

CHANGING THE WAY WE LOOK AT TELEVISION.



ERICSSON 
TAKING YOU FORWARD



TV as we know it is changing – we’re about to see the end of passive one-way broadcasts.

Now that doesn’t mean that all the channels and shows we watch will change overnight. Or that living room couches still won’t be our favorite place to watch TV. But it does mean that the things we’ll be able to do with TV, and the opportunities involved, are about to rapidly multiply.

As TV moves towards interactivity, and it can be watched anywhere – on all types and sizes of screens, we’ll witness the birth of an entirely new mass market for TV programming, advertising, interactive games and other services.

The possibilities for the industry are enormous. But so are the challenges, as the future of TV allows for a multitude of new actors and business models. And no matter if it’s subscriptions, transactions, pay-per-view or advertising; interactivity will add value for content

owners, service providers, advertisers and operators – not to mention consumers. At the same time, the use of fixed and mobile broadband networks to communicate with a host of different devices will almost certainly drive economies of scale and increase competition. Provided of course, that the infrastructure carrying TV is the same that delivers other digital content or communication. This kind of convergence, driven by the consumer, is the foundation that will turn the next generation of TV into a real, mass-market product.

At Ericsson, we’re excitedly enabling all this. And that’s because we know that we’re in position to be a prime mover and integrator, helping our customers and partners thrive in the change we’re all about to experience.

We’re looking forward to talking with you.

*Johan Bergendahl
Vice President & CMO
Ericsson AB*

Television will never be the same. Ever.



Just imagine that you're watching your favorite football team, the score's even and there's only 5 minutes left. The thing is, you're already late for a train that you absolutely have to catch. Now imagine that you, with just a click on the remote, can move the game from your TV to your mobile phone and keep watching while you're on the move.

Or imagine that you spend 20 minutes on the train every morning and evening. And that you can use that time to catch-up on the latest episode of your favorite TV show.

Or just imagine....



The end of TV as we know it.

For over 50 years, broadcast TV has more or less worked the same way. That is, as a one-way channel of content distribution where people watch TV according to pre-defined schedules. This program, at that time – take it or leave it. Besides the introduction of color, and a remote control that left us sitting on the couch, TV evolved slowly until the VCR (Video Cassette Recorder) came along.

Recording programs freed people from the tyranny of schedules – it allowed us to watch TV when we wanted to. And then more advanced recorders, like TiVo, made this even easier while it also made it possible to skip the advertising. Or we could always go down to the local video store and pick up a VHS or a DVD.

And that's pretty much where we stand today. Except for the fact that cable and satellite have increased

our choices – while making it almost impossible to navigate among a seemingly infinite number of channels. It's easy to understand why TV Guide is the USA's largest selling weekly magazine with more than 20 million readers.

But as TV moves from one-way distribution towards digital two-way networks, the way TV is produced, distributed and consumed will change forever. With the addition of a return channel, the TV experience will become more interactive and personal. It'll move from passive to interactive. And it'll turn consumers into producers.

The next step will be all about making engaging content, and its possibilities, available to people even when they're not in their living room. And with Mobile TV, we'll finally be able to take this wonderful, new world of TV with us wherever we go.

Driving the new TV experience.

There are three driving forces behind today's television evolution.

- The fact that consumers are getting used to personalizing, controlling and interacting with content, services and brands.
- The availability of high-capacity, two-way fixed or mobile broadband connections.
- The fact that content increasingly comes in a digital format, making it easy to store and distribute over both fixed and mobile Internet Protocol (IP) networks.

A NEW CONSUMER BEHAVIOR

As Internet becomes a way of life, and we can get what we want when we want it, we'll start to expect the same thing from TV. And television programs will just become another broadband application – something you can consume in a number of places and on a variety of devices. Internet will become a gigantic juke box where you can easily find old episodes of TV shows from your

youth, the World Cup soccer final of 1992 and your own home videos from years ago.

THE DIGITALIZATION OF CONTENT

The fact that most content is produced or made available in standardized, digital formats makes it easy to store and share. And an increasing number of low-cost, networked digital devices such as cameras, video editing tools and media players are making production and publishing available to just about anyone. The success of video community websites like YouTube is living proof of the fact that people not only have the possibility, but the desire to be content producers.

BROADBAND PENETRATION

In the third quarter of 2006, worldwide fixed broadband lines reached a total of 264 million and predictions say that this number will increase to well over 500 million in the next couple of years. Add to this the 100 million mobile 3G users and it's easy to see the oncoming mass market.

WHILE TONY'S WAITING FOR HIS WIFE, HE'S WATCHING A SPORTS NEWS PODCAST.

TONY CHOOSES TO WATCH THE HIGHLIGHTS OF THE TOURNAMENT.

TONY'S WIFE CAROLINE ARRIVES AND STARTS FILMING WITH HER MOBILE PHONE.

Hundreds of miles away and still in touch with the important stuff in life

Yes, yes , yes!

This is nice

CAROLINE SEES SOMETHING WORTH SHARING WITH OTHERS.

SHE UPLOADS THE FILM ON A VIDEO COMMUNITY WEBSITE FOR ANYBODY TO SEE.

THEIR KIDS AT HOME CAN WATCH THE FILM ON THE VIDEO COMMUNITY WEBSITE.

Everybody needs a good laugh

Smile honey!

Wow, what an awesome header!

Interactivity and choice.

Interactivity through fixed and mobile two-way networks will make it possible for viewers to actively participate in TV programs. As we begin to control and interact with TV, and respond through a return-channel, TV will make us lean forward and move from a passive to active mode.

We'll be watching shows where we can vote for the best performance, send and receive personal messages, get help on a complicated quiz, dynamically select viewing angles from a series of available cameras and much, much more. Audiences will even be able to use webcams or the cameras on their mobile phones to participate in TV programs – and use their mobiles as remote controls, watch two or more programs at the same time and buy the products they're looking at on-line.

At the same time, personalization will enable us to customize TV and Video-on-Demand packages according to our individual preferences. And personalized user interfaces will have customized channel selections, much in the same way as bookmarks work in a web browser. A recommendation engine can offer a tailored programming schedule based on our on-demand consumption history while content can be provided by region – right down to very specific areas.

Among large groups of users, media is still regarded as something to be consumed in the living room. But for younger generations, media is something you use to communicate with others and that you consume in a multitude of ways.

Sometimes it's active and engaging and other times it's passive and in the background of other media – for instance while they're doing something completely different. Sometimes they're alone with their mobile



TO ACTIVE!



phone and sometimes they're together with other people at home or in public places.

The big difference between generations is not what content users are watching, but rather how and why they watch. While youths start using a service because they're curious or think it's cool, adults will be driven by rational reasons. And as for getting started, we'll witness how the younger generation will be the older generation's teacher.

WE'VE IDENTIFIED THREE TYPES OF TV VIEWING

1. Focused viewing is when you don't want to be disturbed, for example during a film. You're not particularly active, but still engaged with the content.
2. Active viewing is when you interact to influence

what's happening in the program, such as by voting or virtual participation.

3. The TV as background noise is when the TV is on and you're doing other things.

Personalization, on-demand TV and time-shifting are interesting for all generations – as long as they're easily available. We've seen how recommendations from others are becoming more and more important for users to decide what to watch in the increasingly abundant media landscape. Another trend is the increase of "place-shifting" – allowing people to watch their preferred content wherever they are and depending on what screen they have available: a TV, PC or mobile phone.

A close-up photograph of a woman with dark hair, smiling and looking towards the left. She is holding a white flip phone in her right hand, which is raised towards the top left of the frame. The background is a clear, bright blue sky. The text 'From viewer' is overlaid in white on the right side of the image.

From viewer

Not that long ago, most video entertainment was produced and distributed by Hollywood. That time is over.

While this still holds true for many professionally produced studio films, the rise of social networking sites, the availability of webcams, digital camcorders and mobile phones with video-recording capabilities has vastly increased the supply and availability of content.

The democratization of video production, in combination with broadband access and the Internet, is bringing about new challenges and opportunities for both the media and telecoms industries. The “one-to-any” model used by TV and radio is making room for a “many-to-any” model.

Now anyone can be a potential producer and distributor of content.

Millions of people are already taking part in this movement towards the global sharing of rich, personalized media. The fact that the video community website YouTube has 65,000 uploads per day proves that interaction can turn a passive coach potato into an active participant. And the fact that the same website hosts some 100 million video streams every day shows that people are watching.

to producer





Big changes in the works for operators, content owners and advertisers.

When TV moves from one-way distribution to digital, two-way networks, time and place-shifted, interactive and personalized TV will significantly change TV distribution as we know it.

While giving consumers what they want, IPTV and Mobile TV will change the playing fields for telecom operators – as well as advertisers and the media.

Content and advertising fees, including paid interactivity like voting, greeting and shopping, hold promises of increasing revenues for many of those involved in the value chain. But exactly how the business models will work are not equally as obvious.

We expect to see a variety of different business models over the coming years as media giants, web distributors, hardware manufacturers and telecom players scramble to find their best position in the value chain.

New revenue streams and new business models.

Operators are looking for ways to move beyond the “me too” position of bandwidth providers and get a piece of the paid content and transaction action that’s streaming through their networks. Their challenge is to select a technology that provides a full range of TV-related services that consumers will pay for. And then establish a business model and set a price structure that’ll give them their fair share of the revenue pie.

At the same time, content owners are looking for new ways to reach an audience that’s becoming increasingly fragmented for every day that goes by. And they now have a unique opportunity to start distributing their products directly to consumers. They’re eagerly eyeing the revenue opportunities offered by interactive services. And they already understand the opportunities that can be gained from mining the consumer feedback loop enabled by IP-based content distribution.

A SECOND HEAVEN FOR ADVERTISERS

Advertisers are also looking for new ways to spread their messages; old models are under fire and traditional channels are losing their magnetism and ef-

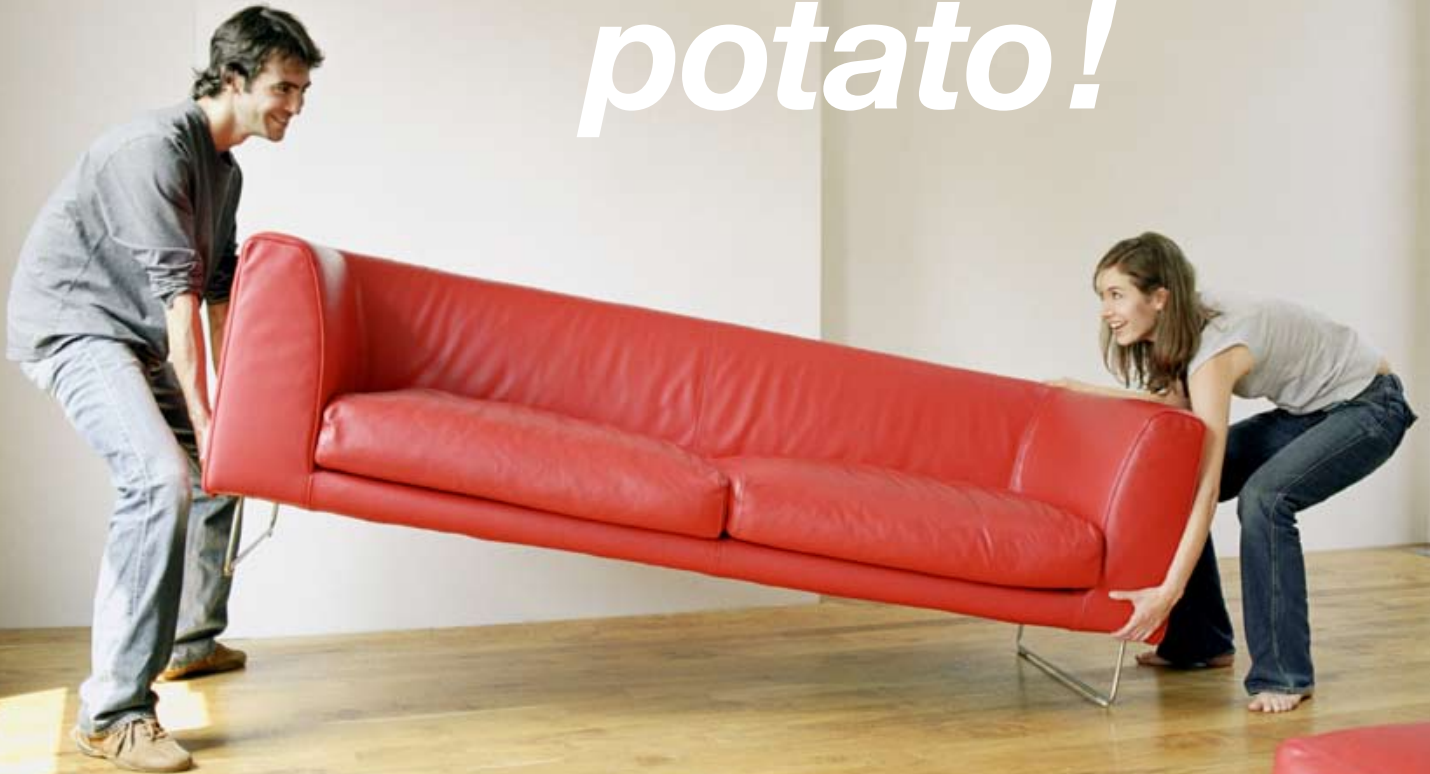
fectiveness. In the US alone, TV advertising expenditures total around 70 billion USD and advertisers are increasingly moving this money to the Internet. And as fragmentation decimates audiences and viewers are skipping commercials, the money for producing new, appealing content is also becoming less available. That means program quality suffers. And the downward spiral continues...

The interactivity and personalization offered by IPTV and the anywhere, anytime promise of Mobile TV sounds like a second heaven to advertisers. The promise is of increasing a message’s consumer relevancy, all while opening the field for targeted and engaging advertising where a customer can be tracked from their first click to a product’s purchase. And the possibility of IPTV and Mobile TV to focus advertising messages towards certain geographic areas will open up new opportunities. The possibility to tailor content based on a user’s age, gender and personal interests will further add to the value for advertisers. All of this, of course, with an end user’s consent.

But for these things to happen, advertisers have to adapt to a world where consumers enjoy control.



*Goodbye
couch
potato!*



Pyramid Research forecasts global revenues from broadcast Mobile TV services to be over USD 13 billion by 2010, and potentially as much as USD 28 billion.

Rescuing 3G with mobile TV, Pyramid Research, 2006.

Mobile TV is on now.

Mobile TV is easy to grasp. Even for the average consumer, bringing TV to the mobile screen is a logical step.

Mobile TV services have already been launched, so we know that people are quick to adapt their viewing habits to mobile situations. And Mobile TV will provide so much more than just traditional scheduled TV viewing. As people get used to personalization, interactivity and time-shifting in their living room, they won't accept anything less when they're on the move.

The context of use heavily influences the way people watch TV. This sometimes makes the typical Mobile TV session shorter than when people watch scheduled or linear TV at home. But experience from markets where Mobile TV has been around for a while shows that people also tend to watch longer programs – like series episodes or soap operas – on their mobiles. And that they even watch Mobile TV when they're at home, but not in front of their TV set.

Ericsson Consumer & Enterprise Lab research shows that about 70% of all Mobile TV users are watching TV outside the home on a weekly basis; they watch it while commuting, when they're out and about, while they're waiting for

someone and during breaks at work and school. Perhaps more surprising is that 60% are using Mobile TV at home at least once a week. In the US, about 60% are using Mobile TV on a daily basis while the lowest numbers were found in France and Japan.

Another exciting opportunity for users is Mobile TV podcasts, where content is delivered to a user's mobile on demand or by subscription. Stored locally on the handset, this content can then be viewed even when there's no network connection. And a service provider can schedule the delivery to "off-peak" hours, for example during the night (provided the handset is on and connected). Obviously, all these possibilities make it important that the look and feel of end-user interfaces are the same – no matter what type of service they're using.

The development of multi-tasking habits – consuming more than one media at the same time while doing completely different things – will definitely affect Mobile TV viewing habits and behavior. Not to mention that the mobile phone is a distinctly personal device.



ANN IS USING THE TIME ON THE BUS TO WATCH A MUSIC SHOW.

THE SHOW LETS HER VOTE ON HER FAVORITE BAND, "PAST LOVE" AND CHAT WITH OTHER VIEWERS.

This is Fun!

SHE CAN EVEN BUY A CONCERT TICKET TO SEE THE BAND.

AND BECAUSE SHE BOUGHT THE TICKET, SHE GETS A DISCOUNT ON MUSIC VIDEO DOWNLOADS.

SHE GETS IT ALL, WHENEVER, WHEREVER.

Wow I didn't even know they were in town

I can't get enough of them

Wow, this really rocks!



Who's watching what?

According to Ericsson Consumer & Enterprise Lab research, news, music and sports are the most popular content to watch on Mobile TV. To make the Mobile TV experience even more appealing, movies, series and comedies – the most popular types of TV shows – need to be added to current channel listings.

The most popular content types to watch while waiting outside of the home were music (45%), news (40%) and sports (37%). The most popular content to watch while at home was sports (37%), music (34%) and news (32%) closely followed by movies (26%).

Not surprisingly, “Free TV¹” is the most desired package. The good news is that consumers seem to accept sponsored usage since it lowers their costs. Push TV/Podcast TV², that is subscriptions to programs of personal interest, were also very popular. There is strong evidence that consumers want a higher degree of personalization for both channels and programs, especially in France. Offering Traditional (scheduled/linear) TV³ is the second least wanted package.

If consumers could choose themselves, almost 60% would prefer to watch on demand – at their own convenience – anytime and anywhere.

People started using Mobile TV because they were curious and because it seemed like a cool service. And while curiosity and “cool” may be sufficient enough to attract early adopters, the real benefits of Mobile TV must be promoted to increase the number of users outside this segment.

On average, Mobile TV is used 100 minutes per week (perceived usage). France has the lowest usage with 70 minutes per week and Korea has by far the highest consumption with 160 minutes per week, or slightly more than 20 minutes per day. The peak usage time for Mobile TV is most often between 18:00 - 22:00, but in the US it is between 14:00 - 18:00. In Japan more people are watching after 22:00.

The way users pay for their service doesn't seem to affect the viewing time. For early users of Mobile TV, free usage doesn't necessarily mean increased viewing, while paying users seem to make sure they get their money's worth. On average, Mobile TV users spend 14 EUR per month, but the variations in spending are large.

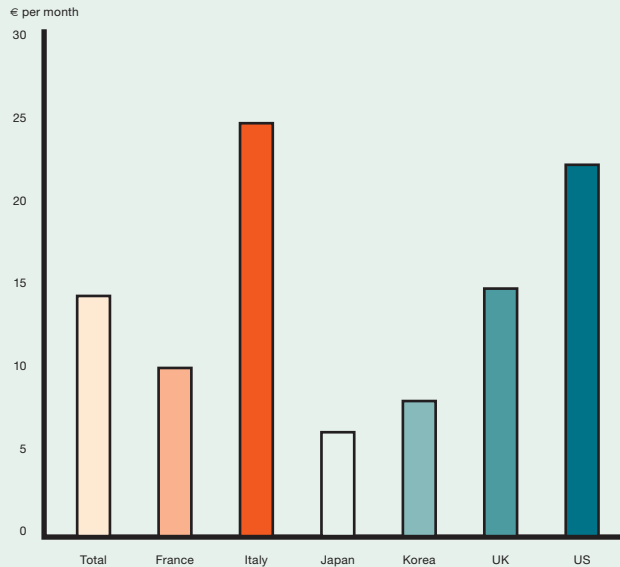
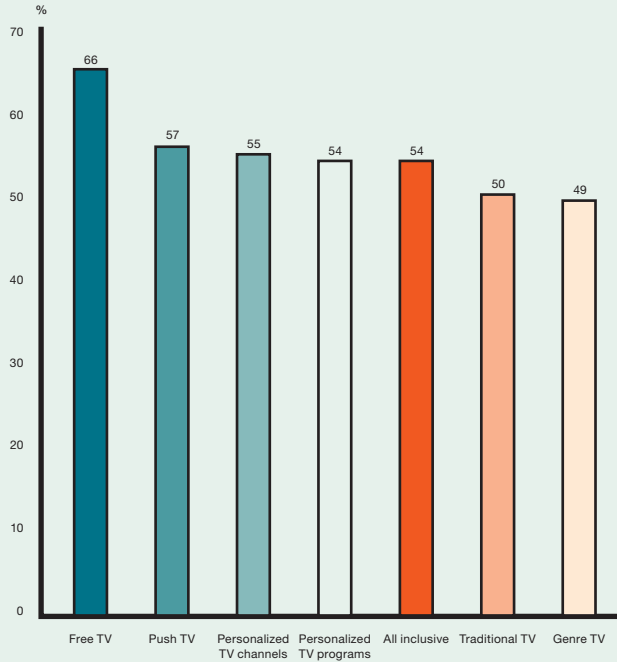
1 Free TV: Regular TV channels/programs that you can watch on your mobile phone. They're sponsored with a variety of advertisements based on personal interest. Viewing doesn't cost anything.

2 Push TV/Podcast TV: You subscribe to TV shows/programs that you like and the latest episodes are automatically downloaded to your phone during

the night. The programs are stored on your mobile phone and you can view them at your own convenience.

3 Traditional (scheduled/linear) TV: Watching regular TV channels, but on your mobile phone.

Not surprisingly, "Free TV" is the most wanted package. Push TV / Podcast TV with subscription to programs is also very popular and there is strong evidence that users want a high degree of personalization for both channels and programs.



Mobile TV users spend on average €14 per month, but with large local variations.

People like what they're seeing.



More than 120 mobile operators around the world have already launched Mobile TV on a commercial basis – and people like what they're seeing.

Services like Catch-Up TV, that offer consumers the ability to watch a selection of the shows they missed last week, See Me TV, that offers exclusive consumer-



"We are now welcoming the Mobile TV of tomorrow. Bonuses include fast channel-switching, built-in interactivity and easy access to new services. And many viewers even appreciate ads, as long as they are relevant and may help lower the price of the service."

*Gunnar Garfors, Director of Development,
Norwegian Broadcasting Corporation (NRK)*

generated content or mobisodes, broadcast TV shows that are shortened specifically for mobile viewing, have already proved to be popular.

So the consumers are there, the technology is ready and players from lots of different areas are out to get a piece of the action. To make things happen, and to safeguard their territory, operators that own

the required network infrastructure, as well as content and format owners, need to start agreeing on mutually beneficial value chains and business models.

Together they can take a service that consumers already know and turn it into an enjoyable and accessible high-quality experience – in entirely new ways and new places.

**Different ways
to deliver
Mobile TV.**



Mobile TV technology choice.

There are currently two main ways of delivering Mobile TV. The first is via two-way cellular networks and the second is through a one-way dedicated broadcast network that, for example, uses DVB-H, MediaFLO, T-DMB or DAB-IP.

Of the 170 plus commercially launched Mobile TV services worldwide, almost 90% are based on existing two-way cellular networks. It's easy to understand why. While 3G mobile networks are already in place, dedicated broadcast networks usually need new spectrum allocations and a completely new infrastructure. This demands both considerable investment and deployment time. And that's something that'll obviously affect the business case.

Experiences tell us that the best technology is not winning, the best business model will. The cellular network track has a major benefit for mobile network operators (MNO). Depending on existing assets and market conditions, other mobile TV service providers as e.g. broadcast network operators (BNO) will explore and follow the second track. However, any provider that is thinking of rolling out a dedicated broadcast network as e.g. DVB-H needs to plan for how to interwork the 3G network in order to cater for interactive services. This as broadcast network need the mobile network to get the uplink communication.

Use existing cellular networks

- More than 2,5 billion users and coverage in place
- Unicast and broadcast MBMS

Build new, dedicated networks

- Scattered technology and spectrum with DVBH, MediaFLO, T-DMB, S-DMB etc
- Broadcast only



Two mobile TV technology tracks

A mobile operator's advantage.



Using existing 3G (WCDMA/HSPA) networks is the fastest and easiest way to get Mobile TV off the ground. It allows for the quick start an operator needs to grab the initiative and develop relationships with both customers and content providers. All while capitalizing on existing investments.

There is more than enough capacity in 3G networks to scale up for a mass market of Mobile TV services, particularly if an operator has HSPA as this will provide for several steps of capacity increases. This allows for more users while benefiting both the diversity and the quality of Mobile TV services. And MBMS (Multimedia Broadcast Multicast Service), which means broadcast over 3G networks, will soon allow a traffic channel to be shared by all the users that are simultaneously watching the same program in the same area.

Existing 3G networks can be smoothly migrated to MBMS without additional spectrum and systems requirements other than software upgrades and dimensioning. This will enable mass-market Mobile TV services for a large number of users in every network cell.

With mobile networks, it's possible to optimize the usage of network capacity and investments by combining different delivery mechanisms, that is, unicast and broadcast.

With unicast, content is transmitted separately from a single source to a single destination, like from a server to a mobile handset. And that's how each individual can get the content they want. With broadcast, the same content is delivered to a very large number of mobile handsets in a single transmission. Obviously, broadcast is used for popular programs that have lots of viewers, while a virtually unlimited number of additional programs and on-demand content can be delivered using unicast. In this way, an operator can make the "long-tail" of archived and niche programs available to customers on demand, as well as let them upload and view consumer-generated content.

Other advantages of 3G networks include the fact that the necessary spectrum allocations, as well as impeccable indoor and outdoor coverage, are already there.

”Customers will be able to interact with the source, send comments, vote, decide on camera angles or even influence the outcome of the source!”

Eduardo Jiménez, Mobile TV Product Manager, Vodafone Spain



Mobile TV over 3G networks means major business.

The low investment costs, as compared to the money consumers are willing to pay, add up to an excellent business case for Mobile TV over 3G networks.

And the market is there. At the beginning of 2007, there were more than 2.5 billion mobile subscribers across the globe. In addition, the 3G handsets currently on the market already have all the components needed to deliver Mobile TV.

INTERACTIVITY MAKES ALL THE DIFFERENCE

The choice between a broadcast-only solution and a two-way 3G network (combining unicast and broadcast) is all about the infrastructure required to deliver the kind of experience tomorrow's Mobile TV viewers will want. Modern 3G networks don't just address the market for traditional scheduled, or linear, TV on mobile handsets, but they also come with the all-important return channel that enables interactive services, personalized content and Video-on-Demand.

Rogers and the 2006 FIFA World Cup

The Rogers FIFA World Cup WAP and WEB sites were designed and produced by Ericsson for Canadian telecommunication operator Rogers Wireless. Through the website, Rogers provided its wireless subscribers with near real time SMS and video alerts from the World Cup, as well as downloadable ringtones, directly to their mobile phones.

The website proved popular with Canadians, as thousands of users signed up to receive alerts on their favorite teams.

“Me on TV” makes anybody a news reporter

Ericsson in the Netherlands, Triple-IT and Endemol Nederland have teamed up to create innovative services for user generated content and mobile participation TV. “Me on TV” enables subscribers to interact with the TV-shows and news, to send in live news reports and comment on a TV program via their mobile phone, in real-time, and even from foreign locations. “Me on TV” was launched during the final of last year’s “Big Brother” in the Netherlands.

NRK and the future of advertising

Norwegian Broadcasting Corporation (NRK), in cooperation with Ericsson, provided its viewers with a consumer-empowering advertising solution that changed the supplier-push model to a consumer-pull one. This means viewers receive only advertisements that are of value and interest to them. They can interact with the ads and purchase products while they’re on the move. And then tell their friends about what they’ve bought. Advertising content will span an array of formats including videos, banners, ticker texts and branded downloadable content.

Unicast and broadcast over 3G networks.

Virtually all Mobile TV services delivered on today's 3G / EDGE / GSM mobile networks are sent via unicast over point-to-point (PTP) connections. This means that TV programs are transmitted from a content server to each mobile handset in separate transmissions – one for each recipient.

HSPA INCREASES THE CAPACITY

With HSPA, enough capacity will be provided to cover most mobile tv services. Depending on radio conditions, up to 32 concurrent 128 kbit/s parallel Mobile TV streaming users can be scheduled per cell and carrier with unicast. Operators can often deploy up to three carriers per cell, giving a maximum of 96 (3 x 32) simultaneous users – all watching the content of their choice. This means that a WCDMA/HSPA base station, with three sectors and three carriers, is capable of serving up to 288 (3 x 96) simultaneous Mobile TV viewers, depending on radio conditions. Today, the peak rate for HSPA is 14.4Mbit/s, but it'll soon offer higher peak rates and cell capacity, enabling more simultaneous Mobile TV users as well as higher-definition services.

MBMS BROADCASTS TV OVER 3G NETWORKS

As the number of simultaneous users continues to grow, MBMS can be introduced. This will allow lots of users in the same cell watch the same program at the same time (like during a big sports event).

With an MBMS solution, the server delivers only one stream per TV channel, regardless of the number of

viewers. This means the same program or service is delivered to everyone that has decided to watch a specific program at a specific time during a single transmission. And just as with traditional broadcast TV, anyone in that area has the possibility to watch the program. In addition, MBMS will give operators, content owners and advertisers unique control, tracking and selection possibilities as programs can be targeted to specific areas.

An MBMS broadcast channel serves a very large number of users in the same area with the same scheduled TV show. But at the same time, an unlimited number of additional programs and on-demand content can be delivered using unicast. This makes the combination of broadcast and unicast the ideal solution for a Mobile TV offering that includes both scheduled, on-demand and podcast programming. Unicast can also be combined with dedicated broadcast network. In Europe some operators are coming together combining 3G mobile networks with a dedicated broadcast DVB-H network.

MBMS provides a total capacity of 1.6 Mbp/s per 5 MHz WCDMA carrier. With a sufficient transmission rate for mobile handsets, this translates into 12 broadcast TV channels per cell or per MBMS Service Area (MSA) with 128 kbit/s per channel. And it uses the same licensed frequency spectrum as 3G, making spectrum allocations a non-issue. MBMS only requires minor changes to existing radio and core network protocols, making it relatively inexpensive when compared to non-cellular broadcast technologies.

"We share Ericsson's view that 3G is the best and most resource-efficient way to get Mobile TV to consumers. Our cellular networks give users high-quality services and the possibility to choose when and where they want to watch specific content. This is true for today's WCDMA networks and even more so for tomorrow's HSPA and MBMS nets."

Shlomo Liran, CEO, Hi3G



UNICAST

Unicast transmits content from a single source to a single device through a separate channel that allows each consumer to get the content they want. Each user requires a separate channel and connection to the server. Unicast always comes with the all-important return channel needed for interactivity.



BROADCAST

Broadcast is ideally suited for delivering TV channels when many individual consumers are watching the same program in the same place and at the same time. MBMS broadcast is the 3GPP-standard of content distribution, such as TV channels in cellular networks.



COMBINING UNICAST AND MBMS BROADCAST

An MBMS broadcast channel serves all the users in the same area with the same scheduled TV show. At the same time, an unlimited number of additional programs and on-demand content can be delivered using Unicast. MBMS broadcast, in combination with Unicast, enables user interactivity even while watching a broadcast channel.



**Getting the big
picture with IPTV.**

Research shows that in the 16-25 age group, video content downloaded from the Internet already dominates traditional scheduled TV. These people want to control their own programming and many of them have already left traditional, scheduled TV behind. For them, having access to the Internet is a lot more important than having a TV.

My TV is different than your TV.

IPTV – TV and other services via a broadband connection – will play a key role in the changing world of television.

It can be used for distribution of broadcast TV services in the same way as terrestrial, satellite and cable. However, the real potential for IPTV lies in personalization, interactivity, multiple streams, high-definition TV capabilities and the integration of communication and video services.

IPTV can also offer increased control of what's being watched, when, by whom and how often. This

is an important feature, for instance, for parents who want to protect their children from violence and adult content and for those who would like to know how much money they're spending on an individual basis. Also, by creating personal profiles, each individual can get their personal choice of channels and they'll receive information and advertisements relevant to their interests.

Networked-based storage will open up for time-shift capabilities for all types of content. And that's because people want to decide when and what to watch – and know where to find it.

THE FAMILY'S IN FRONT OF THE TV, WATCHING A BINGO GAME SHOW.

JOE USES THE MOBILE AND ORDERS BINGO CARDS.

I'll order Four bingo cards

Dad, give me your mobile

AND MUCH TO THEIR SURPRISE, JOE WINS.

CONGRATULATIONS JOE!
JOIN US PLEASE!

JOE USES THE MOBILE CAMERA TO JOIN THE SHOW.

Here I am!

LOOK, I'M ON TV!

Live

With IPTV, operators can take the lead.

Through IPTV, operators are now in a unique position to transform TV from a one-way, single-stream of channels into a two-way communications service that offers seamless media interactivity, convenience, entertainment and personalization.

For most operators, this means a necessary change in network strategy. From best-effort Internet to high-performance broadband that's capable of true, two-way multimedia communication with a guaranteed quality. It'll also place new and hard demands on the attractiveness and simplicity when a consumer purchases, uses and manages these services – as well as quick and simple provisioning.

FROM BEST-EFFORT INTERNET ACCESS TO IPTV

While best-effort broadband may work for Internet telephony, it won't be good enough for people watching the Super Bowl or the FIFA World Cup final.

Quality Triple Play places heavy demands on a network. It demands high capacity for access and aggregation with a guaranteed bandwidth and overload protection. Multicast features and secure authentication are also musts. Having achieved all that, an IPTV-capable network also has to provide for low-bit error for TV while at the same time provide low-latency variation

for telephony and low latency for gaming. Operators will also need standards-based tools for the creation of new revenue generating services that enable both interoperability and quick and easy service provisioning.

Today, IPTV is a key driver in the architectural shift from legacy broadband networks, which are primarily optimized for Internet surfing at moderate speeds, to high-performance broadband networks.



**NETWORK CAPABILITIES
REQUIRED FOR TRIPLE PLAY AND BEYOND**

To be able to deliver all the promises of the new IPTV experience, networks have to cope with the basic demands of capacity, quality-of-service and geographic coverage. Experience has shown that, in reality, there's

only one viable alternative for the access aggregation network. And that's to build it on Ethernet and IP. The alternatives for an access network are ADSL2plus, VDSL2 or fiber. The solution for gradually meeting future demands, such as multiple channels and HDTV, is to move fiber as deep as possible.



Moving forward with IMS.

Personalization, interactivity, combined services and fixed-mobile convergence can be achieved in several ways. But to succeed in stimulating new services and in guaranteeing interoperability between technologies, the industry has to agree on one approach that's based on open standards and interfaces. The most promising approach is to use an IMS framework.



IMS (IP Multimedia Subsystem) – an open standard supported by all major telecommunication operators – is a common control framework for fixed and mobile devices. As such, it opens the door to lots of new possibilities, including session portability between fixed and mobile devices.

With IMS, users will not only be able to view

Video-on-Demand wherever they are, but also talk, chat, send text messages and take part in things like voting and consumer polling. And that could evolve into purchase transactions and targeted, interactive advertising. A user that begins watching a TV program at home can transfer that TV session to their mobile phone as they leave the building.



***”TV over Internet protocol - IPTV
- will transform couch-cruising into
an on-demand experience”***

Frank Rose, Wired Magazine

With IMS playing a major role in future offerings, the vision of converged “quadruple play” (combined telephony, Internet, TV and mobile) services can become a mass-market reality.

IMS-based TV also allows for service roaming by linking the TV experience to a user profile instead of a device. A TV service can then be delivered to any

device in any network in the IMS domain, something that opens up the arena for true, fixed-mobile convergence.

A combination of IMS with DLNA (Digital Living Network Alliance) will enable further convergence, allowing other types of devices to be connected to the IMS network inside and outside the home environment.

Ericsson and the future of TV.

MOBILE TV

Combining broadcast and unicast, Ericsson provides a total Mobile TV solution for traditional (scheduled or linear) TV, on-demand TV and podcast TV. Our offering ranges from multimedia content and an easy-to-use Mobile TV client with fast-channel switching and electronic programming guides to back-end servers and network features. Ericsson's Service Delivery Platform manages the full lifecycle of service offerings. Our real-time charging system lets the proactive use of charging, pricing and promotions boost productivity and profitability. Additionally Ericsson provides a broad portfolio of professional services. Ericsson delivers Mobile TV solutions that operators can integrate and manage themselves, as well as hosted and managed solutions.

If an operator decides to use a dedicated broadcast network such as DVB-H as a complement to its cellular network, Ericsson, with its network knowledge, and Sony Ericsson, with its handset expertise, are well suited to help them integrate and optimize the combination of these technologies. The Ericsson Mobile TV solution will also provide support for dedicated broadcast technologies as DVB-H, and with the recent acquisition of Tandberg, video compression technology and expertise for DVB-H network will also be offered.

- Ericsson has more than 50 Mobile TV contracts globally

- HSPA is live in more than 120 networks in more than 60 countries all over the world. Ericsson supplies HSPA/WCDMA radio equipment to nearly half of all these (commercially launched) networks.
- In the beginning of 2006, Ericsson was the first company in the world to run live trials of MBMS traffic.
- Approximately 30 percent of today's WCDMA handsets are based on Ericsson's mobile platform technology.

For more information about Ericsson's Mobile TV solution, please see www.ericsson.com/mobiletv

IPTV

Ericsson, with its history in delivering real-time, telecom-grade infrastructure, is driving the harmonization of IPTV and related services delivered over broadband and based on open standards. Ericsson is working with the relevant standardization bodies to achieve economies of scale and interoperability across IPTV and other service reference architecture and interfaces.

Ericsson's current end-to-end IPTV offering is based on world leading and proven products from partners such as Tandberg and Kasenna. Ericsson's solutions are continuously being extended with new functions (like ad insert) and tested in our labs before being delivered. Ericsson's strong position in full-service broadband, reinforced through the acquisitions of Redback and Marconi, brings a wealth of experience that adds to our customers' benefits.

Ericsson is the leader in broadband and the evolution to all-IP

- More than 100 IP-based DSL networks deployed
- 17 million DSL lines installed worldwide
- Over 350,000 wireless and optical transport network elements
- Over 160 softswitch contracts awarded globally and over 100 of these networks are in operation
- Over 200 mobile packet core networks in operation
- More than 1 million short-haul microwave radios in operation

IMS

As the market leader in IMS – with nearly 40 commercial contracts around the world – Ericsson is committed to making personalized and interactive IPTV services a mass-market success for its customers. Our vision of personalized IPTV services delivered over broadband is based on open standards, including IMS for delivering enriched communication services and Digital Living Network Alliance (DLNA) technologies for home networking. Within the foreseeable future, the combination of IMS and DLNA will give consumers the freedom of choosing when, where and on what device they want to enjoy their digital entertainment. Consumers will use their mobile phones to communicate with the home environment. For example, users could wirelessly view digital photos stored in their mobile phones on a TV in the living room, use a home gateway for instant messaging between the living room TV and mobile phones outside the home, or even access content stored on a home PC via mobile phones.

Broadcast

The simultaneous delivery of content to all users tuned to a channel. In a cellular network, a broadcast service delivers the Mobile TV service to all mobile terminals in a cell or a service area.

Unicast

The transmission of content from a single source to a single consumer, for example from a content server to a mobile device.

MBMS (Multimedia Broadcast Multicast Service)

Multimedia Broadcast Multicast Service (MBMS) is a broadcasting service that can be offered via existing GSM and UMTS cellular networks.

HSDPA (High-Speed Downlink Packet Access)

A packet-based data service in W-CDMA downlink.

HSPA (High Speed Packet Access)

Extends WCDMA with additional transport and control channels which provides enhanced supports for interactive, background and, to some extent, streaming services.

WCDMA (Wideband-Code Division Multiple Access)

A 3G standard that supports very high-speed multimedia services such as full-motion video, Internet access and video conferencing.

DVB-H (Digital Video Broadcasting – Handheld)

A technical specification for bringing broadcast services to handheld receivers. Formally adopted as ETSI standard EN 302 304.

MediaFLO

Qualcomm's technology to broadcast data to portable devices. Broadcast data will include audio and video streams, individual video and audio "clips".

DMB (Digital Multimedia Broadcasting)

A digital radio transmission system for sending multimedia (radio, TV, and datacasting) to mobile devices such as mobile phones.

DAB (Digital Audio Broadcasting)

A technology for broadcasting of audio using digital radio transmissions on terrestrial networks.

All the stated figures are applicable for January 2007, unless otherwise noted.

Ericsson is shaping the future of Mobile and Broadband Internet communications through its continuous technology leadership. Providing innovative solutions in more than 140 countries, Ericsson is helping to create the most powerful communication companies in the world.