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# Telecoms Past and Future

*Can lessons be learnt?*

*Is there a*

*Paradigm shift on the way?*

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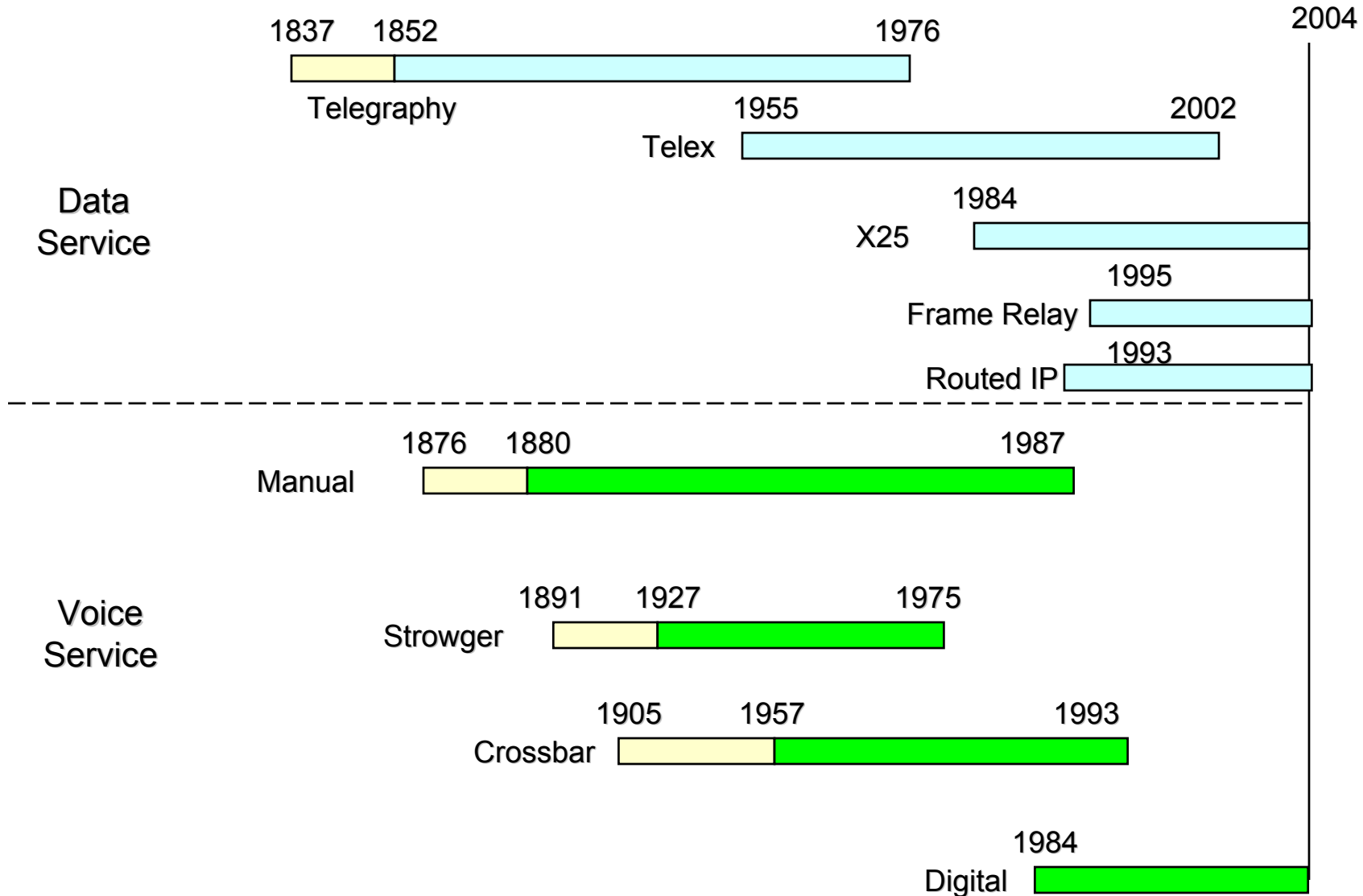
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- ✿ **A brief history of Telecoms evolution.**
  - Can the past tell us anything about the future?
- ✿ **Next Generation Services.**
  - From a Users perspective
  - Basic building blocks.
  - Possible timescales.
  - Some hurdles to overcome in business models.
- ✿ **Next Generation Networks**
  - Eircom network now
  - Eircom network 2010.
- ✿ **Conclusions.**

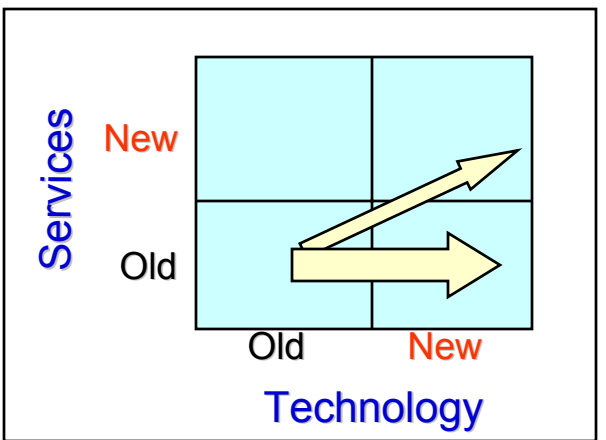
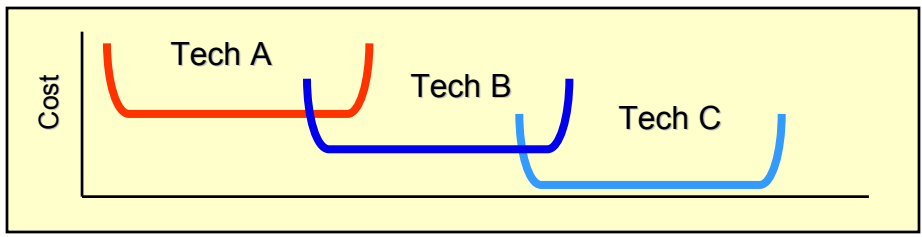
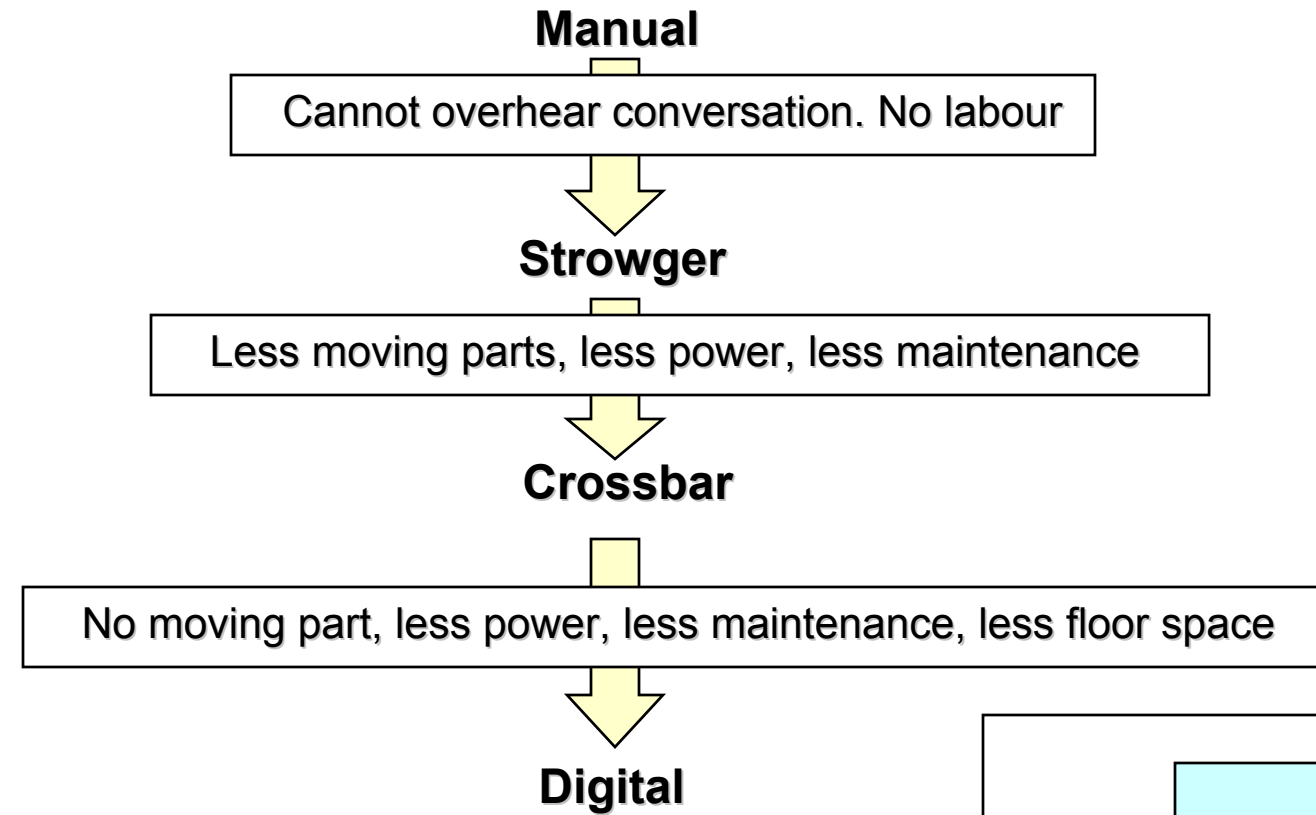
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# Brief Evolution of Telecoms

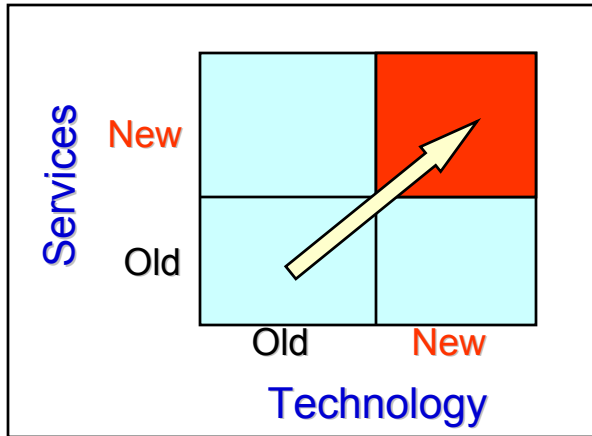
# A little bit of History



# Technology Change



# Paradigm shift - who can spot it?



- ✿ **Travel. Rail to Plane. Horse to Car**
- ✿ **Watch. Analog to Digital**
- ✿ **Computing. Mainframe to PC.**
- ✿ **Written word. Letter to email**
- ✿ **Speech. Fixed to Mobile.**

## ✿ Famous blunders in Computing.

- ACME wanted to consult Lawyers before selling DOS to an unknown B.Gates. B.Gates looked elsewhere.
- Rank Zerox ignored PARCs new invention of Windows.
- IBM almost killed first PC.
- XYZ never copyrighted first spreadsheet.
- IBM didn't think anyone would bother to reverse engineer BIOS.

1946: "Television won't be able to hold on to any market it captures after the first six months. People will soon get tired of staring at a plywood box every night."

In 1977, a computer executive said this: "There is no reason for any individual to have a computer in their home."

# The 90s..what did and didn't happen.

## ❁ Happened

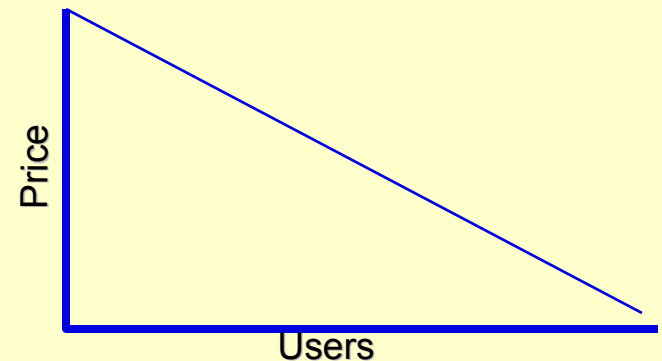
- SMS messages took off without any assistance.
- World wide web exploded after someone produced a freeware Mosaic browser....tech was already there for 20 years.
- Bill Gates took control of the desktop.....Mac SW was viewed as better but Office won.
- Everybody got a mobile.
- PCs jumped from Mhz to Ghz and Mbyte to Gbyte

## ❁ Didn't happen.

- Network Computers didn't get past first base.
- Clive Sinclair didn't sell his cars.
- Fibre to the Curb.
- Person to Person Video-conferencing.
- Solid business cases for Internet "for free" Companies.

## ❁ Lessons to be learnt

- Empower the ordinary user.
- More for less.
- Value = Quality x Benefit/ Cost.
- Benefit often = good enough.
- 80/20 evolution vs revolution.



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# Next Generation Services (NGS)

# Market Analysis - day in the life.

Analysis of a Users “day in the life” can point to service building blocks

*Derek in a 40 year old married with 2 children the eldest being 15.*

It is Saturday afternoon and Derek has his mobile PDA switched on. He needs a new drill and asks his PDA to get the cheapest replacement from the closest store.

His PDA beeps and his daughter is looking for credit to buy a new CD. He says yes (his financial assistant does the rest).

His PDA replies with the nearest store that has his drill in stock showing with a store location map. He is asked does he wish to reserve the item. He says yes.

He then gets a call from Amex Holidays who suggest a skiing holiday for him and take him on a User controlled guided tour on his PDA.

He drives to collect his drill and gets a where are you message from his wife. He replies and they agree to meet at the nearest coffee shop.

Personal Assistant

Financial Assistant

Personal Assistant

Financial Assistant

Personal Assistant

Virtual Presence

Meet me.

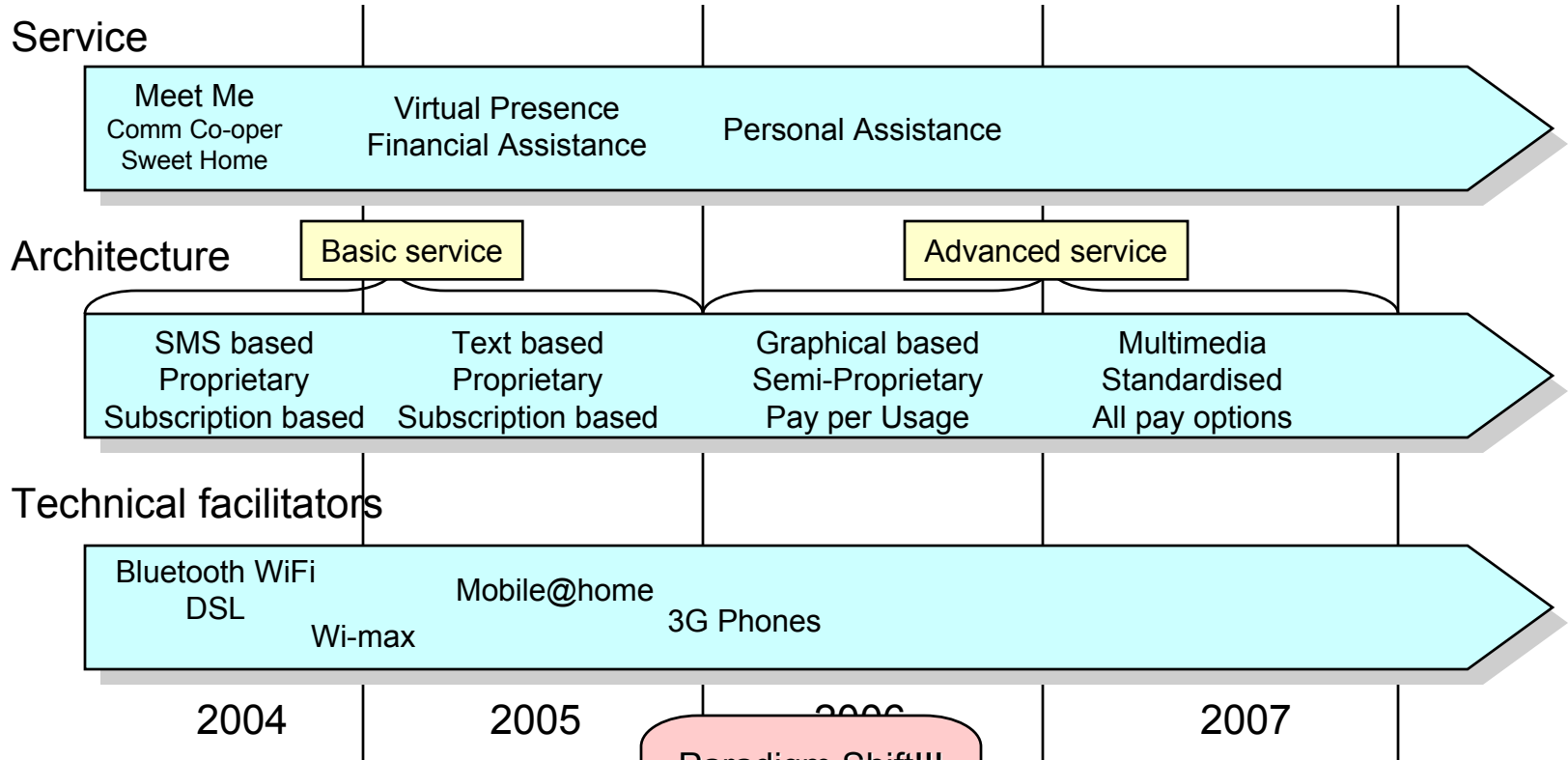
# What are the main services building blocks?

Building Block	Service	A	B
Meet me	Enable the encounter between two or more persons sharing similar and/or compatible interests	●	
Sweet Home	Aims to leverage security and confidence feelings about home with home networking technologies		●
Fashion Emotion & Art	All services to have rich content, be fashionable, appeal to emotions and be artistic.	●	●
Community Co-oper	Enhance collaboration between different people for work, for education, for leisure .		
Personal Assistant	Each user is the owner of a virtual personal assistant or agent that resides on the network .		●
Virtual Presence	A User may be virtually present or in a virtual environment .	●	
Financial Assistant	Specialised financial personal assistant.		●

\* Source: Eurescom Study P1341 - Next Generation Service Concepts

# NGS Roadmap Scenario.

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## Drivers towards NGS

- Appearance of multiple "3rd Party" Application/Content providers
- Increased proliferation of multimedia phones/ PDAs/broadband
- Lifestyle enhancing services.
- Evolution of SMS based services i.e. data rather than voice

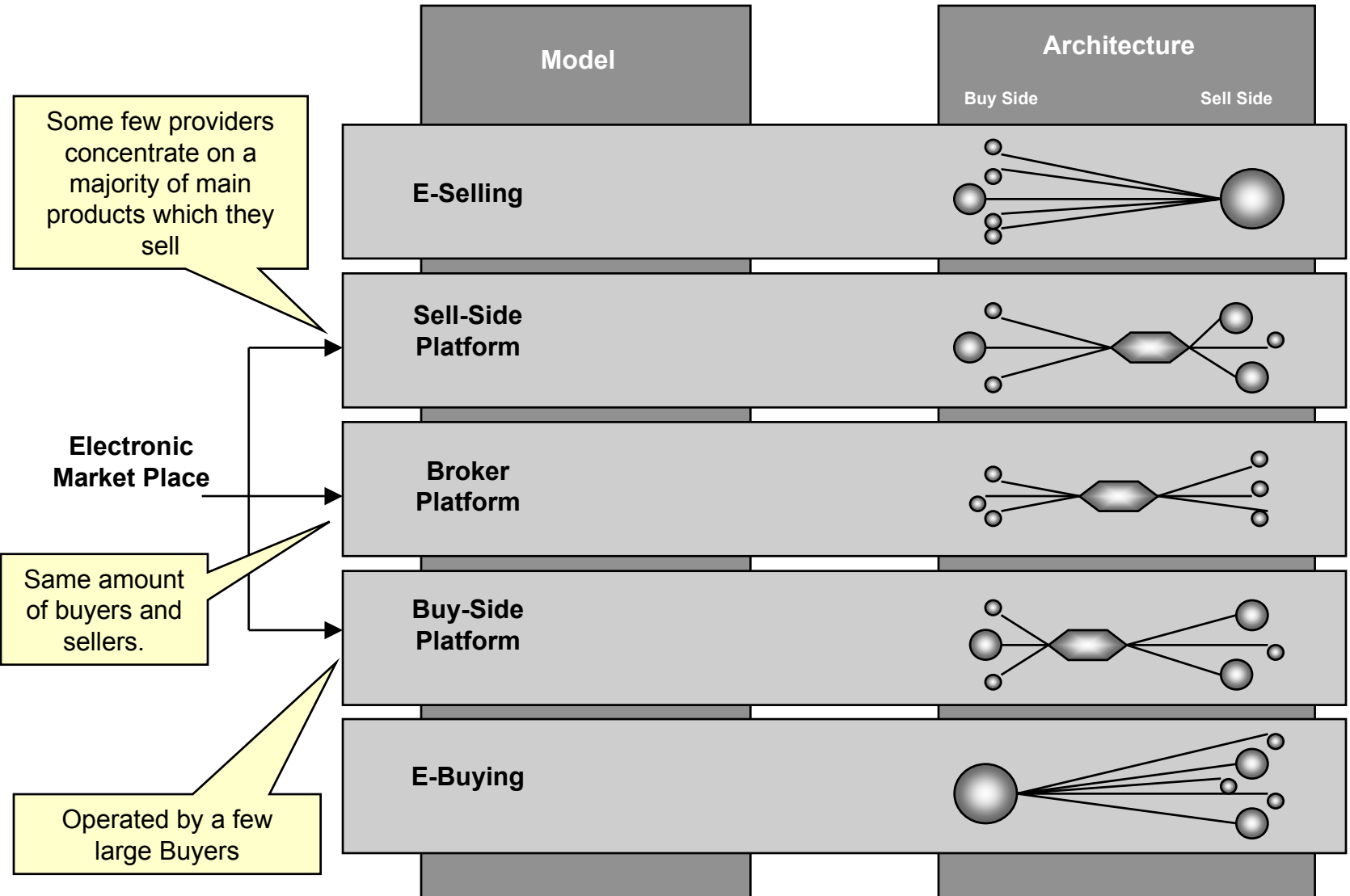
Paradigm Shift!!!  
Multiple interacting  
Services.

Paradigm shift !!!!  
Voice -> Data.

# Electronic market places

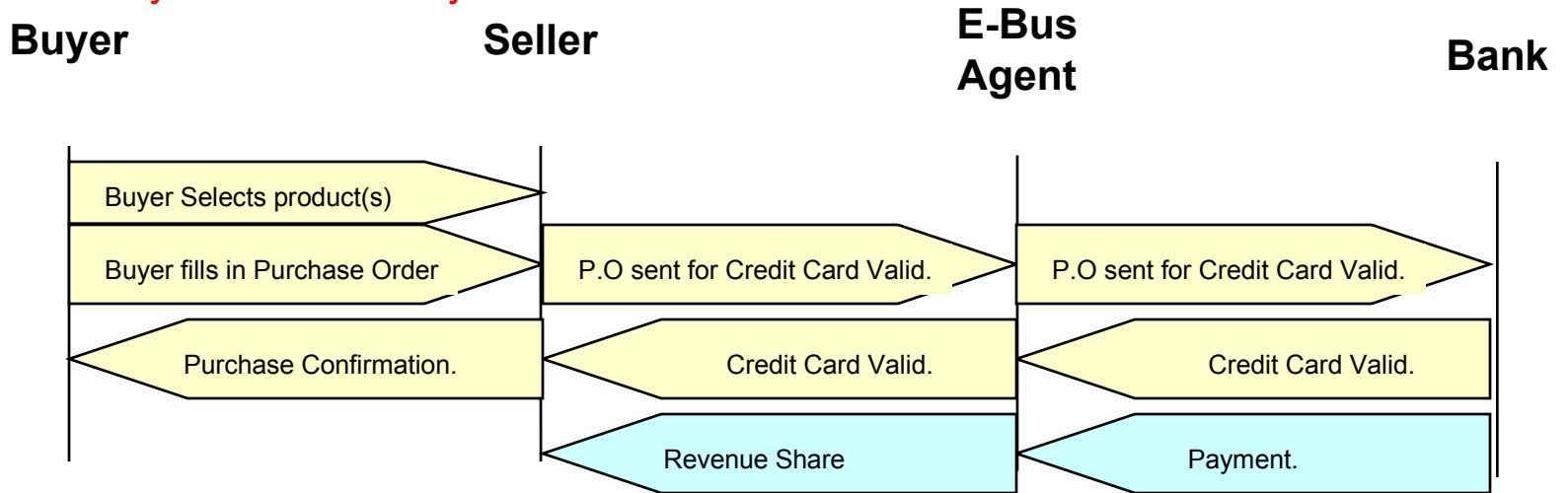
There are different kinds of electronic market places

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# Simple E- Business model.

Payment using credit-card over the internet very effective for certain products, but security and trust a major issue.

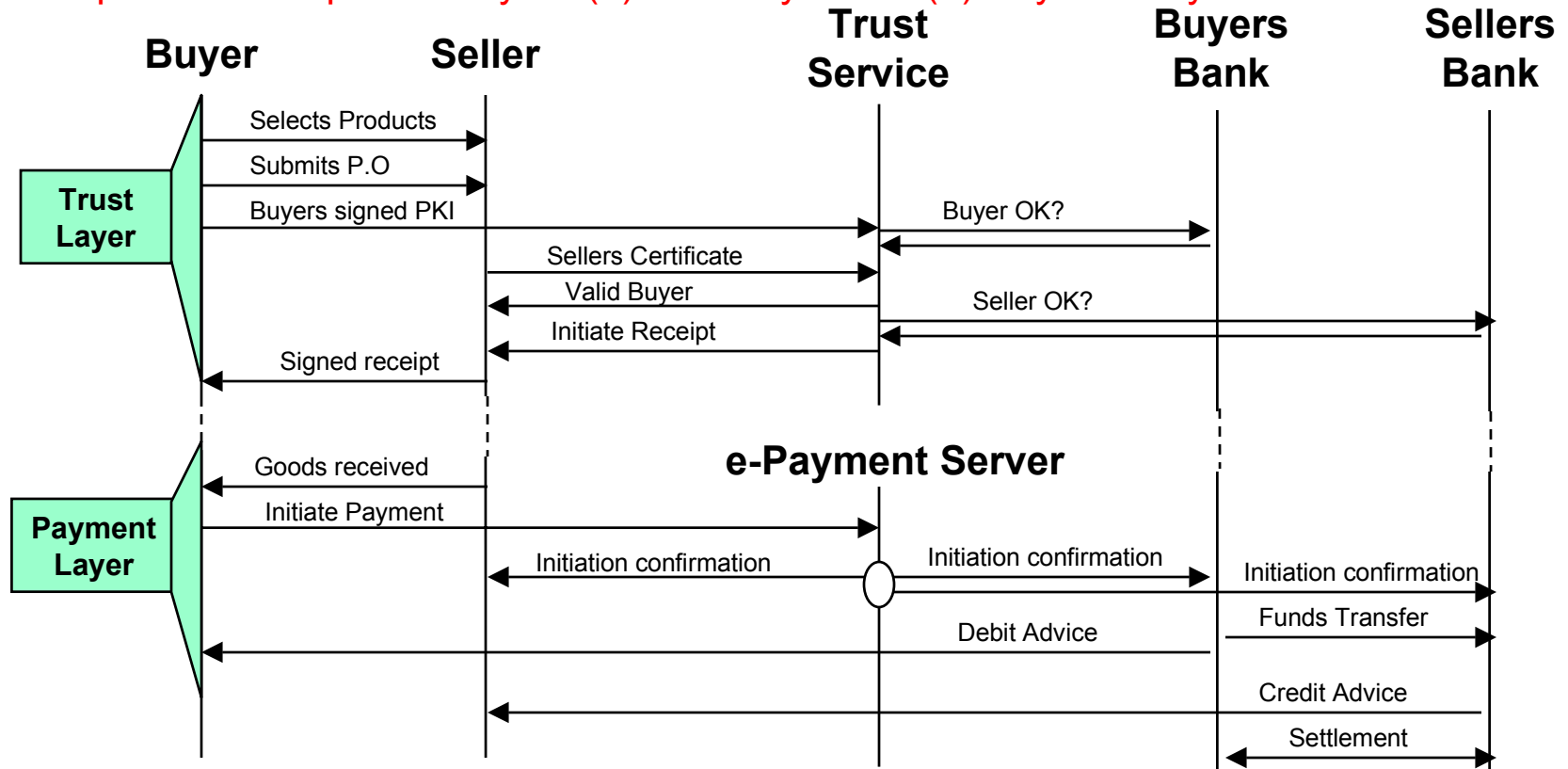


- ❁ Suitable for instant product delivery e.g membership, demo software release code, access to flat rate services.
- ❁ Not suitable for “pay per volume” services, or normal product delivery.
- ❁ No authentication of “buyer”, “seller” or “E-business agent” financial reputation or “buyer” authority to purchase....trust layer.
- ❁ No possibility of challenging payment or getting a refund once payment made.

# Business to Business (B2B) Model

B2B e-commerce more sophisticated and secure but also more difficult to implement. Requires 2 layers (1) Trust layer and (2) Payment layer

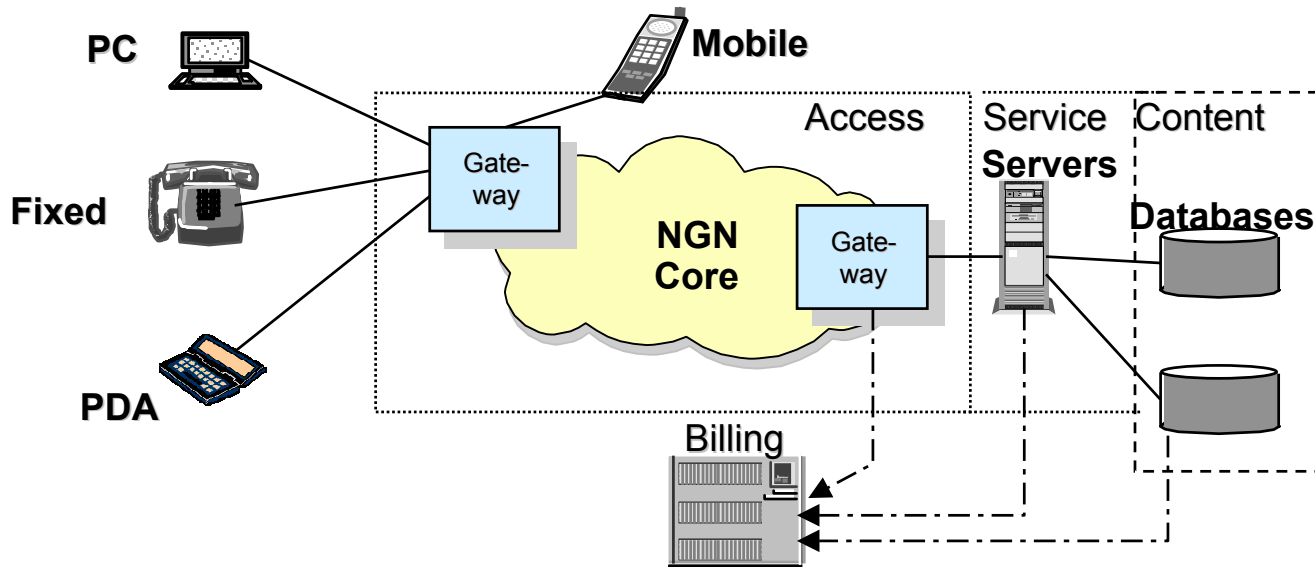
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- ❁ Suitable for “buy now but pay when delivered” type products.
- ❁ Uses a “Trust Service” to validate Buyer and Seller.
- ❁ All transactions “time stamped”.
- ❁ Allows for special terms and conditions between Buyer and Seller.
- ❁ Not suitable for event based billing e.g. telephone calls.

# NGS Model

NGS will require a complex business models to meet Users needs.

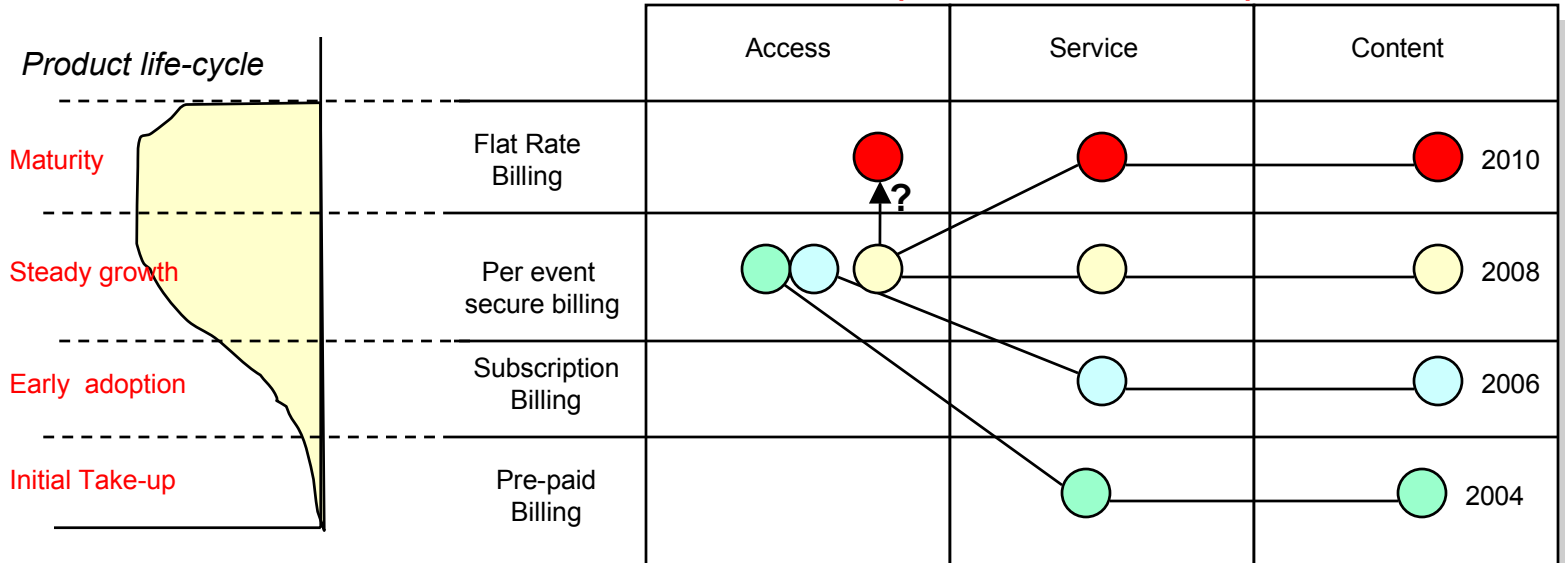


## ❁ Next generation services characterised by

- Terminal agnostic services.....User has a profile and the service will communicate to whatever User device is “live”.
- Multiple actors involved in providing service....Access Providers, Service Providers, Content Providers, Billing Providers etc.
- Must be capable of micro-billing for all elements of the service.
- Security, User/Seller Validation essential....need for “Trust Service” as in B2B e-commerce
- Must be able to support all versions of pricing (pre or post pay, subscription or volume or flat rate)

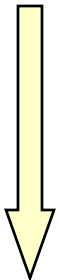
# NGS- Business Model evolution

Business Models will have to evolve from simple models to complex models.



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2004



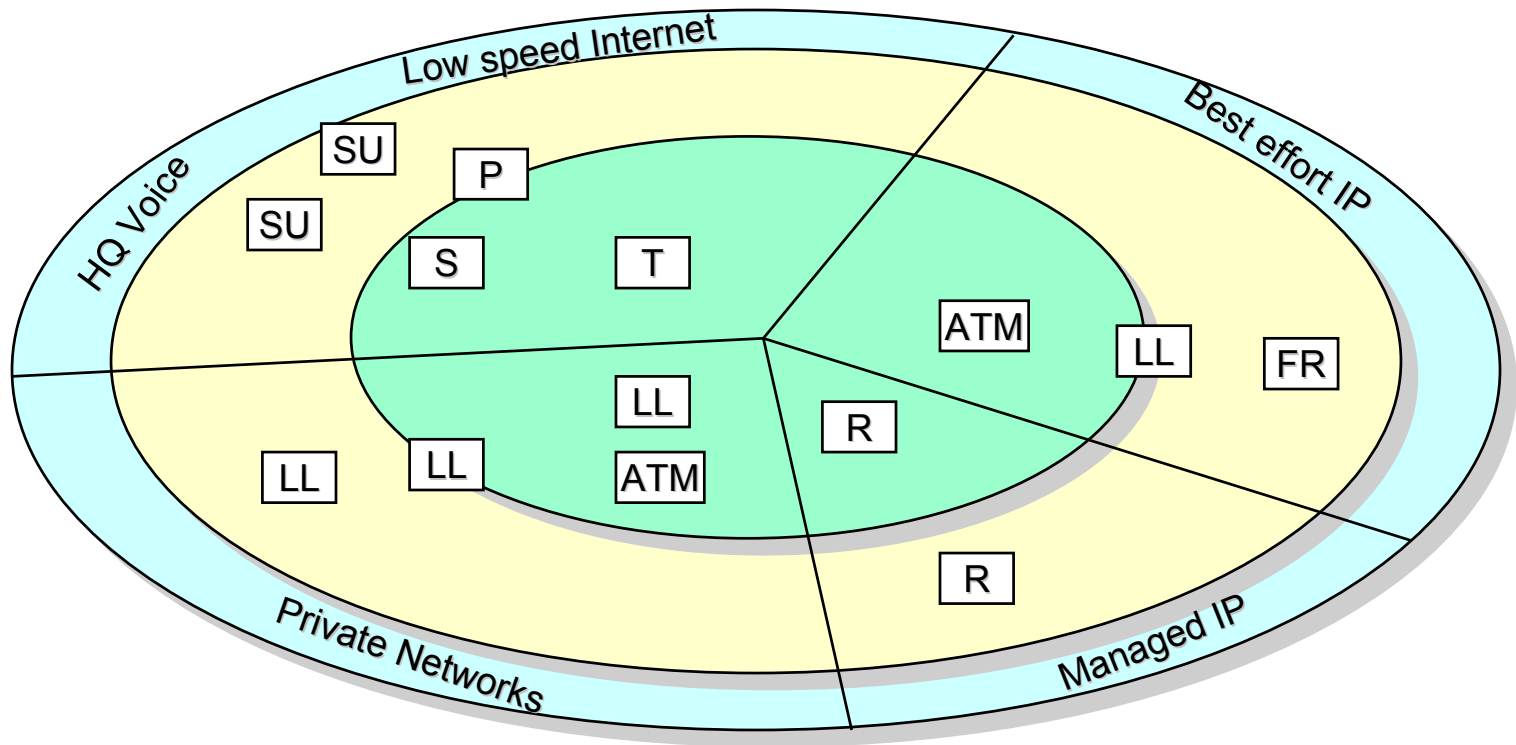
2010

- *Initial Take-up.* First NGS services charge on a pre-paid basis. Simple e-commerce model with basic trust layer. No revenue sharing with access provider. Service dimensioning difficult. Customer has to have separate account with each service.
- *Early adoption.* As NGS services take hold, subscription billing is introduced to increase Service Revenue, and identify different volume based service packages as in current mobile offerings. Access provider gets entry into being a billing-provider. B2B e-commerce required for settlements, but must be developed to cater for small-event volume billing.
- *Steady Growth.* As multi-provider billing becomes more mature, Customers are offered one stop shopping via Access Provider with per-event secure billing. B2B model essential.
- *Maturity.* As services become mature and enter their “cash-cow” phase they can be offered on a flat rate basis to reduce costs and harvest revenues.

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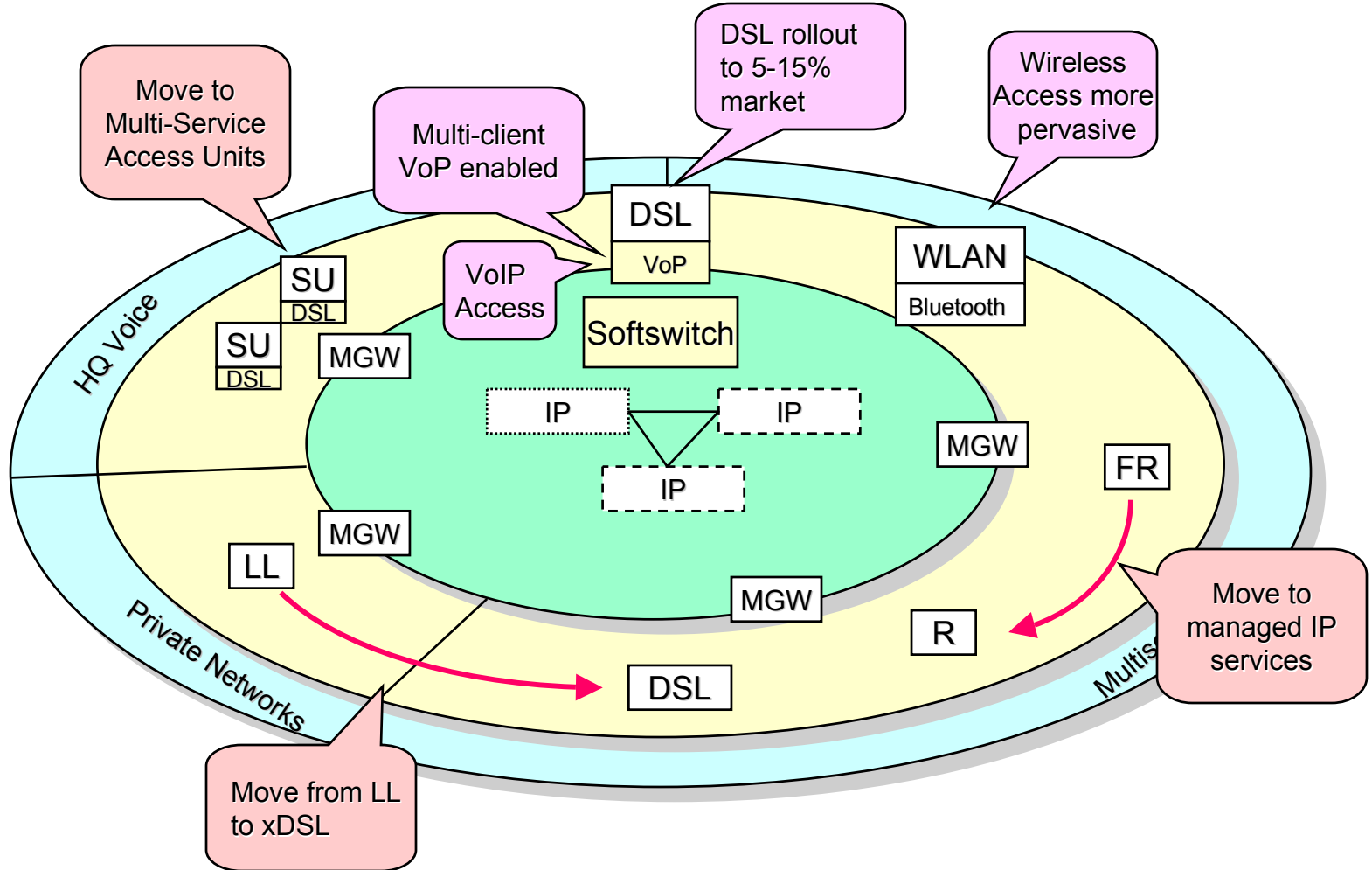
# Next Generation Networks

# Current Eircom Network Architecture.

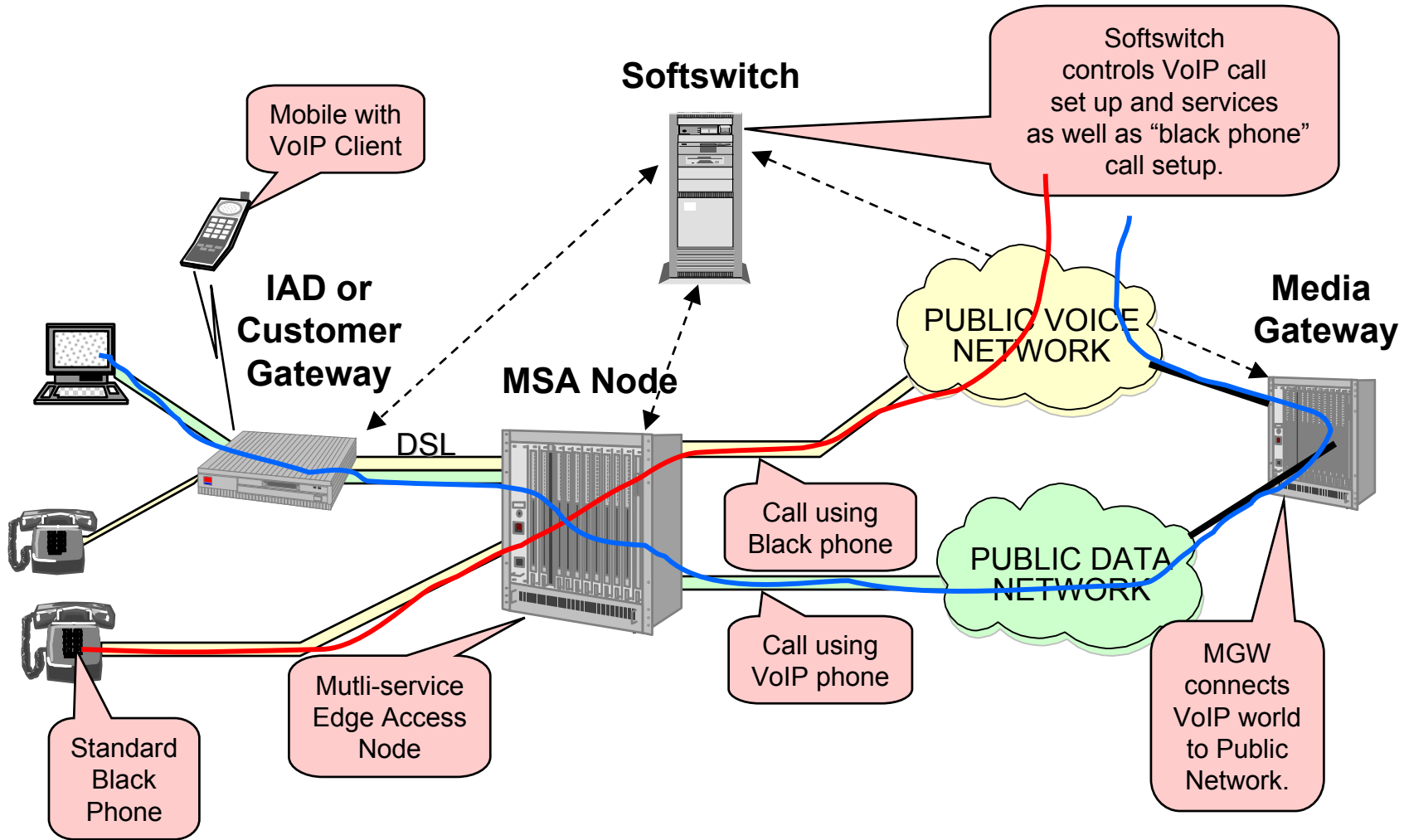


# Evolving Eircom Network Architecture

Technology is enabling new services and pushing towards end to end IP



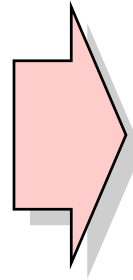
# VoIP...a paradigm shift?



# Conclusions

## Today's Paradigm

- ✿ Voice - main revenue earner.
- ✿ Separate Legacy Networks carry voice and data.
- ✿ More data than voice but data revenue weak.
- ✿ Low speed net access
- ✿ Restricted "buy-online" model.
- ✿ Proprietary multimedia services.



## Tomorrow's Paradigm

- ✿ Data - main revenue earner..VoIP seen as data.
- ✿ NGN networks carry voice and data.
- ✿ 20-30% of Customers NGS capable.
- ✿ Generic High speed access.
- ✿ B2B model established.
- ✿ Standardised multimedia services.

**Thank you for your time and attention!**