharing per user for Snapchat and strong growth of Kik registered users). Important subjects about in the messaging element are also: battery usage, data usage and scalability of solution. In general, the more a MMA can, the more complicated a MMA becomes.

4.3.6 Business strategy of MMA

All big MMA seek global growth, with locally adopted solutions (LINE stickers, WeChat location-based features) or without (WhatsApp, Viber, aso). Smaller to medium players have to expand on national basis due to reach first network effect. The recent acceleration in user base growth in 2013 shows that the market shares are being distributed now. Therefore, all big players are currently working extensively on growth activities (Strategy e.g. of LINE: First language support -> local content -> partnership with local partners -> local office). Global growth can be easier reached with a simple solution. This is probably the main reason why KakaoTalk and its eco-system with about six partner websites/sub-solutions (KakaoStories, KakaoGames, KakaoGroups aso) cannot find growth traction abroad. It's is probably the most advanced MMA environment but distributed on different app/web solutions which make the value proposition more difficult to communicate in a global expansion.

4.3.7 Business models and revenue analysis

KakaoLINE and WeChat are content delivery platforms with third-party partner in the backend.

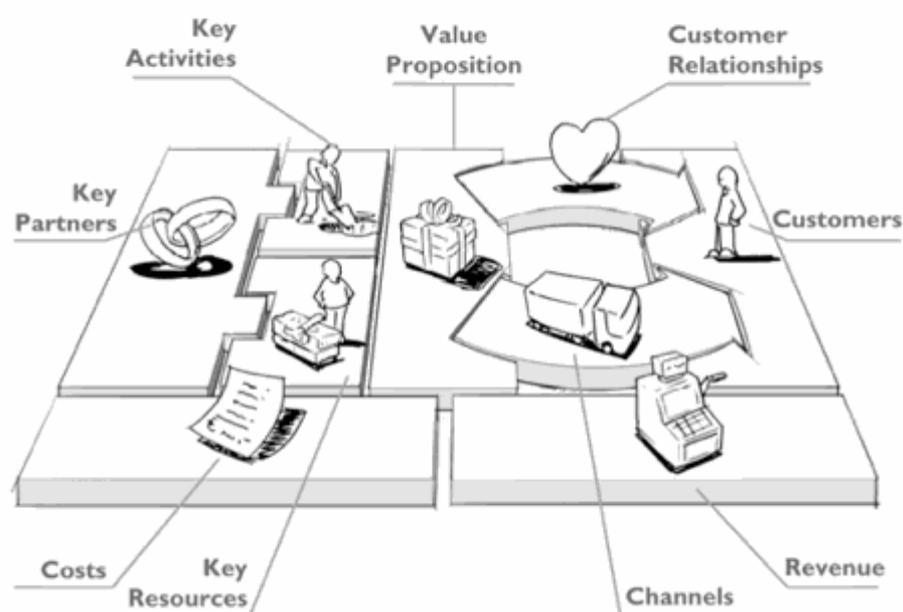


Figure 46: The elements of the business model canvas (Osterwalder et al, 2008)

Various MMA, like KakaoTalk, LINE, WeChat and Tango, have created content/gaming delivery platforms or social entertainment platforms with third-party key partners in the backend (e.g. game developers, webtoon illustrators for stickers). This is a much more complex and powerful business model than just producing a first class communication tool against subscription fee (WhatsApp). WhatsApp does not use the back-end with content developers, but the brand starts to intensify the co-operations with the mobile network providers and mobile phone manufacturers to gain better access to developing markets. Both strategies have advantages; the content delivery platform strategy talks directly to consumers, the co-operation strategy talks via local partners to the consumers.

The following table lists various current revenue sources of MMA. It underlines the innovativeness of MMA provider that none of the players uses the business model of simple advertisement.

Revenue Source	MMA that apply the revenue source
Subscription model	WhatsApp
Games (gaming delivery platform)	LINE, WeChat, Tango, KakaoTalk
Stickers	LINE, WeChat, KakaoTalk, Tango, Kik,
VOIP calls outside MMA (Skype out, Viber out)	Viber, Skype

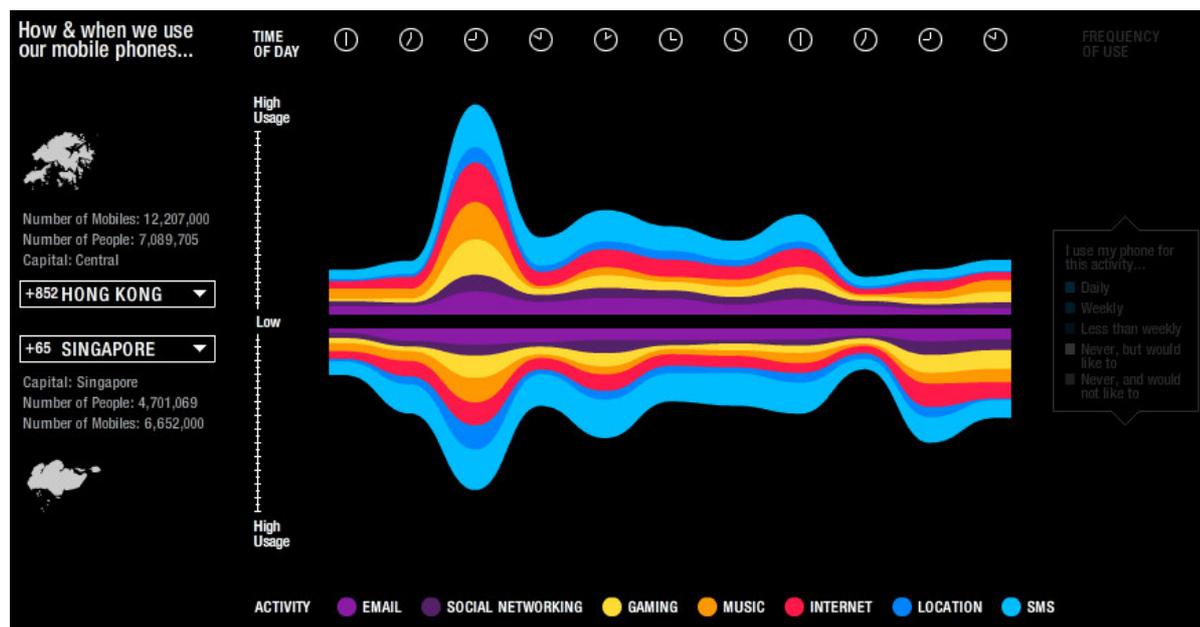
Official accounts	LINE, WeChat, KakaoTalk
Marketing campaigns	LINE, WeChat, KakaoTalk
Sales transactions	WeChat
Mobile payment transactions	WeChat, KakaoTalk
Premium chat	Tango
Cards (sharable content in HTML5)	Kik (one direction campaign)
Advertisement	-

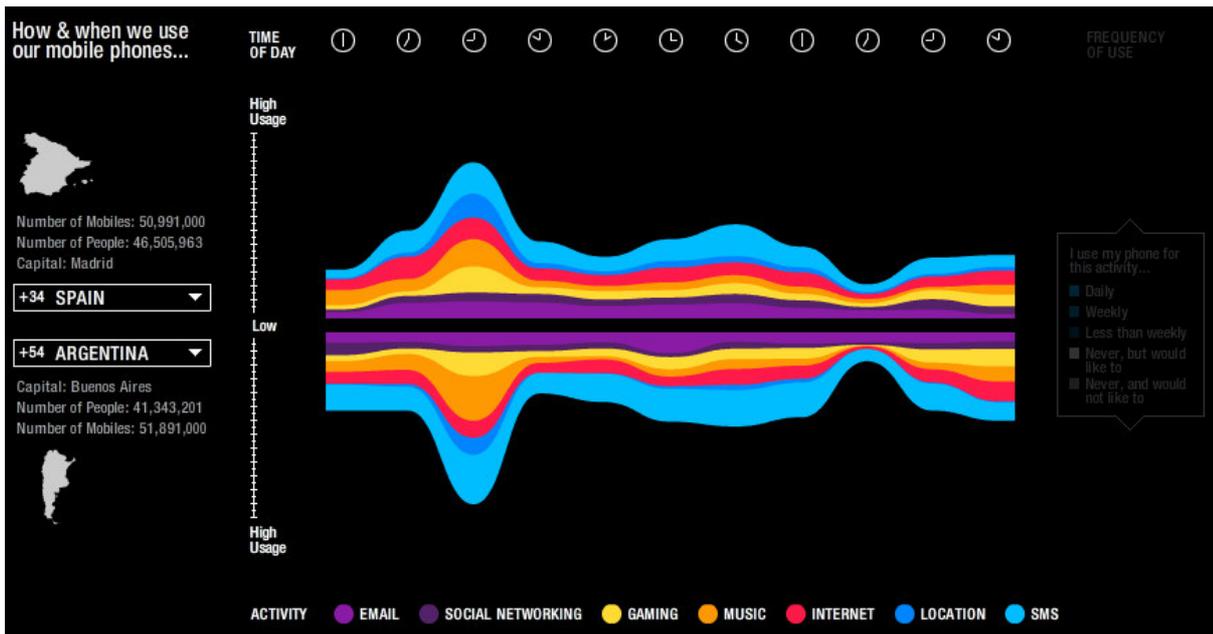
4.4 Analysis on MMA marketing

In this section, the author shows how potential targets (countries) for international expansions can be found.

With the online tool of TNS Mobile (<http://discovermobilelife.com/>) can be analyzed how and when people do use their mobile phones. The author looked at all available data to put together a comparison between an Asia state and a European state. The author especially was looking for the broadest profile expressing most mobile activities. He found a specifically broad profile for Hong Kong, Singapore, Indonesia and Saudia Arabia. See the charts below. They mainly just vary by different times of usage peaks.

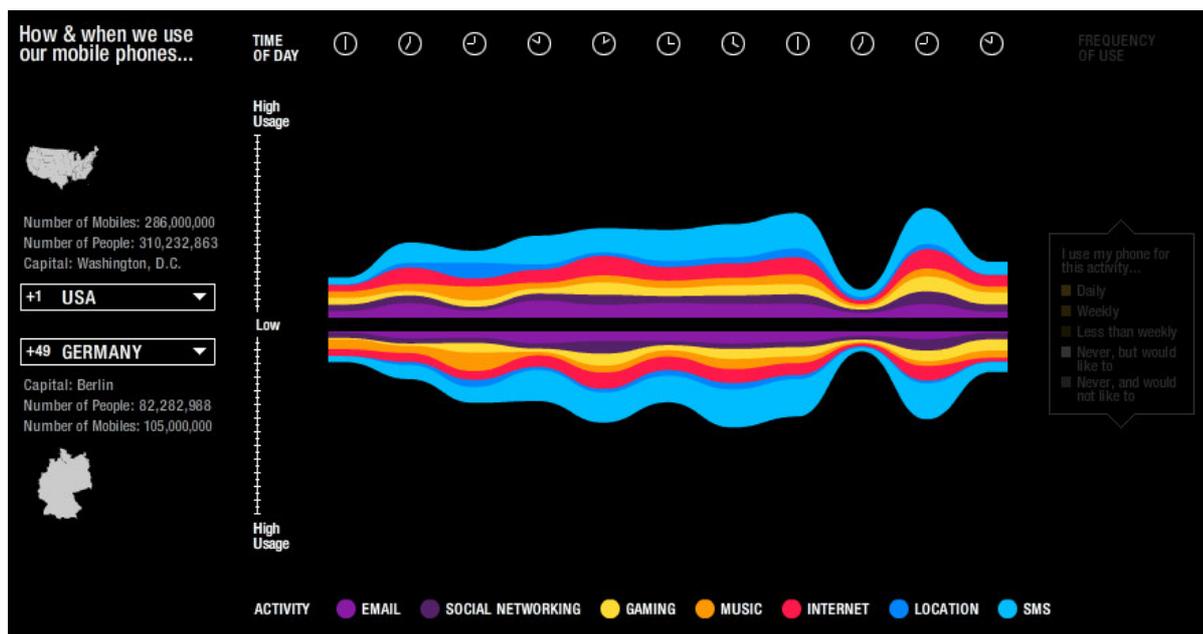
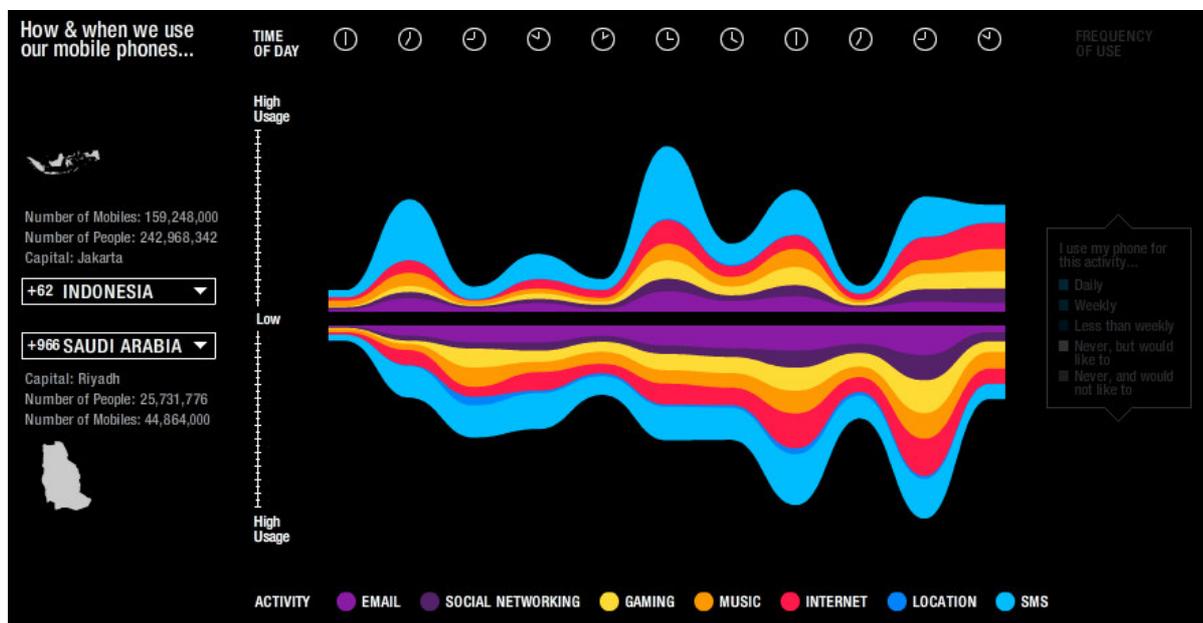
Then the author sought for an interesting pedant in Europe. The big majority of European countries (UK, Germany aso) as well as the United States have a rather flat usage profile. But the author found in the latin world two profiles which were very similar to Hong Kong. It was Spain and Argentina. All three states have a broad profile with big SMS and Internet usage peaks at 9am.





Conclusion: With this at hand, it is clearer to understand why Spain was selected as start country for the European invasion of LINE's and WeChat's big marketing campaigns (both with TV ads, WeChat with Argentinian star Lionel Messi). Furthermore, Spain as a country with an expressive and multi-active communication culture (Lewis) matches well with the LINE's core value proposition of expressive stickers.

For the sake of comparison, there have been put together two countries with broad profile (Indonesia and Saudi Arabia), compared to two countries with rather flat profile: USA and Germany.



5.0 Results

In this section the survey results are explained and interpreted. The results analyse five different aspects of MMA in 15 different charts (summary on page 86). The five different aspects are the following:

- 1) MMA activity rankings about current activities in MMA (by cultures, age groups, communication types and mobile expertise)
- 2) MMA preference rankings about new value propositions in MMA (by cultures, age groups, communication types and mobile expertise)
- 3) Mobile marketing acceptance (by genders, cultures, and age groups)
- 4) Mobile commerce experience (by genders and cultures)
- 5) Pricing of MMA (by genders, cultures, age groups, and communications types)

The MMA activity ranking (about current activities in MMA) and the MMA preference ranking (about potential new MMA value propositions and attitudes to MMA) are ranked by the highest to lowest average values per activity or preference item. The charts compare the different activity levels (average values) of users from different cultures, different age groups and different communication types. There would be many different forms to analyse the data which was generated by the survey but the author's target was to find out what is most popular or most preferred in MMA in different cultures, age groups and so on, therefore the form of the average rankings per was selected. The survey results support all hypotheses which were brought up at the beginning:

H1: The activities and preferences in MMA differ by **age groups**. (see activity ranking by age group)

H2: The activities and preferences in MMA differ by **cultures**. (see activity ranking by cultures)

H3: The activities and preferences in MMA differ by **communication types**. (see activity ranking by communication types)

H4: The activities and preferences regarding mobile marketing differs by **cultures, age groups and genders**. (see mobile marketing acceptance charts)

H5: The majority of users are willing to pay a small annual amount like USD 1 for a MMA. (see maximum price charts by cultures, age groups, communication types and genders)

Basic information about the survey

The survey was online from 15th October to end of December 2013. Some charts were made later and therefore have higher n quotations in the charts or lower n quotations if respondents have not marked all information. During this time 179+ people responded to the survey, 99 men (56%) and 77 women (44%). Responses came from following cultures: Europeans: 93; Asians: 61; Latins: 12, and North Americans: 10.

The following feedback from other cultures excluded from the results due to too low participation:

Australians: 2; Middle Easterner: 6; African: 6. Age groups were represented by the following samples: 14 - 19 years: 28 ; 20 – 29 years: 44; 30 – 39 years: 76; 40 – 49 years: 31; 50 – 65 years: 7. All cultures had about the represented about the same age distribution. Standard deviations of the answer samples have been reflected but play subordinate role due to the small same size.

Due to the small sample size all findings are only indications for possible tendencies within the MMA subject.

Below is a core product analysis which shows for Europeans and for International consumers the most requested or most often used value proposition in MMA.



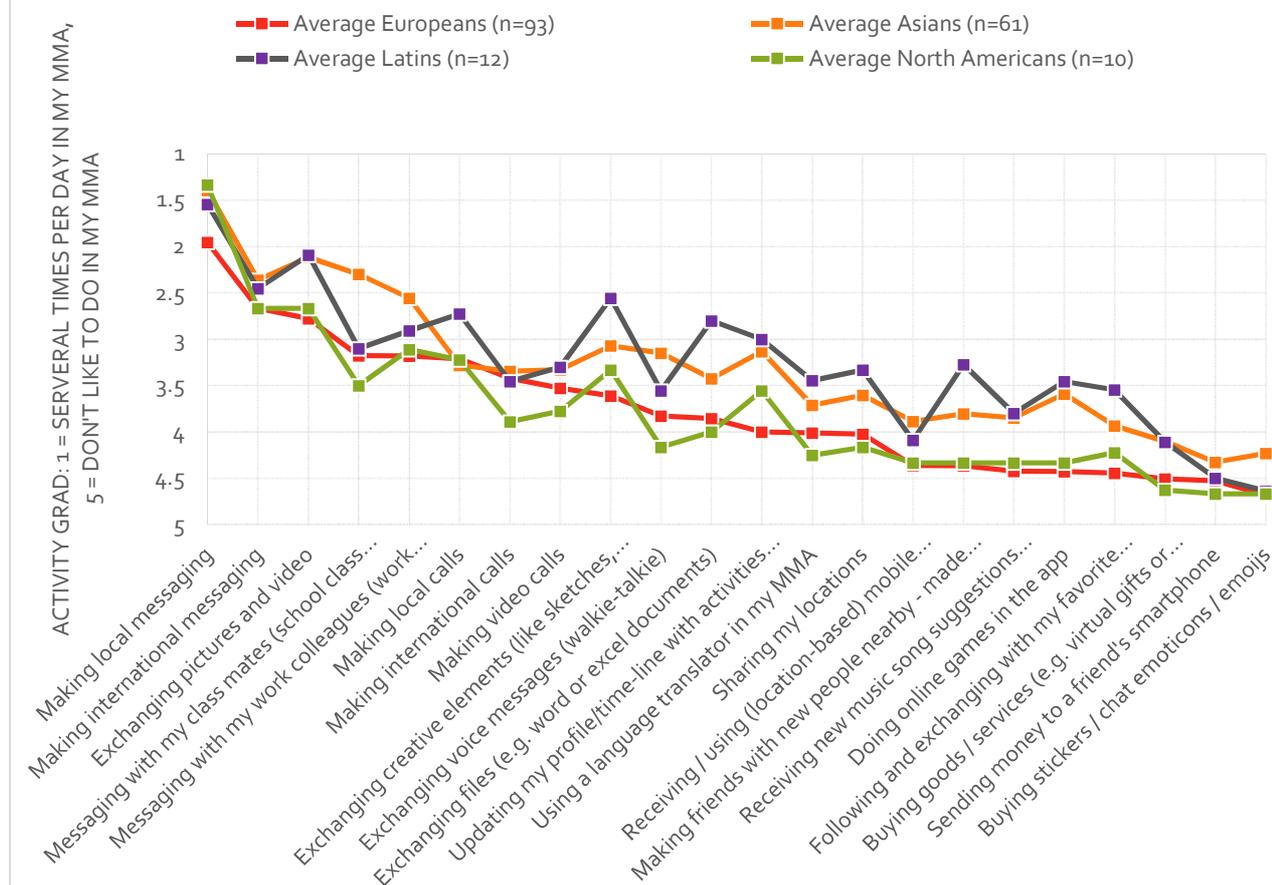
Figure 47: Core product analysis, Europe (left) vs. International (right)

The 15 charts have the following summary:

Table	Result summary:
1) Activity ranking by cultures	All cultures put similar emphasis on the same MMA features, but there are two different cohorts regarding level of activity (cohort 1: Europeans and North Americans with lower MMA activity – cohort 2: Asians and Latins with higher MMA activity)
2) Preference ranking by cultures	Highest differences in terms of MMA preferences among cultures. Punctual 2 cohorts partner visible.
3) Activity ranking by age groups	High difference regarding emphasis on MMA features. The older consumers become, the less they use MMA features.
4) Preference ranking by age groups	High difference in terms of MMA preferences among cultures.
5) Activity ranking by communication types	Similar emphasis on MMA features, but heavy users have higher activity level than low users.
6) Preference ranking by communication types	Similar in terms of MMA preferences among communication types
7) Activity ranking by mobile experts vs. mobile consumers	Similar emphasis on MMA features and activity level among mobile consumers and mobile experts.
8) Preference ranking by mobile expertise vs. mobile consumer	Similar in terms of MMA preference but higher emphasis by mobile experts e.g. on encrypted messages and payment by MMA.
9) Mobile marketing acceptance by genders and cultures	Females are more open to mobile marketing than men. Asians are more open to mobile marketing than other cultures.
10) Mobile marketing acceptance by age groups	Age group 14 – 19 years are significantly more open (40%) to mobile marketing than older generations. Logic: The older MMA user become, the less they are interested in mobile marketing.
11) Mobile commerce experience by genders and cultures	Overall high experience with mobile commerce in app stores (60% - 90%) across cultures, slightly lower experience with other mobile commerce sites like Ebay and Amazon (36% - 78%).
12) Maximum MMA pricing by cultures	European and Asians have a higher valuation for MMA then Americans and Latins.
13) Maximum pricing by age groups	Younger generations have a lower valuation for MMA.
14) Maximum pricing by communication types (heavy – standard – low user)	Heavy user have a higher valuation for MMA.
15) Maximum pricing by genders	Men and women have the same valuation for MMA.

On the following pages are the single charts and the author's interpretations.

ACTIVITY RANKING, RANKED BY EUROPEANS

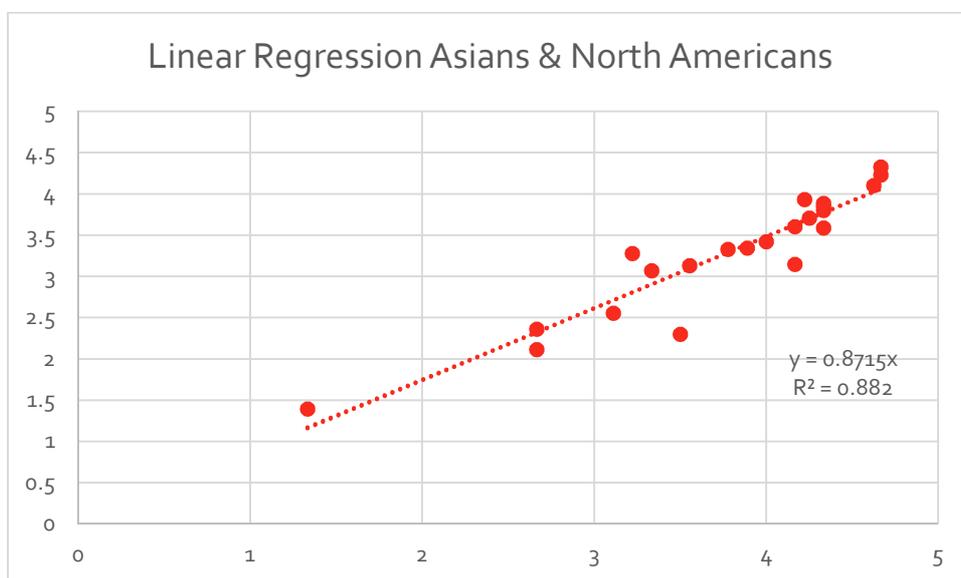
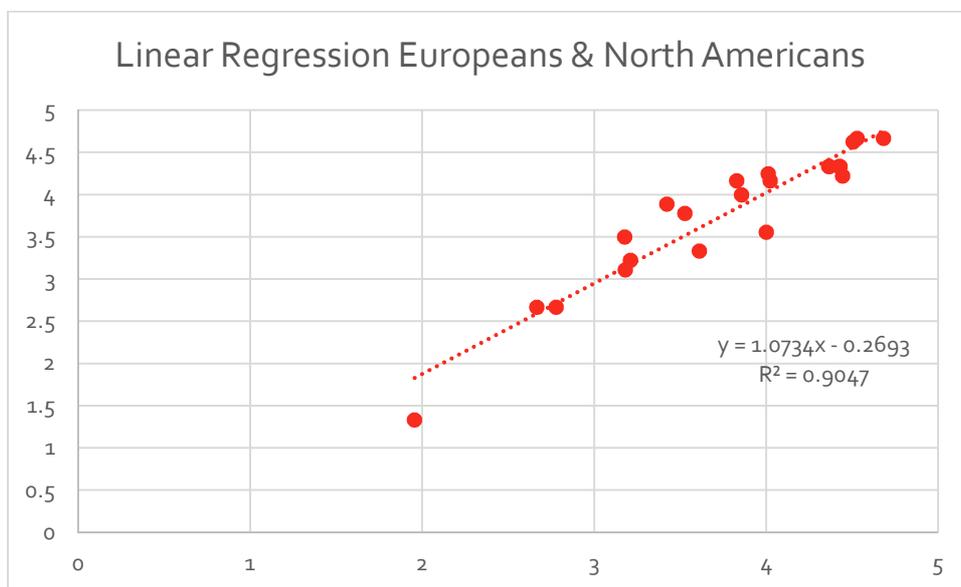


Result:

Basically all nations have high correlations to each other regarding the activity ranking, the highest correlation has the combination of Europeans and North Americans, the lowest correlation have Europeans and Latins. But regarding level of activity, Asians and Latins are more active in MMA (cohort 1) than Europeans and North Americans (cohort 2). The activity ranking also shows that many activities are equally ranked among cultures but just used in a different intensity.

Culture combinations	Correlations (R2)
Europeans and North Americans	0.905
Europeans and Asians	0.894
Asian and North Americans	0.882
Latins and North Americans	0.829

Asians and Latins	0.778
Europeans and Latins	0.758



The high correlation value of the activity rankings of Asians and North Americans illustrates that Asians and North Americans put, in many cases, emphasis on the same MMA activities, but the difference is that Asians use the MMA features more often than North Americans.

In the top activity ranks are no surprises. Messengers are mainly used for their core functions: messaging.

The gender ranking is not shown here as the results between the genders are too similar, proving that men and woman are to 80-90% equivalently active in messengers.

The activities in MMA with highest % of answer 'no, I don't want to do this in my MMA' by Europeans:

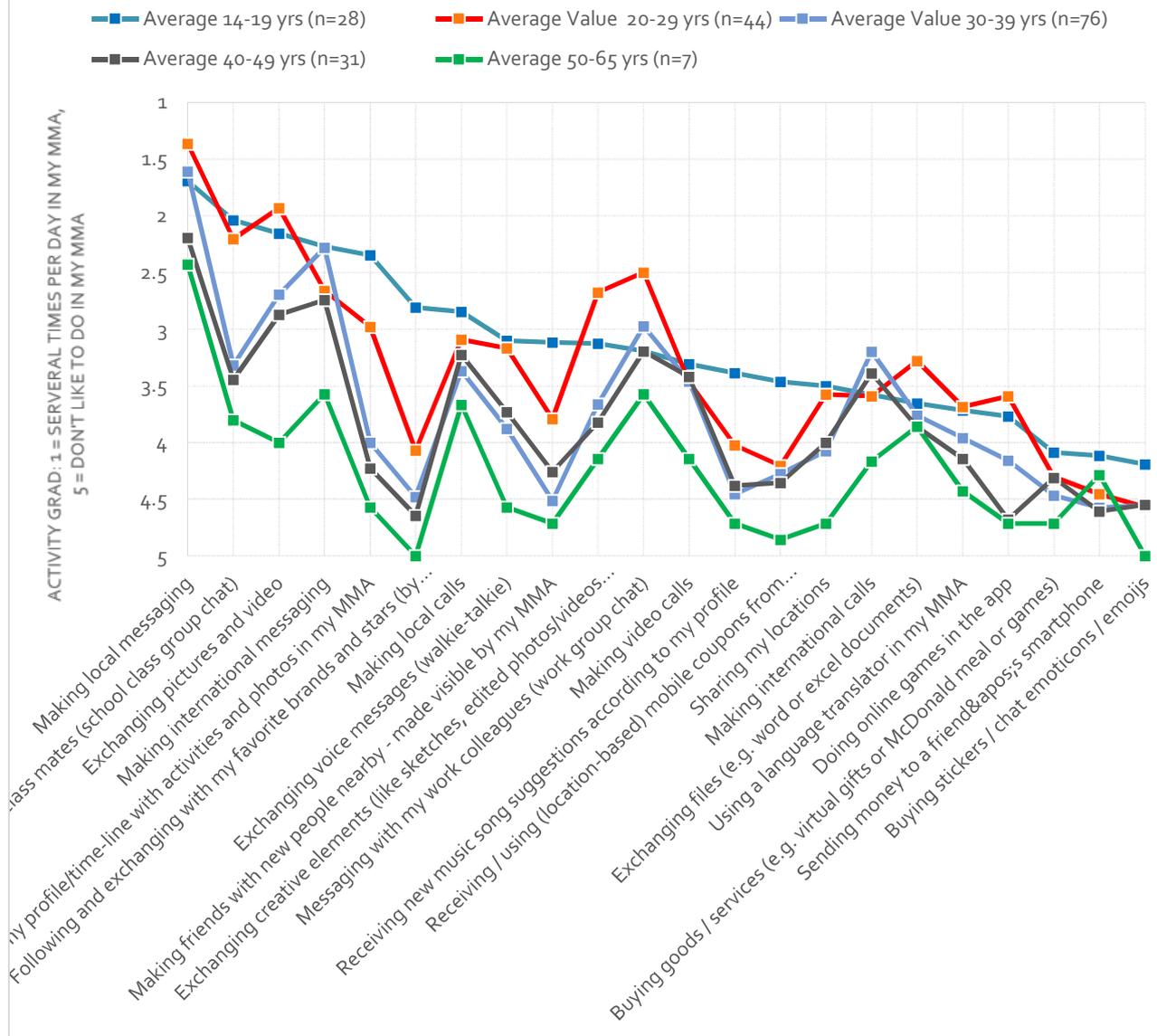
Buying stickers	81%
Doing online gaming	68%
Following and exchanging with my favourite brands and stars	66%

The activities in MMA with highest average deviation across cultures (→ biggest controversy):

Doing online games	0.429
Exchanging files (Word documents)	0.408
Updating time-line	0.35
Messaging with my class mates	0.35

General consumer indifference can be found in the activity ranking long tail.

ACTIVITY RANKING, RANKED BY AGE GROUP 14-19 YRS

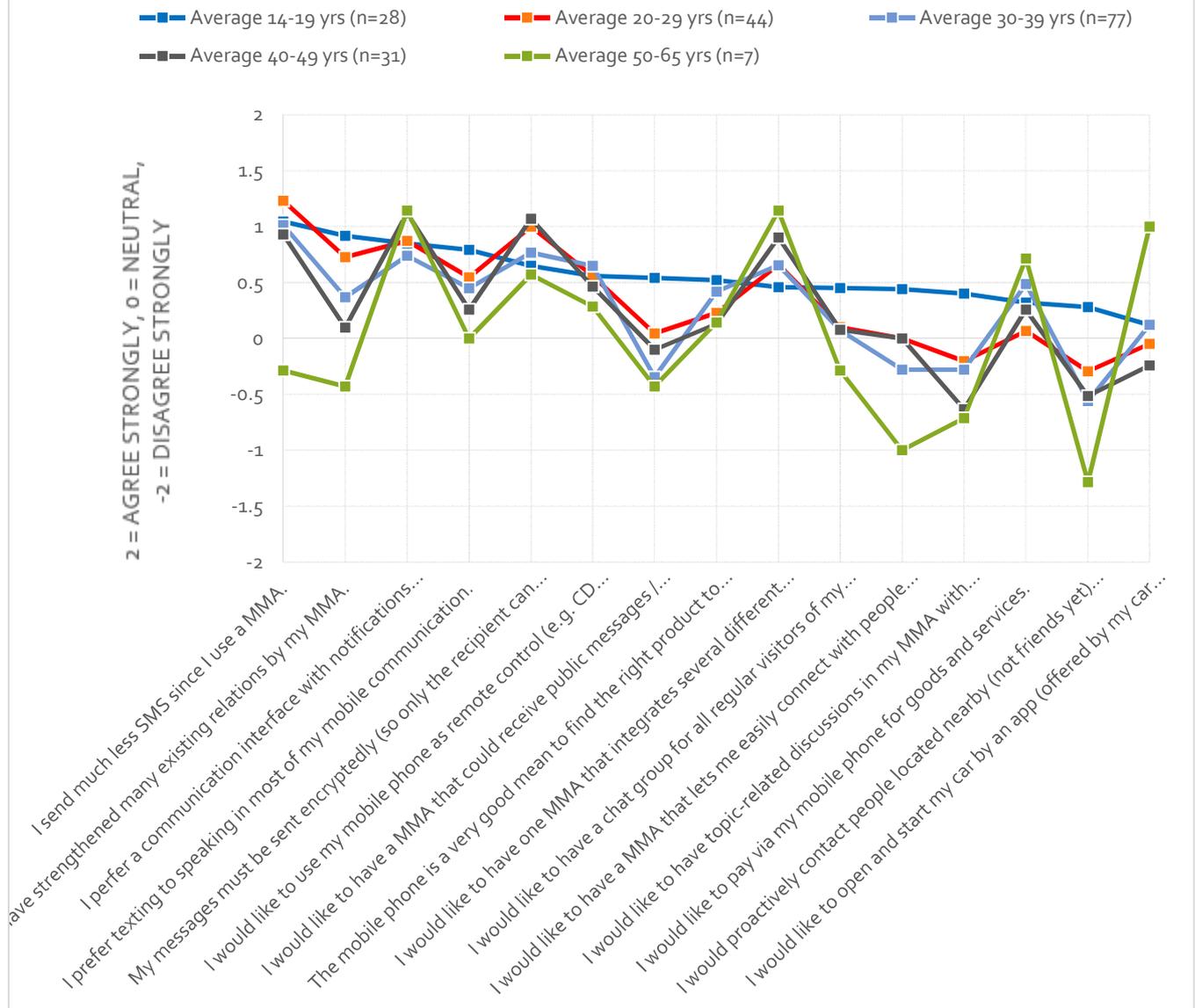


Result:

The activity ranking by age groups shows the biggest variance of all analyses. The similar curve movement of the older age groups discloses their similar activity levels which are in clear contrast to the youngest age group (14 – 19 years). But the cohort of the older age groups still shows logical variance: it underlines the assumption that the older consumers become, the less active they are in MMA. The chart shows that the age group 14 – 19 years is the most active consumer group in MMA. The highest agreement (smallest average deviation) across all age groups exists regarding 'making video calls' to which all age groups are mostly 'neutral'. The age group ranking discloses youth specialities: 5th, 6th and 9th top ranked activities are 'updating profile and time-line', 'following and exchanging with favourite brands and stars' and 'making new friends – made visible by my MMA'. Two activities that are in the activity ranking across cultures on some of

the last ranks. These placements document that some the very young consumers have a high correlation to Asian MMA features. International messaging is especially popular among young people documenting the trend that teenager are open to exchange with foreigners/strangers. Where in the preference ranking 'the MMA that integrates several MMA' is only on rank no. 9. The reason behind this setup could be that young people use two different kind of MMA, one for their friends (which they use with their telephone number) and one for new people/strangers (which they use anonymously with a user ID).

PREFERENCE RANKING, RANKED BY AGE GROUP 14-19 YRS



Result:

The youngest consumers have a high preference for ‘notification’ which first of all means speed of transmission. This result is in line with expert opinions that stated that speed of transmission is currently the most important parameter in the MMA industry.

Interesting is that the 50 – 65 years have the highest agreement across all age groups with ‘I would like to open and start my car with an app’.

The following results were found regarding the MMA product concepts in the surveys:

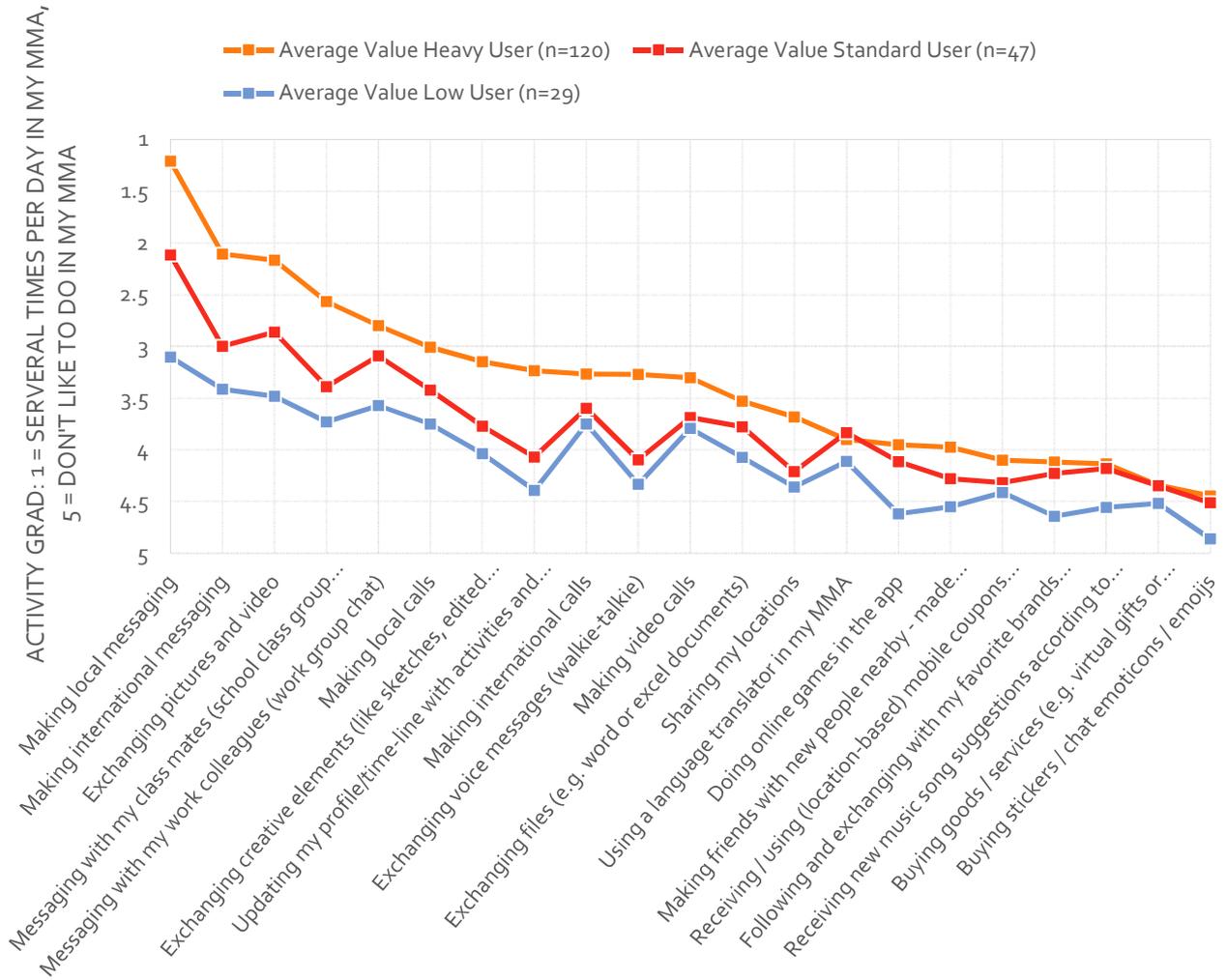
MMA that could receive public messages	0.541
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Chat group for regular visitors of my favourite leisure place	0.45
Like to have a MMA that easily lets me connect with people nearby	0.44
Like to have topic-related discussion in MMA	0.4
Would proactively contact people located nearby	0.28

All above concept ideas got in the age group 14 – 19 years a neutral to positive preference value, meaning that all of them are accepted by the majority. The group also discloses that all four product concepts have the same per preference logic: the older consumer become, the less they are interested in open communication solutions.

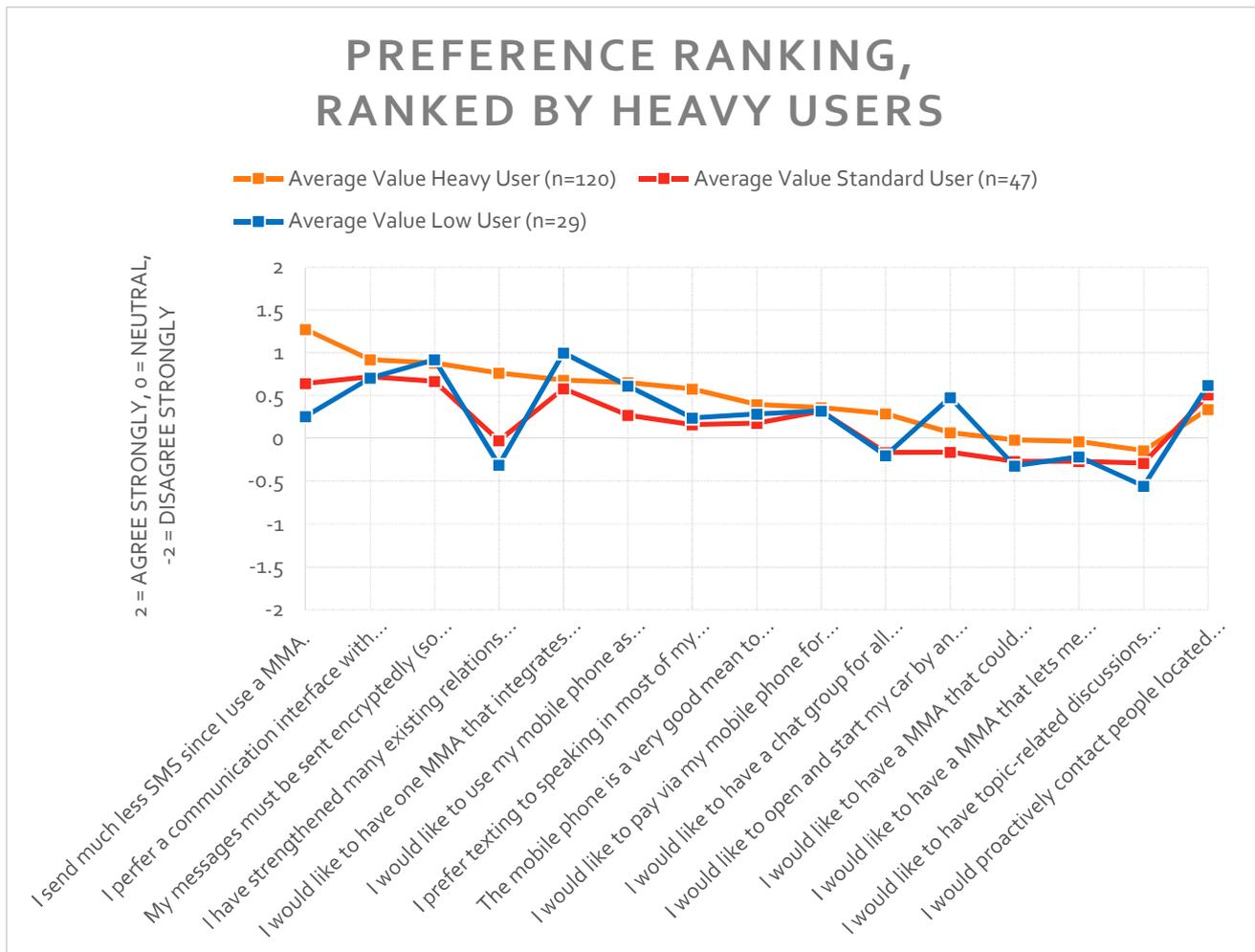
From the graph can be seen that that two cohorts are formed. There is a high correlation between Europeans and North Americans and between Asian and Latins. Proofing that Asians and Latins have more engagement in messengers than European and North Americans. This setting is also confirmed by the actual market success of LINE and WeChat, which mainly has been driven to Spain and South America.

ACTIVITY RANKING, RANKED BY HEAVY USERS



Result:

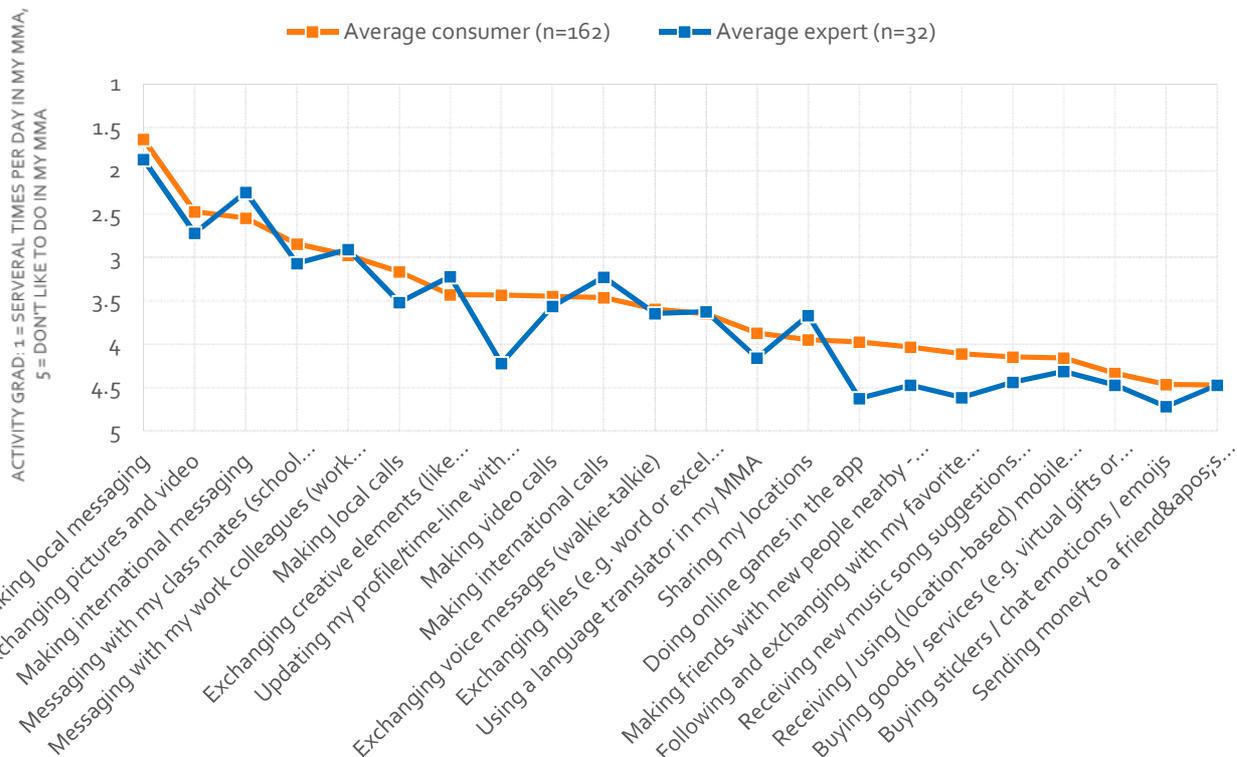
The activity ranking by user degree shows a logical result: heavy users are more active in MMA than standard users and low users.



Result:

The preference ranking illustrates rather consisting preferences between high and low users. Surprising speciality: Low user have the highest preference for 'would like to open and start my car by an app'.

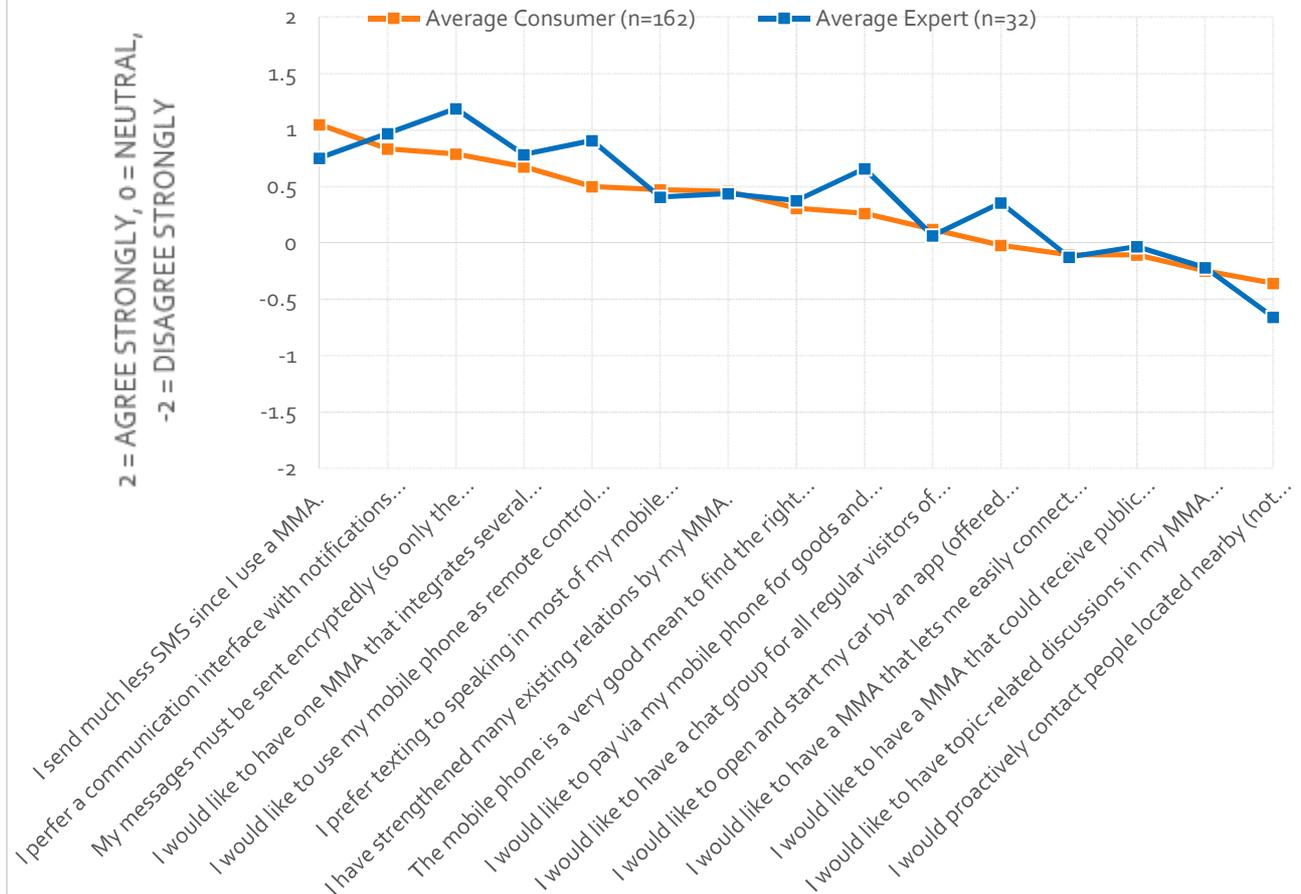
ACTIVITY RANKING, RANKED BY MOBILE CONSUMERS (VS. MOBILE EXPERTS)



Result:

Mobile experts and mobile consumers have a very similar communication behaviour in terms of preferred MMA features and level of activity.

PREFERENCE RANKING, RANKED BY MOBILE CONSUMER (VS. MOBILE EXPERTS)



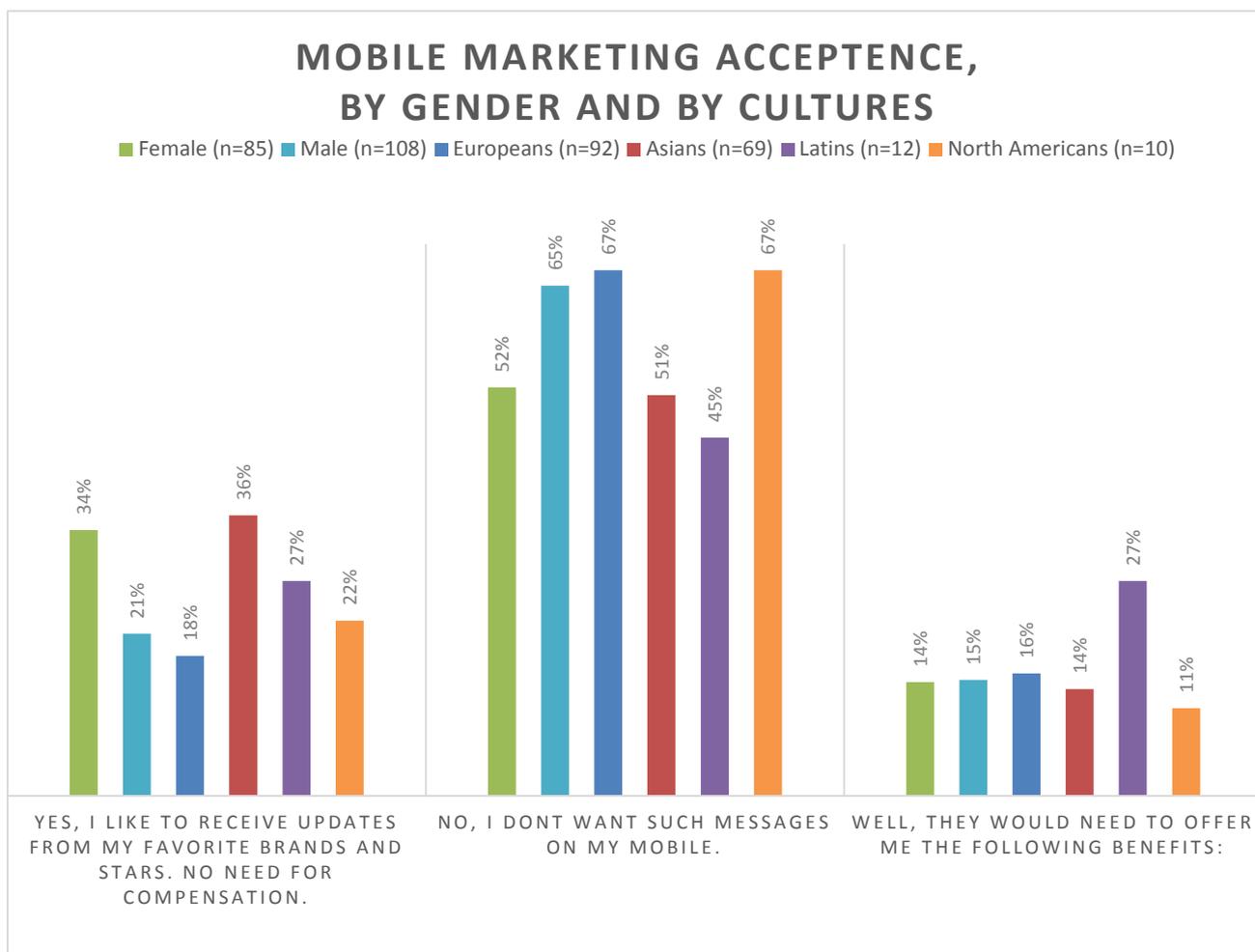
Result:

In comparison to mobile consumers, mobile experts have a higher preference for 'message encryption', 'use app as remote control', 'would like to pay via my mobile phone' and 'would like to open and start my car by an app'. These higher preferences hint to possible next development in MMA features. The wish for a MMA that integrates several MMA' is equally high in both cohorts, at 4th rank in the preference ranking.

./.

The following results were found regarding the four MMA product concepts in the surveys (in a scale from +2 to -2):

Chat group for regular visitors of my favourite leisure place	0.063 (experts), 0.121 (consumer)
Like to have a MMA that easily lets me connect with people nearby	-0.125 (expert), -0.107 (consumer)
MMA that could receive public messages	-0.032 (expert), -0.107 (consumer)
Like to have topic-related discussion in MMA	-0.219 (expert), -0.247 (consumer)
Would proactively contact people located nearby	-0.656 (expert), -0.358 (consumer)



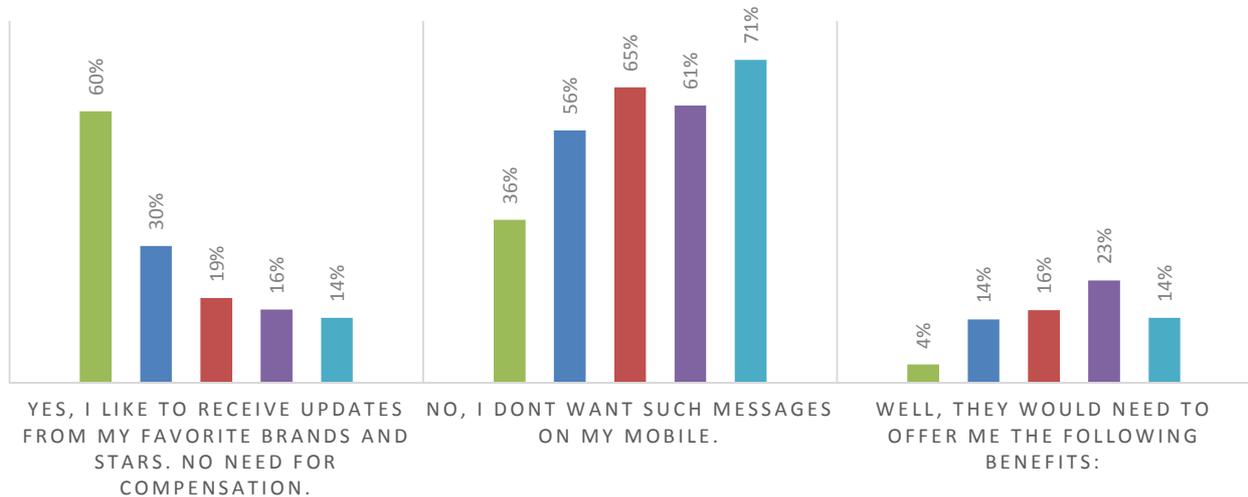
Result:

Females (34 % + 14% = 48%) are more likely to accept mobile marketing, compared to men (21% + 15% = 36%).

Latins give with 54% (27% + 27%) the highest conditional approval to mobile marketing. Asians with 50% (36% + 14%), Europeans with 34% (18% + 16%), North Americans 33% (22% + 11%). The Asian result is about in line with the results from the mobilelife.com panel stating that 40% of Asians accept mobile marketing.

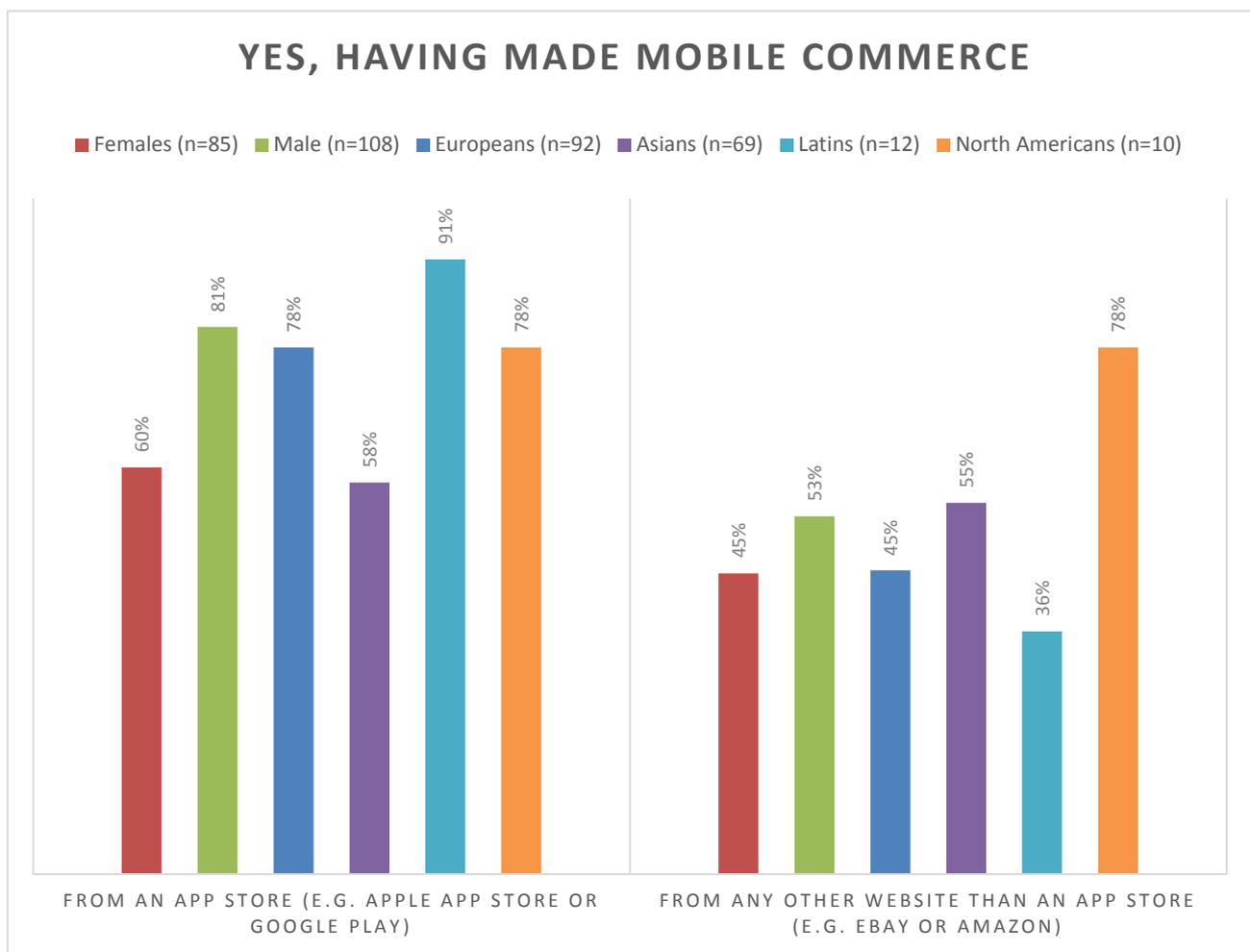
MOBILE MARKETING ACCEPTANCE, BY AGE GROUPS

■ Age 14 - 19 yrs ■ Age 20 - 29 yrs ■ Age 30 - 39 yrs ■ Age 40 - 49 yrs ■ Age 50 - 65 yrs



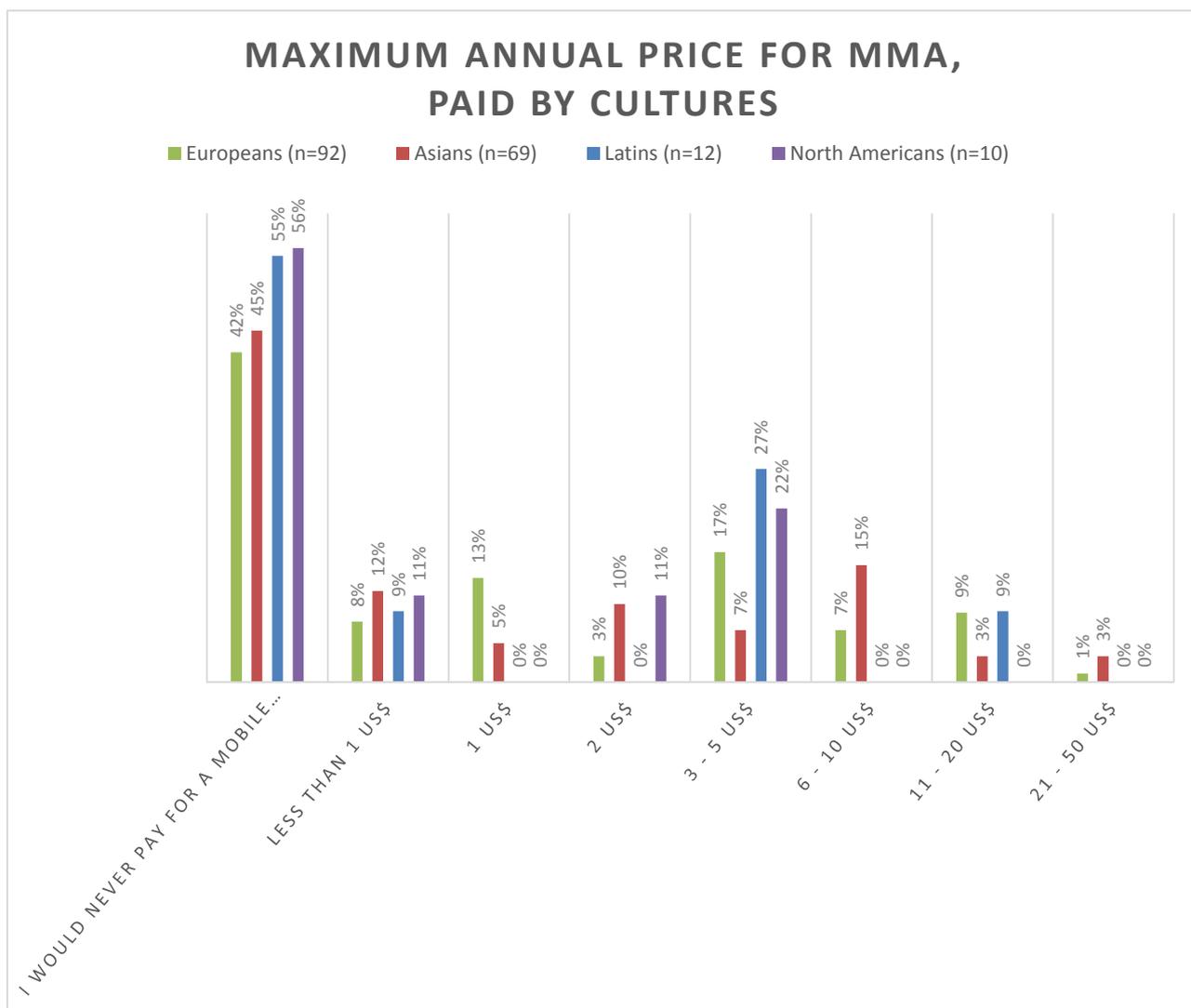
Result:

Young consumers (14 – 19 years) give a conditional approval of 64% to mobile marketing. Consumers (20 – 29 years) give a conditional approval of 44% to mobile marketing. General tendency: the older the consumer become, the less they are open to mobile marketing (exemption: 40 – 49 years).



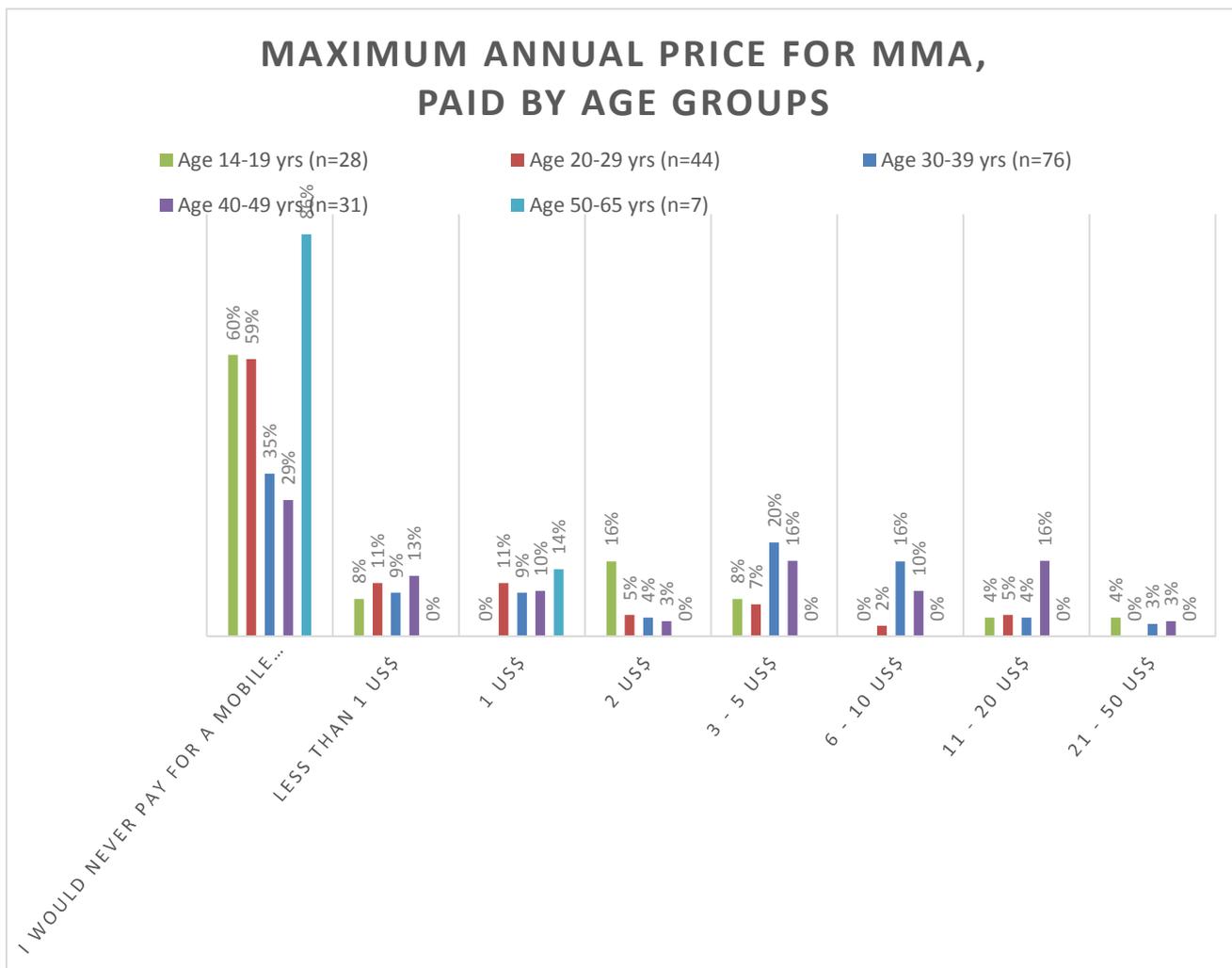
Result:

Men (81%+53% → avg. 67%) are more active with mobile commerce than women (60%+45% → avg. 52.5%). Asian have the lowest activity (58%+55% → avg. 56.5%) in mobile commerce among the four analysed cultures. This may refer to the situation that Western app store are not very popular in Asia, as Asians have their own app stores. This result is illogical to the previous result that Asians are most active in mobile marketing. Or it hints to the possibility that Asians like mobile marketing but hesitate more with mobile commerce than other cultures. WeChat's success in mobile commerce in China cannot be taken as reference in this survey as most of the Asian respondents in this survey are not from China. It does not make sense to show a graph about mobile commerce by age groups as the youngest generation 14 – 19 years is not yet eligible to do mobile commerce or has no access to payment options like credit cards.



Result:

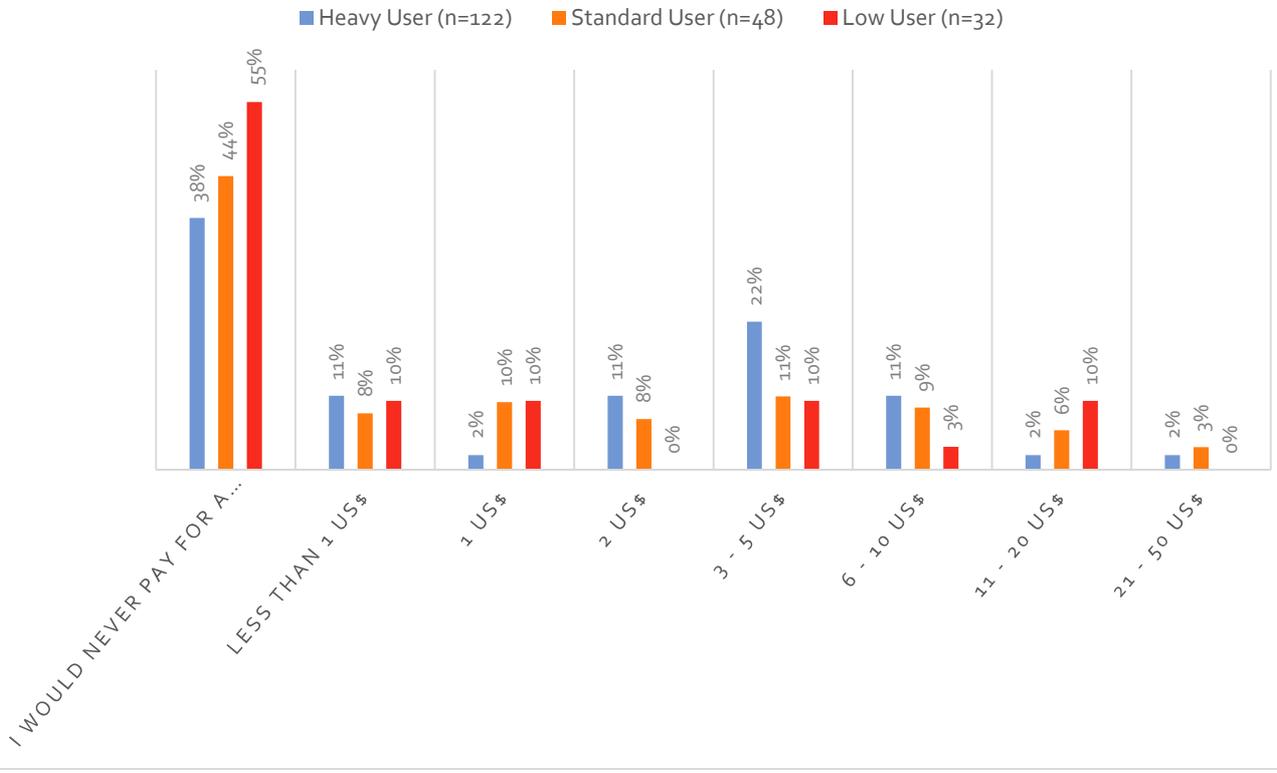
The mean of the maximum price for MMA lies at 'less than 1 USD' in Europe and Asia, and at 'will never pay for a MMA' in the Latin world and North America. Among the four analysed cultures, Asians would pay the highest average prices for MMA, followed by Europeans. 38% of Asians and 37% of Europeans would pay more than 1 US\$ for a MMA.



Result:

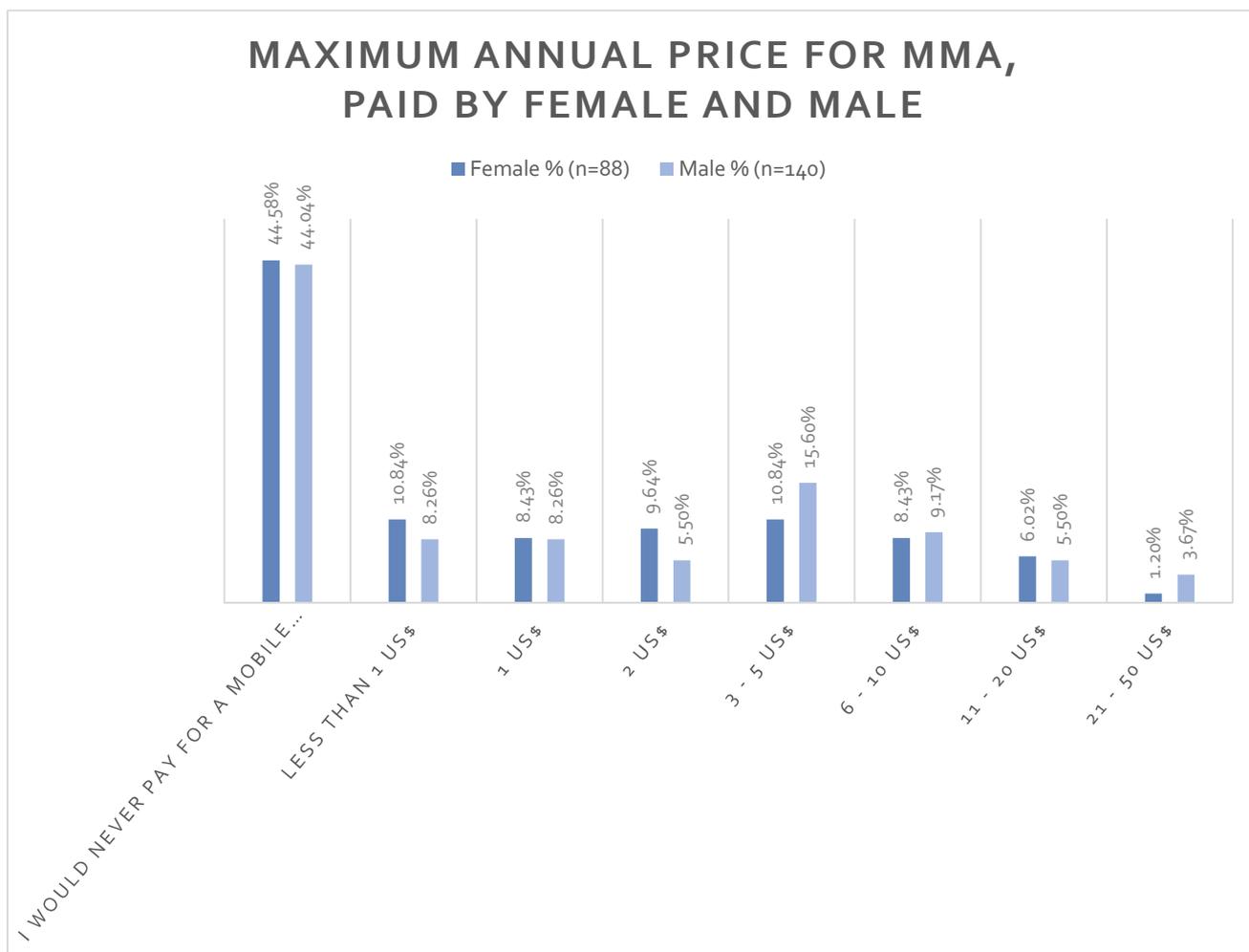
The older consumers become, the more they are willing to pay for a MMA. This logic is only valid up to 50 years, after 50 years the willingness to pay drops strongly. 32% of age group 14 – 19 years would pay more than 1 US\$ for a MMA.

MAXIMUM ANNUAL PRICE FOR MMA, PAID BY HEAVY TO LOW USER



Result:

The maximum price chart by communication type shows a logical result: Heavy user are most likely to pay for a MMA, compared to standard users and low users. 50% of the heavy users would pay more than US\$ 1 per year for a MMA.



Result:

Men and women have a similar paying attitude to MMA, meaning that they give the same valuation to a MMA. This outcome is in line with the survey result that men and women use the same features at about the same activity level.

Conclusion

To all five different MMA subjects have results been generated that give a good tendency basis to support decisions about MMA value propositions and their acceptances. In the next section, the survey result will be compared with the academic research.

6.0 Analysis & Discussion

In this section the author compares the survey results with the theories from the literature review and the secondary research in order to analyse whether the survey results are confirmed or disproved by the theories, or whether they the survey results reveal surprises. The author will refer to all the single result section, but will start with some general comparisons.

The success of MMA is best explained by seeing the combination of smartphones and mobile internet, enhanced messaging as top activity on the mobile, and the uncompromising use of technology possibilities like EDI, especially in highly competitive markets (Ramamurthy). In all mentioned fields have major changes and evolutions happened in the last five years: smartphones experienced the fastest technology adoption ever, messaging has been reinvented by bringing it to the mobile phone with real-time notifications, group chat (in contrast to SMS), stickers, and games. MMA are a welcomed private alternative to the transparent 1:n postings on social networks. EDI has existed for centuries but only with the introduction of contact lists on smartphones EDI could leverage the single manual work of collecting friends e.g. in Facebook into a one-stop process within no time. Technology is facilitating all steps in and round MMA and heightening the MMA experience.

The competitive action theory in the diffusion of Internet technology products in emerging markets by Zhang et al. is confirmed by the success of WhatsApp. Zhang et al. are pleading for simple marketing activities, WhatsApp is exactly doing this with a simple messaging value proposition and simple marketing only in form of mouth propaganda. WhatsApp is also aware of its opponents (Cavusoglu et al) and tries, instead, to cooperate with them (consumer protection authorities, mobile network providers).

The UTAUT2 model (Venkatesh et al., 2012) serves well to make the key drivers for technology adoption from a user's perspective visible: perceived usefulness (staying in contact with friends), ease of use (simple appliance in top-class user interface), price value (to avoid SMS cost), hedonic motivation (having messaging fun with colleagues), performance expectancy (immediate answer from messaging partners) and habit (only parameter which is negatively related to MMA adoption). The author's research results are also in line with the confirmed hypothesis from UTAUT2 that technology adoption has higher relevance in young consumers.

Cultural communication behaviour (Lewis; Hofstede) and specific personality traits like openness to experience, conscientiousness, extraversion, and agreeableness (Kang et al.) are helpful means to explain why Asians and youngest consumers (14 – 19 years) are most interested in open communication solutions, resp. public messaging.

The metrics of the network effect on MMA can especially be seen in the United States where MMA adoption is still low compared to Europe and Asia. When surveying users in the United States about MMA, they

repeatedly reported that SMS is fine for them and that when this users tried to adopt to MMA, most often, they found that only very few friends were also using the same MMA solution. Users are too scattered with low quantities on different MMA solutions in the United States (market fragmentation).

Afuah (2012) is right to as ask about the network organisation, especially in the context of EDI, more possibilities for new transactions within networks are possible.

The two cohorts (for same MMA activity level) Asian/Latins and European/North American from the author's research are also visible in the mobile usage data of the mobile life panel of TNS global (<http://discovermobilelife.com/>), where 38000 consumer from 43 countries are interviewed.

The results from the survey shows several references and commonalities to the cultural communication research (Lewis and Hofstede). An example: the Asian/Chinese culture is based on Guanxi (engl. network), which means that people stay highly connected with the people they meet during their lives, e.g. school colleagues. This clearly higher Asian relevance of school colleagues is also visible in the MMA activitiy ranking, which displays 'messaging with my class mates' as second highest MMA activity for Asian answers.

The influence of cultures on MMA communication is still there but due to globalization and multi-cultural nations in a decreasing extend. Kang et al can be confirmed when looking at the huge compaigns of LINE and WeChat which have success, but not sustainable success, the usage rate of new customers often remains low. Whereas WhatsApp is using no marketing at all and has already conquered most regional markets.

6.1 Discussion on hypotheses

The following hypotheses were supported by the survey:

H1: The activities and preferences in MMA differ by **age groups**. (see activity ranking by age group)

H2: The activities and preferences in MMA differ by **cultures**. (see activity ranking by cultures)

H3: The activities and preferences in MMA differ by **MMA communication types**. (see activity ranking by communication types)

H4: The activities and preferences regarding mobile marketing differ by cultures, **age groups and genders**. (see mobile marketing acceptance charts)

H5: The majority of users are willing to pay a small annual amount like USD 1 for a MMA. (see maximum price charts by cultures, age groups, communication types and genders)

6.2 Discussion on core questions

At the beginning of this study the author brought up the following questions:

1. What do (not) mobile phone consumers in their mobile messaging apps?
2. What would they (not) like to do in their mobile messaging apps?
3. What could be new features that meet the interests of mobile messaging app users?
4. How far can social media features and location-based services support the value proposition of mobile messaging apps?
5. How far can mobile marketing and mobile commerce sustain in mobile messaging apps?
6. What is the expected subscription fee for a mobile messaging app in the eyes of the users?

The following discussion gives the answers to these questions.

6.3 Discussion on MMA activity ranking

There were no surprises in the top activity ranks. MMA are mainly used for local and international messaging, exchanging pictures and videos, messaging with class mates and work colleagues and for local and international calls. These findings hint to the possible situation that other activities are not decision maker in a MMA. At the end of 2013, there are many MMA that fulfil the important and basic messaging features to a very high extend. Therefore, the entry barriers to be a general MMA player in the international market have become high. Telecom companies have recognized the power of MMA and have started to launch national versions of MMA which have a high potential to become local hero solutions. Furthermore, a surge of niche player can currently be found. Niche players are seen in three different main fields:

- security/ephemeral messaging (chatfrankly.com, backdoorapp.com)
- creative messaging (e.g. reactapp.com)
- cross platform messaging (e.g. Uni Messenger, inboxapp.co)

Niche player with special and creative value propositions are most relevant to the youngest age group of consumers (14 years – 19 years, plus 20 – 29 years, like Snapchat proves).

An important part of the MMA competition lies in usability: The highest targets of a MMA is to make messaging as easy as possible and as creative as possible for users. The MMA Kik, which has recently been changed from a native app to a HTML5 web-browser by its developers, shows that there is still much room for innovation even in the core field of messaging. This change enables the user to search for pictures in the internet directly from the MMA and to add any of these pictures into the messaging interface without downloading and saving the picture to the mobile device first. The author regards this technological advancement for easy and creative messaging as one of the key drivers of Kik's recent success.

The activity rankings proved that MMA activities are differentiated by age groups, with the youngest age group (14 – 19 years) the most active groups. Therefore it makes sense to focus on this group when doing MMA decisions.

Initiated by the high ranks (4th and 5th) for ‘class mate chat’ and ‘work group chat’ in the activity ranking the author sees high potential for group chats, public ones or user-group defined ones. Supporting evidence for this assumption comes also from the positive feedback from the younger generation to the four product concepts that were tested in the preference ranking.

Below table is from Zhang and Venkatesh (2013) summarizing the impacts of online and offline networks on job performance. One hypothesis that was supported by their research was that offline direct ties positively moderate the relationship between online direct ties and job performance. This means real life friends brought together online will increase the job performance by various drivers like knowledge exchange. The same pattern is applicable to school classes. Bringing together online users who are not friend or users that even do not like each other would be contra-productive. In school chat groups, such situations can even lead to cyberbullying when a new group is set up just to exclude a certain person from joining. But this action improves productivity of the rest of the group.

Resource Characteristics	Offline Direct	Offline Indirect	Online Direct	Online Indirect
1. Maintenance cost	Low	High	Medium	High
2. Strong ties	High	Low	Medium	Low
3. Weak ties	Low	High	Medium	High
4. Network homophily	High	Low	Medium	Low
5. Network reach	Low	Medium	Medium	High
6. Information integrity	High	Low	High	High
7. Fast receipt of information	Medium	Low	High	Medium
8. Third-party surveillance	Low	High	Low	High
9. Resolving temporal and spatial constraints	Low	Low	High	High
10. Transmitting contextual information	High	Medium	Low	Low
11. Transferring information in parallel	Low	Low	High	Medium
12. Documenting and retrieving information	Low	Low	High	High

‘Buying stickers’ is the least popular activity in all age groups and in all cultures, hinting to a scenario that LINE will not find the same adoption rate in other parts in the world like it found in Asia.

An interesting hint can be taken from the preference ranking mobile consumer vs. mobile expert, looking at the points of highest divergence. Points which are more relevant to mobile experts (expressed in higher preference averages) could hint to the next MMA developments and solutions to come: 1) encrypted/secure messaging, 2) smartphone as remote control, 3) payment by messenger, 4) apps enablement (smartphone as car key). The top 10 MMA (by number of registered users) represent huge networks of 1:1 connections. This brings MMA providers in a powerful position. MMA could start to promote some apps and suggest

them to MMA users according to their messaging. The decreased discoverability of apps in the existing app stores could be another driver for this MMA value proposition (MMA as app delivery platform).

6.4 Discussion on MMA preference ranking

The author's secondary research has shown that it is very common for the younger generation to start messaging with strangers via 1:n-platforms like Instagram and Twitter. International messaging is on 2nd place in the activity ranking of 14 – 19 year olds. This trend will further develop into public messaging and open communication solutions. The results from the product concept tests show that there is potential for such solutions, but currently still limited to the segment of 14 – 19 years, which are the phalanx of next coming generations which will be even more open to international messaging. The preference ranking underlined this assumption: all four product concepts reached positive averages. Whereas in the overall result of mobile consumers only the 'chat solution for regular visitors of favourite leisure place' received acceptance in the majority.

The following results from 14 – 19 years old were found regarding the MMA product concepts in the surveys:

MMA that could receive public messages	0.541
Chat group for regular visitors of my favourite leisure place	0.45
Like to have a MMA that easily lets me connect with people nearby	0.44
Like to have topic-related discussion in MMA	0.4
Would proactively contact people located nearby	0.28

The following results were found regarding the MMA product concepts in the surveys:

Chat group for regular visitors of my favourite leisure place	0.063 (experts), 0.121 (consumer)
Like to have a MMA that easily lets me connect with people nearby	-0.125 (expert), -0.107 (consumer)
MMA that could receive public messages	-0.032 (expert), -0.107 (consumer)
Like to have topic-related discussion in MMA	-0.219 (expert), -0.247 (consumer)

Would proactively contact people located nearby	-0.656 (expert), -0.358 (consumer)
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6.5 Discussion on mobile marketing in MMA

The young generation uses Twitter and Facebook for two main reasons: 1) to express themselves and share their life with others and 2) to follow and exchange with the brands and stars they like, in a 1:1 relationship. WeChat and LINE are convenient solutions to do that. A person can subscribe to a brand or star (just add them as a friend) and will receive updates from this account, it is all based on opt-in. These updates happen in an agreeable and non-obtrusive manner. The updates can be easily found when opening WeChat or LINE under unread messages. In these mobile marketing activities from brands in WeChat or Line, subscribers receive pre-notifications and advance information, discount coupons, special invitation and loyalty points, and so on. These were also the benefits that users mentioned they want to have when subscribing to a brand or star. Therefore the author sees high potential for further adoption for mobile marketing across all cultures in the youth segment. Mobile marketing does not appeal to all age groups, as about 66% of the Europeans do not want to follow a brand or star in MMA, according to the survey.

The work of Banerjee about intrusiveness of mobile marketing is not too relevant anymore in the MMA case, as companies like LINE and WeChat use a model of mobile marketing which Banerjee did not anticipate in 2008.

6.6 Discussion on mobile commerce in MMA

This area is more complex as mobile commerce in an advanced form exists mainly only in China or through LINE stickers and games. Basically, Europeans are open to use their mobile phones to pay (51% positive, 33% neutral, 26% negative). But acceptance is lower when Europeans are asked whether they want to buy products or services via MMA (33% want, 60% do not want). The high acceptance for mobile commerce in China is founded in the existing bank infrastructure and availability of credit cards. The big majority in China has no credit card, therefore a simple solution like WeChat where consumers just need to connect an online bank account with their mobile phones is welcomed.

As mentioned above, mobile commerce in MMA is only common in Asia, and then mainly in the fields of stickers and games. Both fields have especially positive relevance to Asians. Stickers in communication have three main areas of appliance 1) they help to facilitate sophisticated writing (Chinese alphabet), 2) they help to express feelings (in Asian conformism) and 3) they are an equivalent to an expressive oral languages (Latin world). LINE and WeChat make millions in revenue by selling stickers. From this perspective it is amazing that 'buying stickers' was about the lowest activity across all cultures, the same is true across all age groups. The author assumes this discrepancy exists due to a too small sample of young Asians in the survey. Europeans (exclusive Southern Europeans) and North Americans use rather other forms to express themselves, like pictures in Instagram or Snapchat, according to the survey. Due to this set-up the author sees less relevance and benefits in stickers for the Western world whereas stickers are one of the core value propositions in Asia and the Latin world.

The other revenue stream is online and video gaming. Again, Asia is a unique environment for gaming due to its infrastructural (internet) and technological (gaming solutions) advancements. Factors from social life play also an important role: due to the lack of different alternatives, Asians who grow up in highly-dense megacities like Tokyo, Seoul, Hong Kong, Singapore, Bangkok or Beijing are more bound to playing video games than Europeans or North Americans who have more outdoor activity possibilities. Furthermore, 'doing online games in MMA' was placed 5th last activity by Europeans and North Americans, proving that online gaming has not the same attraction in the Western world like it has in Asia.

'Buying goods and services' is third last placed in all age groups and all cultures. This is especially surprising in the case of Asians. The author refers this result to the fact that mobile commerce like it is done by WeChat in China is still unknown to other parts in the world. The author understands the user-friendly and easy to install business mechanisms used by WeChat and believe in their success model. Additionally, the examples of existing mobile commerce case studies give the author the belief that there is a high potential for mobile commerce in MMA globally, just not with such high adoption rates like in Asia. It will just be a question of time until other MMA will adopt the success models of WeChat and LINE, too.

In expert talks the author was referred to the scenario that eventually messaging will be about big data and advertisement. MMA would be highly capable to place appropriate ads according to the content of our messaging (like Google and Facebook do it in emails and social media). Though no MMA is using advertisement as business model right now, it would bring up a lot of questions: How are our messages analysed? Where are our messages analysed? Are our messages stored somewhere? It is clear that consumers would trust their existing and local environment more than e.g. a Chinese or American messenger solution, especially after the NSA issue. This is another reason why the author expects lower adoption for e.g. WeChat mobile commerce abroad but sees high potential for local hero solutions.

6.7 Discussion on social media in MMA

'Updating my profile and time-line in MMA' was top 5th ranked activity by age group 14 – 19 years. This high rating brings the author to the conclusion that social media features will find high acceptance in MMA among the young generations. Therefore, it makes sense for MMA to explore the integration of innovative social media features.

6.8 Discussion on maximum price for MMA

Diverse expert opinions favour the freemium model with in-app purchase options as the most successful app business model. Apart from WhatsApp, all other MMA are based on this models, with LINE and WeChat generating the highest revenues in MMA globally. Even though there is a high emotional valuation for MMA (expressed by high preferences averages for 'I send much less SMS since I use a MMA' and 'I have strengthened many existing relations by my MMA'), there is not an equivalent monetary valuation by the users. This is mainly caused by the context that users need buy mobile internet data rate plans from telecom companies, which most often included unlimited SMS nowadays. This puts some MMA into the strange situation that they create very important and efficient tool for users but they do not get paid directly for

their work. The reward for the MMA are the financial company valuations by venture capitalists. But the survey shows that there is openness to pay for a MMA. The logic is: the more a person uses a MMA, the more this person is open to pay. The older a person becomes, the more is this person open to pay for a MMA (this logic is only true until 50 years old). It is in the hands of the MMA to find additional premium service which can be priced between 1 and 10 US\$ per year to still find acceptance of about 20% to 30% percent of the MMA users.

All user groups apart from the youngest generation are neutral to the statement 'I have strengthened many relationships'. This outcome is in line with a study of Pollet et al., (2011) which states: 'Use of social network sites and instant messaging does not lead to increased offline social network size, or to emotionally closer relationships with offline network members'. It is still interesting how much time we spend on messaging and social media and how low apparently is the benefit for our relationships. From this aspect one could argue that messaging just adds to the general information overflow.

7. Conclusions and Recommendations

The target of this research was to be able to give more informed answers to some open subjects in the MMA value proposition development. In this section the author gives his conclusions and recommendations according to the findings from the survey results, expert interviews and the secondary research.

7.1 Key Findings

First, the author summarizes the 7 most important findings of his research project, which also can give ground for further research in MMA:

1. 'Notification of online, sent, delivered, read' received the highest confirmation in this survey. The online timestamp and delivery notifications increase the feeling of mutual and permanent connectivity and help to start communication exponentially. Therefore, the author suggests that timely-accurate online time-stamp and notifications are the true delighters (Kano model) of MMA.
 2. The youngest consumer segment (14 – 19 years) is by far the most active consumer segment in MMA.
 3. There are two cohorts of MMA activity levels: Asia and the Latin world (higher activity) vs. Europe and North America (lower activity)
 4. Open communication solutions, resp. public messaging are most accepted by Asians and youngest consumers (14 – 19 years), possibly partly related to the Twitter behaviour of this segment.
 5. The survey showed that only two clearly distinguishable consumer segments exist for MMA: youth segment or general segment. Due to a very similar MMA activity and preference ranking of men and women is no gender specific solution demanded.
 6. Highest affinity for mobile marketing have youngest consumers (64%), Latins (54%), Asians (50%) and females in general (48%).
 7. 'Buying stickers' is the least ranked MMA activity across age groups and cultures.
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7.2 Generalisability from the survey results

All further generalizability, findings and recommendations are summarized on the following pages:

Generalisability from the survey results	Answers from survey results	Recommendation
	<p>Age is the strongest differentiator regarding affinity in MMA.</p> <p>Youngest consumers (14 – 19 years) have the highest affinity to MMA among all age groups. They use MMA most often, they use other features than older consumers, and their use cases are different. The affinity decreases by growing age. Global result.</p> <p>Men and women have a similar MMA feature preferences and use the features on same level of activity (only difference: women have a higher affinity for mobile marketing). This is also represented in the result that men and women would pay the same maximum price for MMA. Global result.</p> <p>Different cultures have similar MMA feature preferences (besides some new Asian features like time-line updates, making friends nearby and mobile marketing) but use the features on different levels of activity. Asians and Latins are a cohort (high activity) and Europeans and Americans (lower activity) are a cohort regarding this.</p> <p>Different cultures have different opinions on new MMA value propositions (MMA preference</p>	<p>A focus on the youth segment should create highest response.</p> <p>Older segments have less time, are less interested in MMA, and are less open to making new relationships. They need a solid MMA solution and most often they already have it from one of existing big MMA players.</p> <p>Gender-specific MMA solutions are not requested.</p> <p>The globalization as brought cultures nearer but there are still differences for some new elements in MMA which make global adoption a differentiated subject. New elements will be taken up only by younger consumers.</p> <p>New features are more dependent on cultural behaviour the existing learnt features. They should be considered for each culture</p>

	<p>ranking). This is in clear contrast to the cohort patterns about the current MMA activities from the MMA activity ranking results. This may hint to the situation that decision about new features need to be tested with every culture separately and then accordingly be adopted.</p> <p>Heavy users and low users have similar MMA feature preferences but use the features on clearly different levels of activity. Global result.</p> <p>Mobile marketing finds highest affinity in youngest consumers (14 – 19 year).</p> <p>Women have more affinity for mobile marketing than men. This confirms the MMA feature preferences where mobile marketing the only key difference between men and woman is.</p> <p>Latins have with 54% highest affinity to mobile marketing. Asians: 50%, Europeans with 34%, North Americans 33%. This affinities confirm the two cohorts Asians/Latins and Europeans/North Americans from the MMA activity levels.</p>	<p>separately, as the may not find adoption everywhere and then just decrease the usability of the interface by an additional, not used feature.</p> <p>It seems there is no avant-garde in MMA. This means the behaviour made visible by heavy user / early adopters can be assumed for the mass, too, just on a lower activity level.</p> <p>Mobile marketing should be first targeted at youngest consumers, with emphasis on females. Mobile marketing adoption time will take about 50% in Europe and North America than in Asia and Latin world.</p>
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7.3 Surprises from the survey results

Surprises from the survey results	Answers from survey results	Recommendation
	<p>'Doing online games in the MMA' and 'buying stickers' rank very low in feature preferences across all age groups and across all nations (slightly better in Asia and Latin world). 'Doing online games in the MMA' has the biggest average deviation among cultures, proving its controversy.</p>	<p>Both features are key revenue resources of big MMA. The survey data set can be biased. Stickers are a driver for communication. They should not be left out. Gaming is more demanding in terms of resources and system preparation. Gaming could be left, if a value proposition needs to be reduced.</p>

7.4. Answers and recommendations to all research questions

Research questions	Answers from survey results	Recommendation
<p>1. What do (not) mobile phone consumers in their mobile messaging apps?</p>	<p>This question differentiates by age groups and by cultures, but not by men/woman and heavy/low users.</p> <p>The top MMA activities are among all nations similar and focus on core messaging features: local and international messaging, exchanging photos and video, chatting with school or working colleagues, making local and international calls. Creative messaging is also popular.</p> <p>A timely-accurate online timestamp and delivery notifications increase the feeling of mutual and permanent connectivity and helps</p>	<p>The further MMA development should emphasis on improvement of core messaging features (as they are most popular). But this is very difficult as the big MMA players have a strong competitive advantage. Differentiation potential lies in new messaging value propositions, or orientation to youth/ethnic/local or own customer segment.</p> <p>Notifications and online time-stamp are the true delighters (Kano model) of MMA. They should be applied in a MMA.</p>

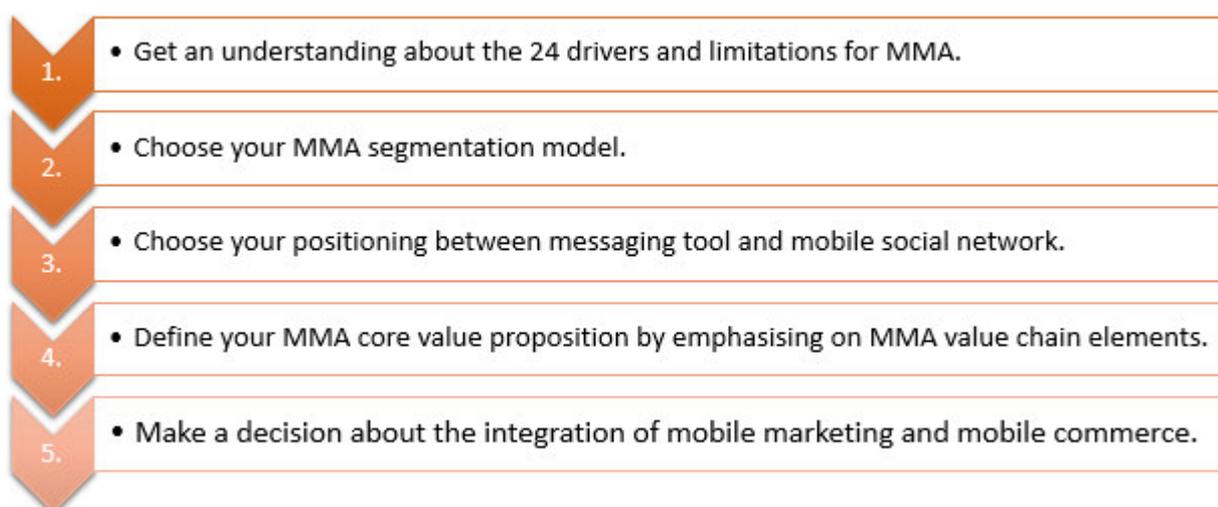
	<p>to start communication exponentially.</p> <p>Most not wanted in MMA by consumers (without age group separation): Playing online games, following favourite brands and stars, buying goods, sending money, buying stickers.</p>	<p>All these features are complex, and rather new to consumers. Many misunderstandings exist about mobile marketing among MMA users. MMA should start with simple mobile marketing and mobile commerce activities like experienced in Asia.</p>
<p>2. What would they (not) like to do in their mobile messaging apps?</p>	<p>Would like to (based highest numbers of answers with 'never did, but would like to do in MMA'): Using a language translator, exchanging files (e.g. Word), buying goods, receiving mobile coupons, receiving music suggestions</p> <p>Would not like to: see above</p>	<p>'Using a language translator received highest approval'. Translation would be especially useful at international messaging.</p> <p>The other mentioned activities could be introduced by simple solutions step-by-step, testing consumer acceptance.</p>
<p>3. What could be new features that meet the interests of mobile messaging app users?</p>	<p>Public chat groups, public messaging, message encryption, ephemeral messaging, payment by MMA payment, MMA integrator for several MMA, app recommendations as an alternative to app stores.</p>	<p>Further consumer research and product concepting should happen in this field. Youngest consumers (14 – 19 years) show highest affinity for these solutions.</p> <p>Mutual mobile connectivity will further increase, creating even more sophisticated features which will with help of data tagging, mining, and matching systems to facilitate communication between people who do not know each other yet but share a common interest or favourites.</p>
<p>4. How far can social media features and location-based services support the value proposition of mobile messaging apps?</p>	<p>Social media features are only relevant/popular to consumers aged 14 – 20 years, in all older segments not.</p>	<p>The author expects that the youth movement from social media to MMA will continue and, consequently, find more relevance in MMA, also in Europe and North America. Location-based services</p>

		and open communication features (like meet people nearby) will gain in relevance. As from now on, all following generations will even be more attracted to this new technology possibilities.
5. How far can mobile marketing and mobile commerce sustain in mobile messaging apps?	<p>This subject is complex. The survey shows three different aspects:</p> <p>1) Mobile marketing in form of 'Following and exchanging with favourite brands and stars' is popular and accepted among youngest consumers (14 – 19 years) only, as they have discovered, learnt and experienced the benefits from mobile marketing on permission basis. It is executed in a non-obtrusive and efficient manner by LINE and WeChat.</p> <p>2) All cultures are positive to 'paying by mobile phone'. Surprisingly, Asians and Europeans have the same average regarding this point. This proves that Asians are not much more open to the mobile commerce than Europeans. Latins and North Americans have the highest average.</p> <p>3) 60% of European say no to 'Buying goods or services in MMA' but 64% of Asians say yes. The difference is: Asians have experienced the simple buying process in MMA in WeChat and LINE.</p>	<p>Many consumers think mobile marketing or mobile commerce needs to be done in an obtrusive and intrusive way. Asian examples show that is not at all the case. The consumers has to be educated to the positive. The author see high potential for mobile marketing and mobile commerce in MMA based on the simplicity of international case studies which have medium barriers to be copied in other regional markets. Mobile marketing and mobile commerce will sustain in MMA, it just takes time than in Asia, and needs the right offers to young generations.</p> <p>If the purchase/transaction system is simple (like seen in app stores), consumers are ready to do mobile commerce.</p>
6. What is the expected subscription fee for a mobile messaging app in the eyes of the users?	More than 50% would pay more than 1 US\$. The most promising model is freemium with in-app purchase. Heavy user would pay	There is much room for creative upselling.

	most. Paying willingness increases with age until 50 years.	
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7.5 The 5 step MMA Decision Framework

Four years after its launch, the MMA market is in the maturity phase in developed countries and still in the growth phase in developing countries. The market shares are currently being distributed. In a heavily crowded market is vital to have a **simple** value proposition for a **clear** positioning towards a targeted consumer **segment**. The author suggest the following MMA decision grid for new market entrants and existing MMA development:



Explanations:

1) Get an understanding about the 24 drivers and limitations for MMA.

2) Choose one of the five MMA segmentation model: 1) General segment model (e.g. WhatsApp), 2) youth/creativity segment model (e.g. Snapchat, Kik), 3) ethnical segment model (e.g. WeChat or local hero MMA), 4) feature phone segment model (saya.im, mxit.com), 5) specialized feature model (e.g. focusing on end-to-end messaging encryption like threema.com or on privacy like franklychat.com) or the most recent model: 6) customer segment model (Laiwang Messenger for Alibaba, Yixin for China Telecom).

The author's research showed that there is no segment to clearly differentiate apart from youth group and general segment, but new messaging special interests like end-to-end messaging encryption a gaining users fastly.

3) Make a decision regarding your positioning between messaging tool and mobile social network. A positioning somewhere in between, will lead nowhere. If mobile social network is selected it implies that the target group will be youth segment. The author's research showed that older consumers are not yet interested in maintaining a profile or time-line in a MMA/mobile social network.

4) Define your core value proposition by choosing which elements of the MMA value chain you want put most emphasis: The author's research and expert exchange has shown that most critical for success are the following MMA value chain elements: message delivery (message delivery speed; notifications; online timestamp), interface, messaging proposition as well as automated directory management (EDI). Due to the advanced MMA market, the author sees most potential for new creative messaging propositions (what can be sent and how easy can it be sent), and for mobile marketing and mobile commerce in a later stage (based on the simplicity of international use cases which have medium barriers to be copied in other regional markets).

5) Make a decision about the integration of mobile marketing and mobile commerce. First study cases like 'The immediate success of Paul McCartney's official account in LINE' and 'Flash sales of Xiaomi (Chinese smart phones) in WeChat' show that there is big potential for mobile marketing and mobile commerce in MMA. The cost for marketing campaigns in LINE and WeChat are not lower, but a company can currently be at the right place at the right moment with marketing activities in MMA.

Practical example: The success of WhatsApp is based on a single-minded messaging value proposition executed to satisfy highest expectations for a lively interface (usability) and messaging delivery (delivery speed, delivery notifications and online timestamps). Furthermore, an automated electronic data interchange of mobile phone numbers from a user's contact list lets the social graph of WhatsApp grow exponentially, compared to WeChat and LINE.

In December 2013, the barriers of entry the MMA market with a new solution have gone up rather high. A start investment for a new MMA is about at US\$ 500000 for messaging only (text, pictures, walkie-talkie) to have the first version ready for market launch. To introduce also VoIP, which is the most difficult part, another several US\$ 100'000s have to be added. Whoever wants to launch a MMA should have at least the following team: 1-2 developers (one for iPhone, one for Android), 1 screen designer, 1 backend IT architect, 1 CIO, 1 product manager, 1 CEO. Plus marketing budget (source: expert interviews).

8.0 Appendices

9.0 References

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