

# CONVERGING TECHNOLOGY, DIVERGING FAMILIES

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## PREFACE

Teenagers are often described as insatiable consumers who are at the forefront of the development of media and communication. However, there are other sides to the story. Always being connected and available can come at a high price. Based on ethnographical research in Sweden, Spain and the United States, this paper explores how teenagers who are extensive users of technology actually have mixed feelings about the sheer abundance of communication and media options with which they are surrounded. Teenage attitudes towards the convergence of telecom technologies are founded in an increased need for control over technology and communication.

On a larger scale, the convergence and personalisation of telephones, computers and TV devices has had a fundamental effect on interaction between teenagers and their families. Technology enables teenagers to become more individualised in relation to the rest of the family. When entering new stages of technical advancement, the family unit develops different strategies for dealing with the drawbacks related to technical development. The family becomes reactive and is able to perceive technology both as a possibility and as a threat.

## BACKGROUND

The rapid increase in the development and use of everyday technology is changing the structure of the home environment in many fundamental ways. Media and communications are being made available – to

quote the old Martini tagline – “Anytime, anyplace, anywhere”. The development of convergence and wireless technology can be described from a technical viewpoint, although the implications are primarily cultural. In short: it is not about the technology itself – it’s about what we do with it. The tricky part is that we don’t actually know how we will use devices until we’ve had them for a while. For instance, could the marketing people at Apple really have foreseen pod-casting? It is the interaction between people and technology that creates the complexity of secondary innovation; namely, social innovation.

Technological development is currently paving the way for the increased individualized use of devices at home, which in turn has implications on how family members interact as a group. These changes in behaviour can be particularly challenging in families with children or teenagers, where there is a clash between old and new ideas about technology, home life and family.

In 2005, Augur and Ericsson conducted a study into teenagers’ general attitudes with a particular emphasis on media and communications. The sample consisted of four focus groups and 18 at-home interviews carried out with teenagers in Sweden. In 2006 the findings from the study on teenagers and the changes in the home environment were developed further, in an ethnographic study covering Sweden, Spain and the United States. The sample consisted of 12 focus groups (four in each country) and 17 at-home observations (five to six in each

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country) where we visited each family at home twice and spent a total of eight hours observing them, interviewing them and documenting their everyday life in pictures.

The two studies have provided insights into the benefits, but also the challenges that technology poses. There are several ways of dealing with the role that media and communications devices have come to play in families, and more specifically, in teenagers' lives. This paper outlines examples of how different stages of technical development call for different strategies for dealing with the changes that this development brings about in everyday life.

### RETHINKING FAMILY LIFE AT HOME

For a long time the average citizen had only the home telephone as their primary technology of communication network (Wellman and Tindall, 1993). However, recent developments in communication technologies have been quite dramatic – especially in relation to cordless home phones, mobile phones, broadband and the Internet – resulting in faster and more efficient global communication. The so-called communication revolution is reaching the masses, and highly complex technologies are entering everyday life. Thus, we communicate and consume media more than ever before, with both frequency of phone calls and talk time reaching historical highs. We are also talking more than ever on mobile phones and using the Internet for an increasing amount of communication. We spend more time than ever consuming media via newspapers, TV and radio channels and especially via interactive Internet media. Digital and online technologies are playing an ever greater, more central role in the lives of consumers. The world is changing radically, and we've still only come part of the way on the journey towards a society that is both digital and networked.

In our studies of these developments, it is apparent that the actual number of devices (computers and TVs in particular) used in the household is a crucial factor for determining the social and

physical implications of home technology. As the family becomes more technically advanced, positive and negative consequences are triggered. The increased number of devices can be interpreted as a consequence of the interplay between people, technology and physical spaces. It can be perceived as a development that takes place within each family as children become older and require greater access and more privacy in relation to their use of media and communication devices. Another way of studying the different stages of technological advancement is from a macro level perspective, given that the level of technological maturity varies between markets and cultural contexts at large.

In order to exemplify the developing trend towards a greater number of devices, and how this trend affects families with teenagers, we will briefly describe four case studies which each represent different ways of dealing with technology at home. Each case illustrates a stage of technological development which is of particular interest in the light of our objectives.

#### Case 1: The battle of the screen

*The Aristrain-Fernandez family consists of Jose Manuel, 43, Consuelo, 47, and their two sons Joaquin, 13 and Pablo, 15. They live in the central parts of Madrid, Spain. Jose Manuel runs a small carrier company together with two colleagues and Consuelo is a waitress in a hotel, as well as taking care of the home.*

The Aristrain-Fernandez family lives in a two bedroom flat with relatively traditional decoration. As for many other families in Madrid, the main problem is lack of space. Joaquin and Pablo share one bedroom where the computer, which is used by the whole family, is situated. Small sized TVs are attached to the wall/ceiling in both the kitchen, and the parent's bedroom. The living room is "the heart" of the home, and is where the family spend most of their time together, watching the shared TV.

On a typical weekday afternoon after school, Joaquin and Pablo spend a few hours in their room, doing

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homework, playing games and taking turns to use the computer. They keep their small TV switched on as a backdrop, but only watch it if something attracts their interest. For Joaquin and Pablo, instant messaging is a crucial way of staying in touch with friends, and they use it more frequently than their mobile phones. The brothers frequently quarrel about whose turn it is to use the computer. In order to avoid conflicts over instant messaging, they share the same instant messaging account. Jose Manuel or Consuelo occasionally come into their room to use the computer. The doors in the home are usually kept open because Jose Manuel wants them all to be together more as a family. Sharing the computer is becoming increasingly difficult though, especially as there is a growing interest in both parents to use the computer. (See figure 1.)

FIGURE 1



Joaquin and Pablo use the computer every day, although they spend more time using it during the relatively short winter. During the warmer months the brothers usually spend some time before dinner outdoors. They meet up with friends from the neighbourhood and “hang out”. Jose Manuel and Consuelo use mobile phones to keep track of the boys’ whereabouts.

Before dinner, Pablo and Joaquin often watch football or other sports on the living room TV together with their father. Meanwhile, Consuelo watches TV soaps in the kitchen while preparing dinner, sitting down occasionally to talk on the phone with her mother or a girlfriend. Dinner is served around 9 and throughout dinner the whole family watch family shows on the TV in the kitchen. There is only space for two chairs at the kitchen table, which means that the children have to eat at the worktop, standing up. After dinner the family continues to watch late night family TV shows in the living room until around 11 or 12. This time is referred to as “the family time” when they are all together and having fun as a group.

*“We put on the TV, and then we sit there for a while chatting, watching TV, or talking about what we’re watching.”* Consuelo, 47, Spain

On a practical level the Aristrain-Fernandez family is showing several signs of a growing need for more devices. Access to the computer is a factor which is likely to cause more conflicts in the future, as Pablo and Joaquin grow older and require more privacy. Jose Manuel and Consuelo have a positive and straightforward attitude to new technology and both think that broadband access has made life more efficient and fun. They are also a family that values togetherness and that thinks that being physically close together is something that defines a family. The boys use the computer every day and Consuelo watches the TV alone, although as yet, they haven’t experienced the challenges of individualisation. They still find time everyday to share experiences in the “centre of the home”, around the living room TV.

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They would like to have a second computer in order to avoid conflicts, as well as a flat screen TV (“just because it is new”), but their finances are limited.

*“There are two of them and they are fighting over it now. Now we are all fighting. Consuelo also wants to use it. Its like everything - you don't want it until you have it.”* Jose Manuel, 43, Spain

### Case 2: Losing control over technology

*The Eklund family consists of Eva 42, Mats, 53 and their children Sara, 13 and Magnus, 15. They live in Hammarby Sjöstad, Stockholm, Sweden. Eva is a schoolteacher and Mats a taxi driver with his own business.*

The Eklund family has recently moved to a newly built flat in the city centre. The move meant that they could plan the interior of the flat in relation to their needs. It was also a good opportunity to update their general technological standards. The flat is open plan, with spacious living areas and modern furniture. It also displays several giveaway signs that the Eklunds are a family who are into technological gadgets. There are two flat screen TVs, a PC in each of the teenager's rooms (one of these a laptop), a family computer, an X-box, a Playstation, as well as three 3G-phones in the family. The vision for the new flat was for everything to be “out of the way” and to keep surfaces clean. Consequently, technological devices are not permitted to take up too much space. For example, the family has a landline phone, the look of which did not match the interior of the flat, which means that it has been deported to the wardrobe.

On a normal weekday, Sara and Magnus spend most of their time in their own rooms, behind closed doors. The family eats dinner together every day with the TV on in the background. Aside from dinner, there is almost nothing that will steer Magnus away from his computer and his games, or Sara from her phone and instant messaging. After dinner the teenagers return to their rooms, while Mats sits down to watch TV. Eva half joins him, keeping one eye on the TV,

but focusing mainly on phone calls with friends and family, domestic chores or using the computer.

FIGURE 2



The main devices used by Magnus are in his own room: his laptop and his mobile phone. When the family first moved to the new flat Magnus was asked if he wanted a flat-screen TV for his room, but as he doesn't watch TV anymore, he declined the offer. Instead, Magnus spends most of his time playing on-line games over the Internet. He sometimes talks to his fellow gaming friends via a headset unit while playing. The mobile phone is only used when he can't reach his friends via the game, instant messaging or Play-Ahead, which is a community for teenagers. Magnus agrees that he spends too much time using the computer, but doesn't know what he would do with his time otherwise. He very rarely spends time outdoors during weekdays and at weekends he usually gets together with a group of friends who connect their computers to each other and

play online as a team. These sessions normally last up to 30 hours, with only short breaks, and are so absorbing that Magnus normally stays up all night and skips sleeping between Saturday and Sunday.

*“I was a different person before. I didn’t spend as much time playing games and didn’t use the computer as much. I was out and about more and met people more.”* Magnus, 15, Sweden

Sara spends her evenings exchanging messages, images and music files via MSN and Play-Ahead. Among her friends she is known as someone who is good at finding music and files for others – and someone who gladly shares these files through instant messaging. She is an avid multitasker and as soon as the phone line is not busy, she uses it to call her friends (because it is cheaper than the mobile). She can spend endless hours on the phone, at the same time as using the computer. She keeps her TV – which is right next to the computer – switched on, giving her a good overview of what’s going on. She rarely has friends over to the flat, and when she does they tend to spend time in her room, taking turns between using the computer and watching the TV.

The Eklunds only occasionally watch TV as a family, usually to watch a prime time comedy show at the weekend. For Magnus, this is way of “taking a break from the computer” which usually results in him falling asleep on the sofa. Still, for Eva and Mats the few hours spent together as a family are valuable, although finding something that all the family members will enjoy watching is becoming increasingly difficult.

In the Eklund family, individualized behaviour has become manifest. Even if the family members are physically present at home, they are most often mentally elsewhere. There are no restrictions regarding use of computer, phone or TV. Eva and Mats think that they ideally ought to do more things together as a family, although they also think that the development of technology is unavoidable. They can also see advantages to the children being at home

rather than out on the streets so that one knows their whereabouts. Magnus and Sara have extensive social lives online, although the balance between too much and too little usage of communications technology is becoming increasingly difficult to achieve. Both of them occasionally find it difficult to maintain the intricate social structures that they have created for themselves using computers and phones.

### **Case 3: Reclaiming control over technology**

*The Palermo family consists of Glenn, 52, Sharon, 48, their two children, Rick 15 and Jenny, 13, and Glenn’s father. They live close to the sea in Redondo Beach, Los Angeles, USA. Glenn runs his own product development and graphic design business and Sharon works as an administrator at a junior-level school.*

The Palermo family lives in a detached house that has two floors and four bedrooms. There are several computers in the house, due partly to the fact that Glenn uses them for work. Both Glenn and the children have their own laptops and Sharon sometimes brings hers home from work.

In their spare time, Glenn and Sharon enjoy spending time outdoors, going for bike rides or walking down to the nearby beach. Since Rick and Jenny have become teenagers, it is becoming increasingly difficult to involve them in such activities. There is a strong desire to do things as a family, but on a typical weekday all of the family members are involved in different activities.

Jenny, who recently turned thirteen, is going through a stage of conflict with her father. Glenn thinks that Jenny is too lazy and caught up in her own world, which he wants to know more about. Jenny usually spends the afternoon after school by herself watching TV or playing Playstation in the living room. She enjoys having a sofa to relax on and being close to the adjoining kitchen in case she feels like eating. If she can’t be the one in charge of the remote control, Jenny goes to watch TV in her own room instead. She uses the landline phone a lot to talk to her boyfriend and to friends from school. In the past she

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has been rather excessive in her mobile phone use and as a result of this, Glenn has cut down on the amount of minutes she is allowed to use per month. In addition, Glenn no longer allows her to use text messaging. At dinnertime, Glenn and Sharon insist that the family sit down together to eat dinner without any TV or other distractions. Jenny would prefer to have the TV on while eating (as the family doesn't actually have anything to talk about), but Glenn has become very strict about the no TV policy since the amount of time that the family spends together has started decreasing. After dinner, Jenny usually goes out to meet her boyfriend or other friends. In the evening she uses My Space and IM on her computer to stay in touch with friends. In order to fall asleep she keeps the TV on in her room so that she can let go of her thoughts in relation to the coming day.

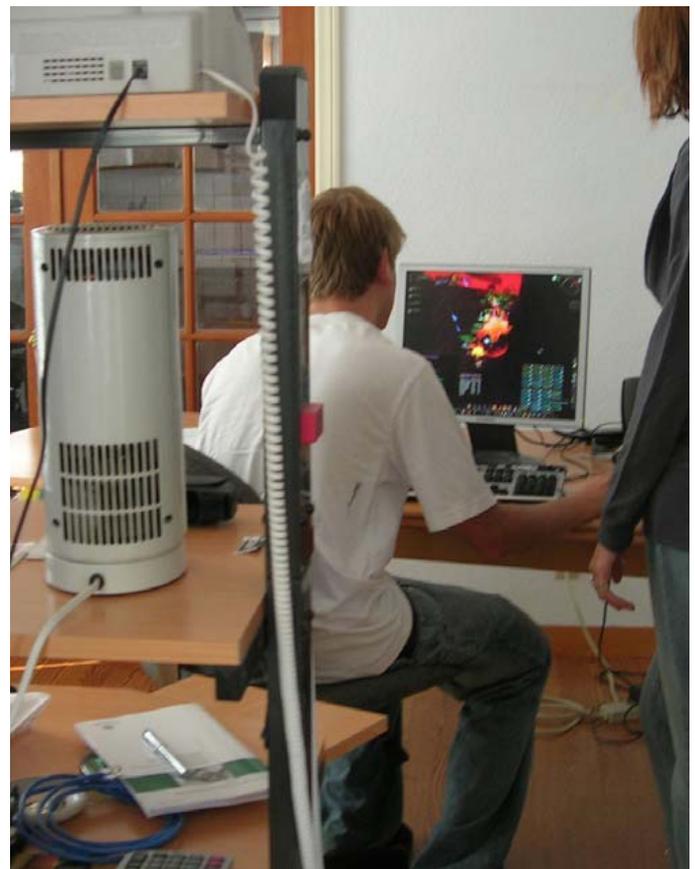
Even though Rick attends school and has a part time job, he manages to spend around six hours a day playing World of Warcraft. He says that he is addicted to the game and that it takes up most of his concentration even when he is not playing. It has taken Rick several years to achieve the status that he has in the game today, and staying away from the game even for a short while would be enough to lose this status. There is usually a joint gaming schedule set up by the gamers themselves, which runs throughout the evening. Rick therefore finds it difficult to tear himself away from the game (and potentially let down his team) when it is time to have dinner with the others.

*"He's in great shape, but you still don't need to sit in front of the screen all that time. It can't be good for you... It's a bit extreme".* Sharon, 48, USA

Finding a healthy balance between individual needs and family life has been a tough nut to crack for the Palermo family. Glenn has a natural interest in technology, and in recent years he has started spending more time using the computer in the evening, instead of watching TV. Sharon spends a few hours every night in the master bedroom,

watching TV soaps or the country music channel. The fact that Glenn and Sharon spend a great deal of time indulging in their own interests/needs makes it especially difficult to restrict their children's use of TV, computers and phones. (See figure 3.)

FIGURE 3



The fragmentation of the family has been a hot topic in the Palermo family, particularly for Glenn who has a more social vision of how a family should be and how its members should interact with one another. In an attempt to bring Rick "back to the family", the stationary computer, which he uses for gaming, has been moved from his own room to an office-like room (originally intended as a dining-room) situated in the middle of the house. Glenn has moved his own desk into the same room, giving him a sense of "being together with his son", although both of them are, in actual fact, mentally absorbed by their own worlds. The new location of Rick's gaming computer also allows his parents to supervise what he is

actually doing while on-line and to make sure that he is not losing sleep in favour of gaming.

#### **Case 4: Living wired**

*The Wilson family consists of David, 39 and Tish, 39, along with their two children, Craig, 17, and Timothy, 13. They live in the wired community of Ladera Ranch in California, US. David runs his own insurance business from home and Tish is his office manager. Both of the children attend on-line school and spend all of their time at home.*

The Wilson family lives in a townhouse on three floors with three bedrooms. David is interested in technologies and prone to buying the latest gadgets. There are several different computers in the house and a wireless Internet connection. The reason that the family moved to the area in the first place was due partly to the fact that Ladera Ranch is a technologically advanced community. Apart from broadband being readily available in every home, the area is self-sufficient, with a number of shared services, including a high technology library, which is only accessible using the swipe card carried by all of the residents in the area.

Most of the Wilson family's time outside of the home is related to church activities. They visit their church several times each week to attend mass, or to listen to and perform worship music. The fact that the family spends most of their time at home means that they see a lot of each other, despite using private computers and TVs. The whole family occasionally enjoys a TV show together, usually one that is related to their common interest in music, such as "Rockstar". Shared media experiences are often spontaneous, and the family can all end up watching the same programme together simply by passing through the room where the TV is on.

In the Wilson family there are no specific time schedules to take into consideration. Craig and Timothy can decide for themselves when they want to get up and if they want to sleep in. On-line schooling usually requires around two hours of active work

per day. At the beginning of the week, assignments are sent out to the boys by email with a deadline for completion by Friday. While studying, the boys usually keep their doors closed and switch between school-related matters and private matters, such as music web pages, sports or gaming. David and Tish meanwhile, are working in the combined bedroom and office upstairs. The whole family is connected via IM during the daytime and the two brothers sometimes send each other messages with the sole purpose of disturbing one another's concentration.

The fact that many of Craig and Timothy's friends from church also attend online school means that that a large portion of their communication takes place via the computer during the day when they are all connected. The importance of having a mobile phone is relatively small, especially for Timothy, as both family and friends are usually only a few seconds away. Craig, however, uses his mobile phone more often since he received his driver's license and is out and about more. Timothy, who spends more time indoors, enjoys gaming via his new X-Box. The latest version of the console allows him to connect to other players and chat to them through his headset. Most of the people he communicates with are friends from church, or people that he has known for some time. Some conversations which would normally take place via instant messaging can therefore take place through the TV instead.

There are very few specific rules or structures that determine how the day will evolve: the family members tend to drift in and out of different activities throughout the day. Having the children at home is something that both David and Tish think is the best solution. They think that the children are more protected and the family also has better opportunities to be involved in each other's daily lives. They can also allow themselves to be more spontaneous and do things at short notice. David tries to make a habit of doing something outdoors with the boys at least once a day, for example playing tennis or going surfing at the beach.

FIGURE 4



For Craig and Timothy, staying focused is the most difficult part of on-line schooling. Craig is often tempted to pick up his guitar and play for a while instead of studying. Timothy takes frequent breaks to watch TV with his mother. The downside of the blurred lines between spare-time and school/working hours is that it becomes difficult to actually enjoy the spare time and to put the assignments of the week to one side.

*"if I start playing the X-box when my schoolwork is not done, I'll get unfocused - and it's hard to get refocused again."* Timothy, 13, USA

An interesting aspect of the Wilson family's lifestyle is that being constantly on-line has not disrupted them as a family. Instead, they are tightly knitted together through shared experiences in church and the fact that they share the same physical space for almost all of their waking hours. Dinner is sometimes eaten in front of the TV, and computers are almost

always switched on. Use of TV and Internet are not perceived as threats to the family as such, and can therefore occur anywhere, or at any time of day.

### DEFINING THE IMPACT OF TECHNOLOGY

Inspired by the work of "Living space" by Venkatesh et al, 2003 and Venkatesh and Mazumdar, 1999, the home environment can be studied from three angles: the physical, the technological, and the socio-cultural. The physical dimension refers to the physical layout of the home and its parts (kitchen, bedrooms, living room, etc.) The technological dimension refers to household technologies and how they are used by those who are part of the social space. The socio-cultural dimension consists of the members of the household, the activities they engage in at home, the interaction between them and the cultural contexts which define their interaction.

#### The physical dimension

The physical dimension defines the prerequisite technologies that are used and the interaction that occurs within the household. There are obvious differences related to the size of the homes. Sharing rooms makes the individualisation process less smooth since there are fewer opportunities for privacy. In smaller and older homes there is a tendency to use the designated living room area for the TV. In more modern homes there is a desire to hide technology and not allow it to overly influence the rest of the interior.

A consequence of the individualization of technology is the increased introduction of private and semi-private areas. There are many examples of how the family splits into teams when using technology. Some families have two sets of TV, DVD and TiVo. Others have a special room or space designated for the playing of X-Box or Playstation. The semi-private area serves an important function in that it brings the family closer to each other physically (if not mentally). In some cases it is an area in the middle of a larger room where it is possible to see the children even if they are mentally elsewhere.

An important landmark which largely undermines the impact of the physical dimension is the introduction of wireless technologies. A wireless Internet connection blurs the boundaries between areas that are private and those that are shared. Wireless technologies also encourage individual usage, allowing teenagers to talk in private, by shielding a screen from others for example, or listening to iTunes tracks in bed while falling asleep. It also allows the usage of Internet to become more spontaneous.

*“Sometimes we’re having dinner and we remember something, a message we received or perhaps something we saw on a webpage earlier. So as we’re eating, I move my plate a little to the side and bring out the computer.”* Alicia, 42, Spain

### **The technological dimension**

The changes in the importance and usage of different parts of the home are obvious when comparing families with a basic level of technology with families using more advanced technology. As more devices are brought into the home, the importance of different rooms is transformed. For example, we can clearly see that the living room is losing its former importance, following the increased penetration of TV sets, and in particular following the introduction of broadband. The teenagers are the first family members to start spending most of their time in their own rooms, closing doors in order to protect themselves from someone walking in while private media and communication usage is taking place via Internet, mobile or landline phone. Some teenagers cover up their computer screens when they have to leave the room, just to make sure that no one intrudes upon their privacy.

Some of the families have certain rooms or parts of their home which are designated to be technology-free. It is interesting to note that these areas tend to be the least used in the home. The position of TVs or, perhaps more importantly, computers, usually mark the central points of the home environment.

### **The socio-cultural dimension**

The families that participated in our studies can be roughly categorized in terms of the socio-cultural aspects of their home environments. The following themes illustrate a selection of examples of the differences noted between families visited during this study – differences which affect the role played by technical devices in everyday life.

#### *Sharing with the family*

In the Spanish families which were visited, there is a recurrent theme of sharing with the family and being together rather than demanding privacy. The parents are involved in the everyday lives of their teenagers, along with the choices that they make in life. These families live in homes which are relatively small and where lack of space is a common problem. Due to this limited space, teenagers sometimes share rooms and also technological devices. This alone allows fewer opportunities for the teenagers to have privacy. Furthermore, the children’s desire to spend time on their own is not actively encouraged by the parents. The parents want to remain involved and up to date, and have access to the different parts of their children’s lives.

There is a tendency for the living room to be the central point of the home, or more specifically, the TV. In some of the families the furniture has been built into the wall with a designated space for the TV, making it the natural centre of attention. The living room is used by the whole family on a daily basis: even if the teenagers have other agendas and priorities, there is still a desire to share experiences in front of the TV, typically after a late dinner when the whole family is at home and family targeted programmes are shown on TV.

#### *Family-oriented individualisation*

In the US families which took part in our study, the teenagers enjoy considerable freedom as regards their usage of technology. Family members have their own rooms, plus their own TV or computer, if not both. The fact that there are several TVs in

each home, as well as a vast selection of channels, makes TV a medium that is largely individualised. This even includes parents, who often watch TV in their own bedrooms. These factors are examples of how technological aspects within the home can affect social interaction within the family.

In spite of this individualised usage, parents are very involved in their children's lives and feel concerned about safety issues related to the use of technology. There are many worries about the potential dangers of the Internet, for instance in relation to IM, My Space, and to how children can be protected from harmful media content. Families tend to get involved in many activities outside the home, serving to unite the family members. Ways of "connecting" and "regrouping" involve outdoor excursions, sports, community work or church activities.

#### *Individualised teenagers*

In the Swedish families which were studied, technology has been introduced on a broader scale. Every family member has a computer and a TV in their own room (apart from those who have simply stopped watching TV, in favour of using their computer instead).

The teenagers tend to keep their doors closed to make sure that their parents don't walk in and interrupt them while they are communicating, playing games or consuming media. Computers are considered to be strictly private (rather like diaries), a factor which, to a large extent, is respected by the parents. The teenagers have considerable freedom to explore their own possibilities by themselves, and parents often have a limited knowledge in relation to their private activities. It is understood and accepted that they will find their own ways of dealing with the ups and downs of technology, provided that it doesn't affect their ability to fulfil their everyday obligations, such as school or work.

## THE DOUBLE-EDGED SWORD OF TECHNOLOGY

In the case studies presented earlier, and the discussion about what defines the impact of technology on the family, we are able to see that technology works in different ways depending on the context in which it is used. It can take on the guise of both a friend and an enemy of the family. As the process of individualisation gains its grasp, the family reacts in different ways:

### **1. Technology uniting the family**

Technologies such as TV and computers are perceived as devices for the whole family, enabling them to share and enjoy entertainment together. Devices are placed in communal spaces such as the living room for the TV, and the hallway or home office for the computer. The mobile phone makes communications within families more frequent and daily life more efficient.

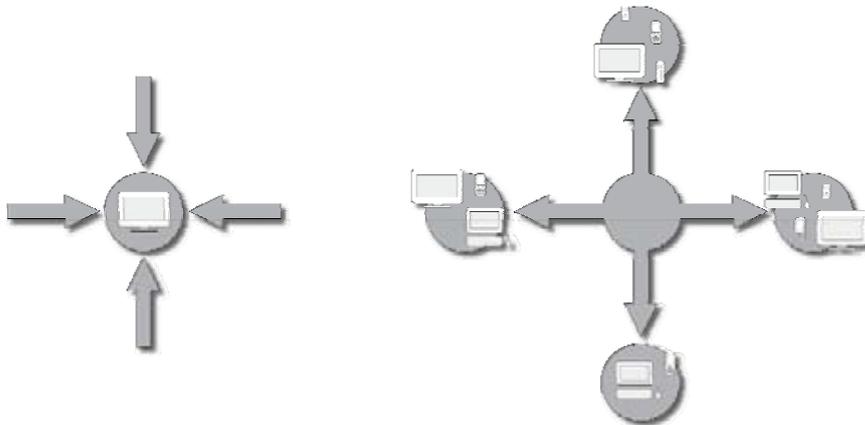
### **2. Technology disrupting the family**

Broadband access has dramatically changed the importance of the computer, turning it into a coveted device that everyone wants to use. The battle for the screen emerges, driving the need for more devices and leading consequently to the introduction of more individualised usage. The increasingly wide selection of TV channels and flexibility in terms of when and where to watch has created a need for more TVs. The usage of these devices and services is becoming highly individualised and time-consuming, thus limiting the time that the family spends together. (See figure 5.)

### **3. Development of counter-strategies**

The natural ambition among parents is to keep the family together at all times. In this way, the very concept of being a parent collides with the reality of a household where children want to live their own lives. The conflicting aspects of this development of individualisation create an imbalanced mental structure. Some of the different ways of dealing with this imbalance are:

FIGURE 5  
THE TWO EXTREMES



The figure to the left shows how technology unites the family, rather like “the modern fireplace”. In the figure to the right technologies have been individualised and family members isolated from each other.

*Casting off responsibility.* In some families there is a tendency to let the teenagers set their own limits. Teenagers are perceived as being part of a world that is fundamentally different from the one in which the parents themselves grew up. This alone makes the parents consider themselves unable to define where the limits for the children’s use of technology should be drawn.

*Defining limits of time and space.* In some of the families, the children have previously had unlimited access to technologies, but extensive usage has come to the point where it has put a strain on family life. Controls have therefore been reinforced through the setting of rules defining when, where and how technologies can be used. This can be done by changing the physical environment in which usage takes place; for example, only allowing the children to use the computer in a semi-private area where parents are able to see what they are doing. Some parents also track what their children have been up to on the Internet, block certain content or even create a profile in one of the children’s online communities, to check up on what they are involved in online.

*Using technology to reconnect the family.* In all of the families visited, there is a strong desire to do things together as a family more often, although due to busy schedules and differing interests it is becoming increasingly difficult to do this. In this context the TV, which has often been perceived as passive and antisocial, can play a crucial role in uniting the family for a short moment in a scattered and fleeting reality. A strong theme here is that both teenagers and parents often find themselves watching programmes which don’t actually interest them. They watch the TV for a totally different reason – as a way of spending time with someone else. In the more individualised families, TV shows that are able to unite the whole group are more appreciated for their social implications rather than for their content.

## IMPLICATIONS FOR TEENAGERS IN THE HOME ENVIRONMENT

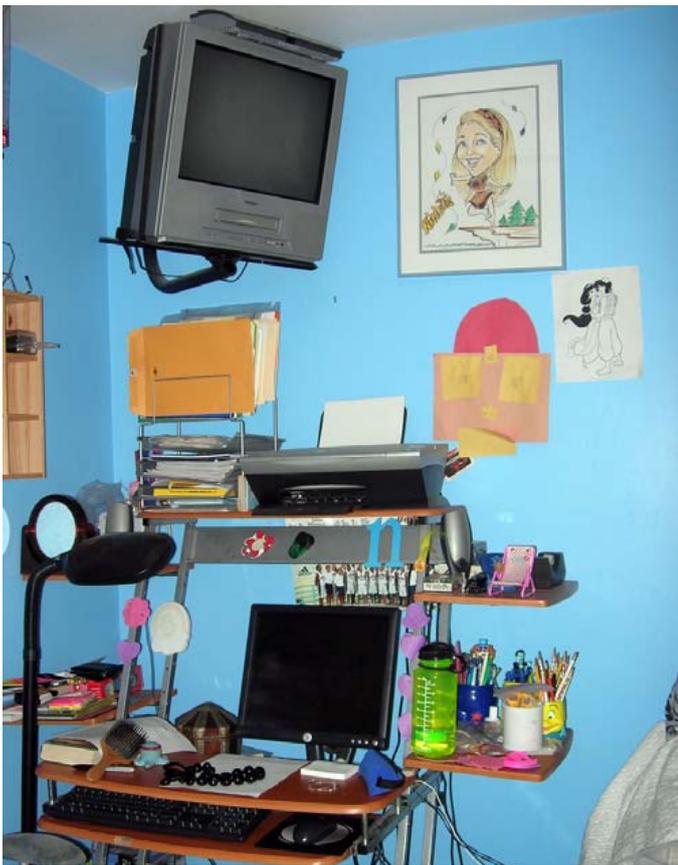
### Towards individualized behaviour

The transformation of communication and media devices, from being shared with others to becoming essentially personal, is a major shift. Teenagers of today have access to the whole world at their

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fingertips. This brings enormous possibilities but also great uncertainty. Friends and media elements are gradually starting to play a much bigger role in the lives of young people compared with the role played by the family. (See figure 6.)

FIGURE 6



Teenagers who have wide access to technologies have their own mobile phones, computers and TVs, which take up a considerable amount of their time at home. These teenagers are the ones who most clearly express the complexity of finding the right balance between the multitudes of options that technology brings. Some interesting themes in the study of these teenagers are:

*Never enough, always too much*

There are conflicting drivers surrounding technology that cause mixed emotions among teenagers. On the one hand there is a longing to be able to focus properly on one thing and not have to take

responsibility for the overwhelming amount of communications that are constantly taking place. On the other hand there is restlessness and a fear of not keeping on top of things socially. Essentially, the choice is between being logged on or logged off – and both alternatives are equally frightening.

Teenagers with individual access to computers have grown to depend on Instant Messaging as a natural part of their everyday lives. However, there are drawbacks: it is time-consuming and easy to lose track of time and concentration when every message requires a reply and when there are several conversations taking place at the same time. Instant messaging is not necessarily considered to be fun or rewarding all the time. Instead, teenagers feel obliged to stay online in order to be part of the social context which defines their identity. They also have to make sure they are available should something fun or unexpected occur. In short: they have to keep their window on the world open. There is a clear desire for control: the ability to control the “level of presence” when online, for example, is a crucial feature when evaluating new communication technologies.

*Filling in the gaps in life*

An important driver for the extensive use of media and technology is the desire to steer clear of silence and to “fill in the gaps in life”. A common habit, for example, is to keep the TV, music or computer switched on when falling asleep, as well as all through the night. This is largely a distraction used to stay clear of thoughts which can create anxiety. Frequently mentioned sources of anxiety include worries about upcoming tests at school or wider thoughts about life in general and “how it all will turn out”. Making choices about life represents a recurrent theme that causes teenagers to worry or go astray in their thoughts. On a broader level, society is also changing rapidly, not only from a technological point of view. The number of choices people have to make about life is increasing and the effects of these choices are becoming more and more difficult to predict.

*"It (the MP3-player) just calms me down at night, gets everything out of my head that I learned today from school and stuff. If I have a lot of things in my head, I can barely ever get to sleep. It's just like homework and tests, like I think I've failed a test and stuff, so I just keep it out of my head this way until the next day."*

Bobby, 15, USA

### **Attachment to functions, rather than devices**

Compared to their parents, teenagers are more inclined to re-evaluate their mind-set in relation to devices as new features are added to them and functionality is changed. All in all, there is an unsentimental attitude towards devices and what they previously represented. For instance, some teenagers have almost given up on watching TV altogether, and have cut down on their usage of the mobile phone considerably. Instead, they find that the computer is more optimised for a number of tasks, including watching TV programmes and communicating with friends.

*"I watch Asian daytime soaps on my computer from the moment I come home to when I go to bed. It's the same everyday. Every soap is about 16 episodes long and when one comes to an end I download a new one... Paradise Hotel is the only thing I ever watch on TV. I have the alarm set on my mobile twice a week"*

Helen, 19, Sweden

### **Multitasking**

Individualisation of devices enables teenagers to do several things at the same time without having to make allowances for other people in a physical space. A recurrent theme is the increased number of tasks that the teenagers are simultaneously involved in when using communication and media devices. An important driver for multitasking is the general expectation to be effective and to make the most of time available. Through the increased penetration of technology and the growing amount of media content multi tasking and individualization are becoming more evident. Shortage of time creates a need to be able to take care of several obligations simultaneously, such

as shopping, keeping up-to-date on news, and staying in touch with friends. Multitasking can also make social relationships more efficient in that it becomes possible to nurture several social relationships and roles at the same time.

*"Why do you feel the need to talk on the phone and use the computer at the same time?"*

*- Well, because then I can talk to more than one friend at a time".* Anna, 16, USA

*"I might lie in bed and talk to a friend on the phone and watch TV at the same time. Both of us are watching TV and laughing at the same time".* Leylah, 17, Sweden

From a teenage perspective, multitasking is in many ways the normal way of doing things. Some teenagers describe it as a way of maximizing the chances of coming across something fun or out of the ordinary. Spending time in front of the TV or instant messaging could potentially be rather boring activities, although combining the two makes it easier to maintain the intensity. Teenagers are, in a manner of speaking, fishing in several ponds, sticking around for something worthwhile to occur.

*"The computer gets boring after a while, and it is just more entertaining to do three things at once. Usually, on IM, you talk about like practically the same things that you talked about the other day, but if something new comes up, you could talk about that."* Cody, 16, USA

Teenagers and parents both describe how multitasking makes it easier to "overshadow" and get through activities which are less interesting or involving. It is possible to go from being in a bored/passive mind-set (for instance tidying up) to an engaged mind-set (for instance listening to music). Multitasking is a strategy which makes it possible to get through mundane chores seemingly faster, by engaging in an interesting task which serves to overpower the more tedious one.

### The family losing authoritative power

External networks outside the home and the family are extremely important to teenagers. The teenagers in our studies estimate that around 75% - 85% of their communication which takes place within the home involves people from outside the home. Even though children are at home in the physical sense, they are mentally focused on something else. Outside contacts become more important in satisfying social needs and in defining teenagers' identities. In the past, teenagers would run the risk of ending up "in bad company", whereas today they are being shaped by an online world that is formless, constantly changing, and impossible for parents to gain real access to. Broadly speaking, this development means that the family as an institution is losing some of its former authority.

On a slightly different level, we can also see major changes as regards power and knowledge in relation to technology. When teenagers know more about technology than their parents, they gain a new type of power over them. While the parents may have the economic power, the power-user is more likely to be one of the teenagers. Teenagers are now often consulted as experts regarding matters of purchasing and operating new technology for the household.

*"He (the son) would make a very good computer technician for his age. Even his brother asks him things. "What do I do to watch the films I downloaded on DVD?" He is the one who looks after all that stuff."*  
Alejandro, 43, Spain

### FUTURE CHALLENGES

#### Understanding the complexity of the family unit

The research described in this paper provides a clear example of how technologies have to be studied in the light of their social and cultural context. The family is a complex institution and a bundle of contradictory needs and ideals. There are constant changes in power and struggles between individual and collective desires. All of these factors can have crucial implications for how different devices are perceived and used.

Teenagers are the ones who are pushing the process of technological densification forward. As more devices are brought into the home, the process of individualisation accelerates. Parents develop different strategies to deal with the fact that the family is struggling to stay together and that technologies are threatening to tear it apart. As described previously, there are different ways of dealing with this development. Families can go through stages of casting off responsibility or using technologies to encourage teenagers to spend time with other family members. The last stage in this development may be a kind of "new order" whereby the family has taken a form of control over the development. Families have defined limits for the usage of devices, and this is enforced by rules, regulations and restrictions of how, where and when private technology is used.

#### Acknowledging the need for shared experience

In order for telecom products and services to have real value in everyday family life, they must be developed not only from the point of view of the individual, but also with regard to the family's shared interests. The picture painted in this paper is largely one of families losing their grip on teenagers, and everyday life becoming more individualized. Coming up with ideas for everyday activities that can steer teenagers away from using the computer is an increasingly demanding task for parents.

The development towards individualized behaviour is creating a growing need for common points of reference. This need is probably essential in understanding the almost ritual-like habits related to watching family shows such as *American Idol* or European versions of the same programme. For teenagers, file-sharing is an important element of communication. Sharing music or images while communicating through instant messaging adds an extra dimension to a conversation and intensifies the bonds between friends. There is a strong interest in being able to share files not only with people outside the family, but also with fellow family members. In the case studies, there are several examples of

how technologies which are currently in use are not optimised to share experiences with other family members. Looking at family pictures via the computer screen can be quite an ordeal as it is difficult and awkward to gather people around the screen. There is a strong desire to use the bigger screen of the shared TV for watching film clips or images; most of the families, however, haven't yet figured out how to do this. Traditional stereo equipment has been thrown out – deserted – without having been replaced by shared devices for listening to MP3s. These are just some examples of how technologies are becoming more optimised for individual rather than collective use. Technologies designed to help create “shared worlds of content” could potentially satisfy needs which are elementary for the family.

### **Balancing convergence with control**

Convergence of technologies promises to be an exciting development when discussed in broad terms. However, when analysing the implications of this development in more detail, it is much more complex than that. Particularly teenagers already feel overwhelmed and even hounded by the amount of communication that they feel they must take part in, the majority of which is relatively unfulfilling.

Teenagers create their own worlds where they can use computers, mobile phones and the TV simultaneously. Some prefer to have the TV on a screen in the background, listening to the sound, while the main concentration lies in the communications, which are taking place on the computer screen. The primary interest is to be in control and to have an overview and structure, regardless of which device is being used.

Having access to communication anywhere and anytime within the home environment is not necessarily a valuable scenario. For teenagers, communication is of a primarily private nature and is less suited to shared screens which are in full view of other family members. An important lesson being learned is that increasing overall accessibility

to communication is of no real benefit to teenagers who are already online as much as they possibly can be. The real challenge lies in providing better opportunities to control and enrich the interaction which is already taking place.

As described in this paper, communication technology is not always what it appears to be. At first, it seems attractive and exciting, but as soon as it enters the home, it shows a different side. Much like the Trojan horse, it brings unexpected consequences that the family is not prepared for. It opens up what was once referred to as “the safe haven” to all of the windows of the world and it steers focus away from the home environment.

The increasing need for control is shared by teenagers and parents alike. Even if the family can reinforce control in a variety of ways, there are technical solutions which could alleviate the quest for a sound balance between the different social spheres of life. Relatively simple concepts, such as being able to screen contacts or choose the level of availability for communication (as with instant messaging) are examples of functions which can be developed even further towards placing consumers where they really want to be: In control of technology.

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