FROST & SULLIVAN

Mega Trends: Pre-empt the Future!

Understanding the new scenarios offered by Healthcare and ICT Sectors

4th April 2011

Bologna, Italia

Agenda

Sample of Mega Trends in the ICT Sectors
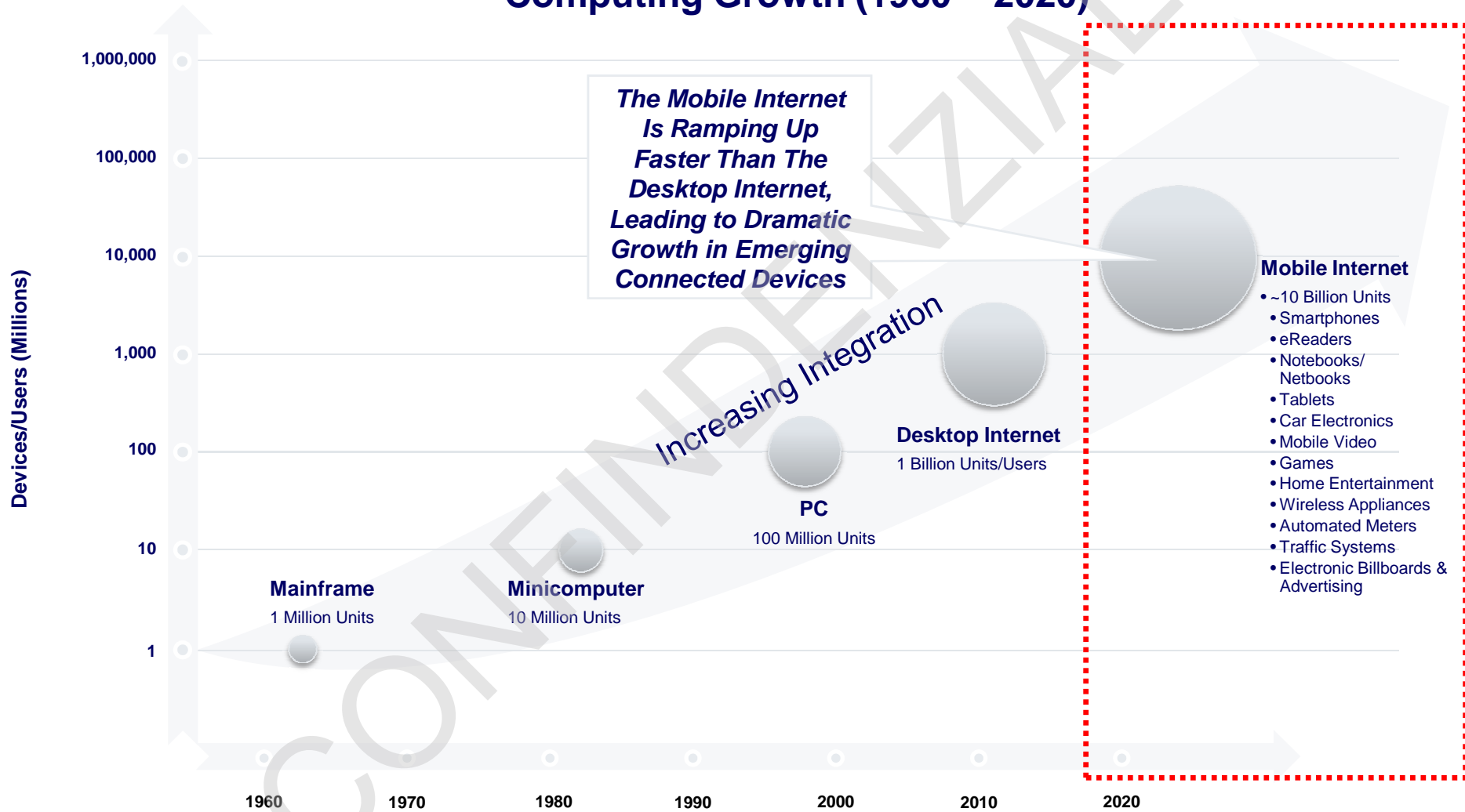
Sample of Mega Trends in the Healthcare Industry

Q&A Session, Contact Details

Anyone, Anywhere, Anytime, Anything will Gain Serious Momentum

	Major Trend	2010	2020
1	Mobile Internet	Smartphones	4G networks will enable next generation of mobile applications, especially mobile video
2	Monetization	Fee-based	Privacy-sensitive location-aware advertising
3	Green IT	Evaluating Green Strategy	Reaping Benefits of Implemented Green Strategy in Networks, Devices & Everything Between
4	Social Networking	Evaluating Effectiveness of Web 2.0	Social Data Intelligence - Innovative Marketing & Sales Strategies & Models
5	End Users Become DMs	Push Technologies to Customers	Push Technology Needs/Wants to Manufacturers
6	Lifestyle	Technologies becoming Fashion Statements	Design is key differentiator For Consumer Products
7	Presence Management	Need to Stay Connected 24/7	Need to Find Privacy
8	Mobility	eCommerce	mCommerce
9	Unified Communications	Integrate voice and web apps to improve communications	Converged networks/apps to deliver true collaboration
10	Video	Telepresence for Enterprise; HD Video Content	Virtualization, cloud computing and other service models help deliver video content to anyone, anywhere, anytime

The Next Major Technology Cycle: The Mobile Internet

Computing Growth (1960 – 2020)

The Mobile Internet Is Ramping Up Faster Than The Desktop Internet, Leading to Dramatic Growth in Emerging Connected Devices

Devices/Users (Millions)

Y-axis: 1,000,000 — 100,000 — 10,000 — 1,000 — 100 — 10 — 1

X-axis: 1960 — 1970 — 1980 — 1990 — 2000 — 2010 — 2020

Increasing Integration

Mainframe
1 Million Units

Minicomputer
10 Million Units

PC
100 Million Units

Desktop Internet
1 Billion Units/Users

Mobile Internet
- ~10 Billion Units
- Smartphones
- eReaders
- Notebooks/Netbooks
- Tablets
- Car Electronics
- Mobile Video
- Games
- Home Entertainment
- Wireless Appliances
- Automated Meters
- Traffic Systems
- Electronic Billboards & Advertising

Global Trends in the Mobile Communication Market

3G Renaissance/ Mobile Broadband

- 3G penetration to reach global sweet spot of 25% in 2010
- More 3G enabled phones were sold last month than 2G
- Leapfrog to LTE much faster than anticipated
- Prepaid mobile broadband expands the addressable market
- Mobile broadband outstrips fixed broadband across markets

Mobile Internet/Computing /Smartphones

- Smartphones + App stores : new discovery mechanism , removes search
- Operators launch fixed rate plans : Singapore , Malaysia, etc
- Iphone largest selling phone in Japan
- New smartphones below $ 200 to expand market
- Niche devices will bridge gap between smartphone and laptops - close to 15% of market

Dumb pipe vs Smartpipe

- Operators getting disintermediated in the value chain like fixed line players
- Launch of operator driven app stores and JIL consortium
- Faster transformation of OSS BSS
- Expansion of operator controlled app store concept .

Efficiency Improvement

- Network efficiency a critical issue -
- Huge pressure to maintain capex to revenue ratio
- Network spend mix changing from coverage to backhaul
- CFO influence on network and IT decisions increasing

Mobility Integrators (MI) to Offer Innovative mobility solutions to complement commuters' inter-modality and multi-modality travel split

Telecom Operators

O2 orange vodafone ...T...

Transport Operators

Rail — DSB

Bus — RATP

Carsharing — connect

Bikes — velib'

Online Mobility Booking Agencies:

Long Distance Mobility

Expedia.co.uk travelocity.co.uk

Short Distance Urban Mobility

ov-chipkaart liftshare.com

Mobility Integrator

The Concept of a Dynamic Transport Solution Integrating Different Modes Under a Single Entity to make Personal Transportation Easy and Simple

MIs will start exploiting the Web 2.0 and Mobile 2.0 Internet service to offer mobility-based applications (apps) on smart phones.

Payment Engine

VISA MasterCard AMERICAN EXPRESS PayPal

Technology Solutions Provider

AMADEUS

Technology Evolution

BlackBerry App World **MOBILE 2.0**

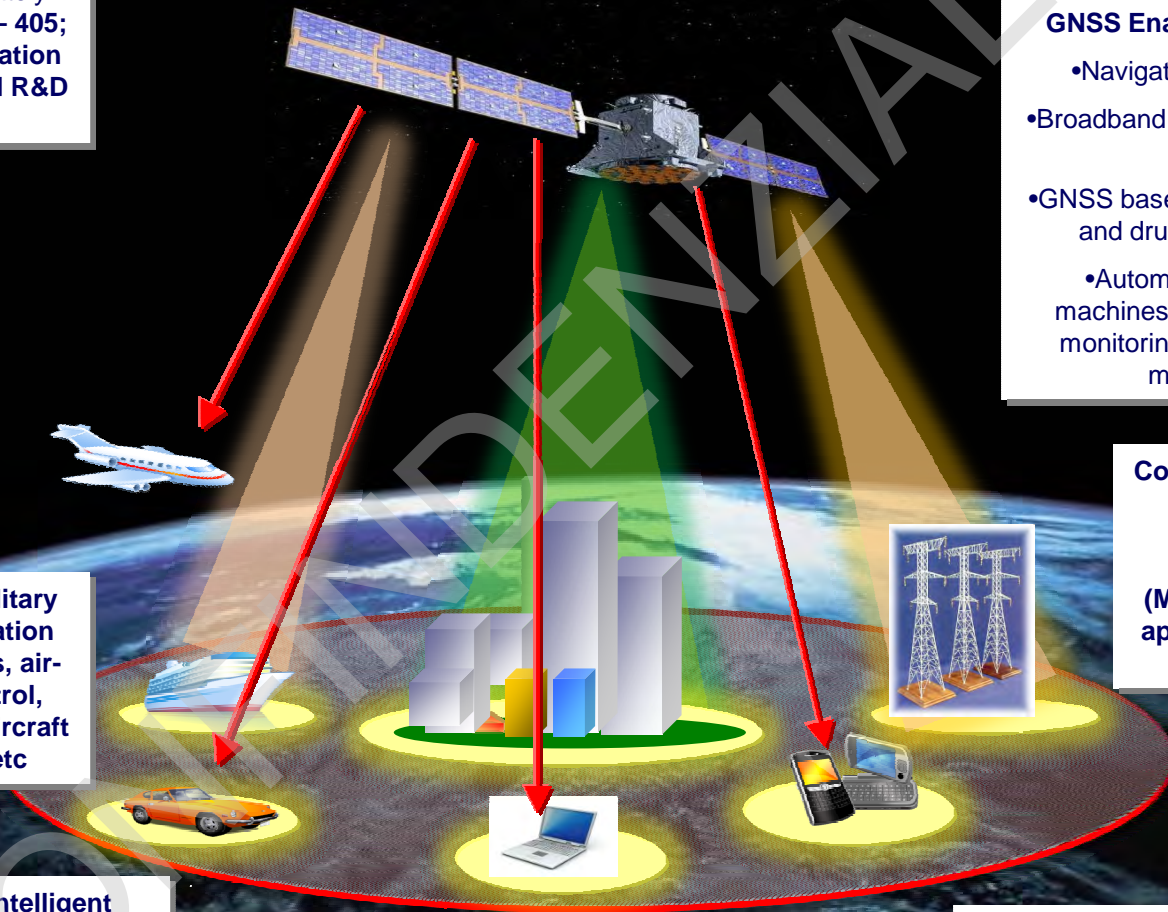NOKIA **WEB 2.0**

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New Satellites Launched By 2020: Over 900 Satellites to Be Launched Globally This Decade Creating Multiple Innovative Applications

By 2020, there will be approximately **927 Satellites (Communication – 405; Earth Observation – 151; Navigation – 85; Reconnaissance – 212 and R&D 75)**

Galileo - intended to provide more precise measurements than GPS or GLONASS (Galileo will be accurate down to the metre range) and will be free and open to everyone.

GNSS Enabled Applications:

•Navigation (Civil, Military)

•Broadband Internet and Wireless Network

•GNSS based medical monitoring and drug delivery system

•Automated guidance of machines, real-time structure monitoring, logistics and site management

Used for Military Communication Applications, air-traffic control, automated aircraft landing, etc

Commercial market will be driven by broadcast; Mobile Satellite Services (MSS); voice and data applications, bundling IPTV

Automobile Navigation and Intelligent Traffic Control Systems: Leading to reduced travel time, reduced fuel consumption, decreasing accidents, and enhanced real-time navigation
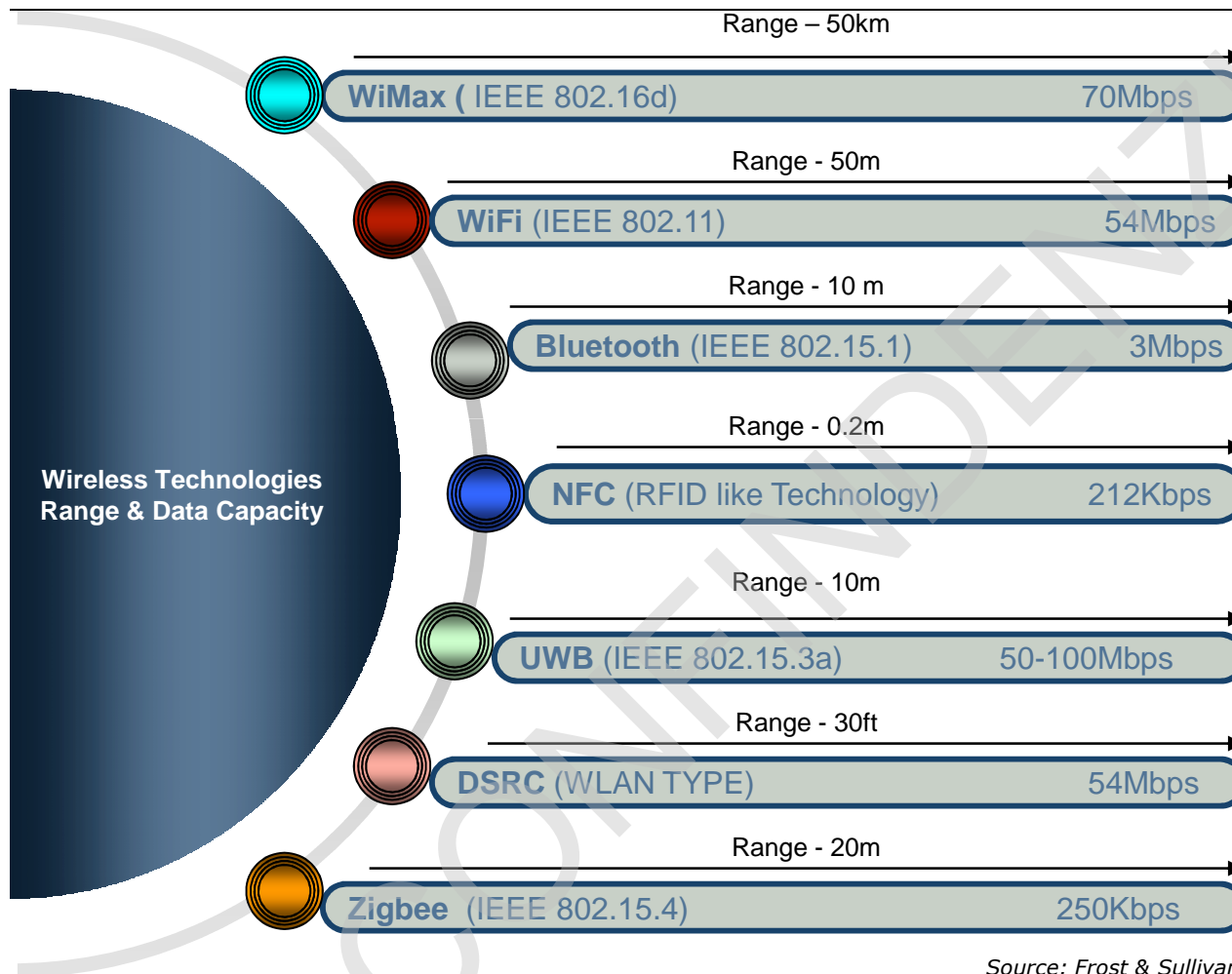
Increase in Broadband Speed and Easy Connectivity to Smart Phones and other Communication Systems

Real-Time Wireless Intelligence in 2020: IT Infrastructure to be Around 80% Wireless on a Single Integrated Platform
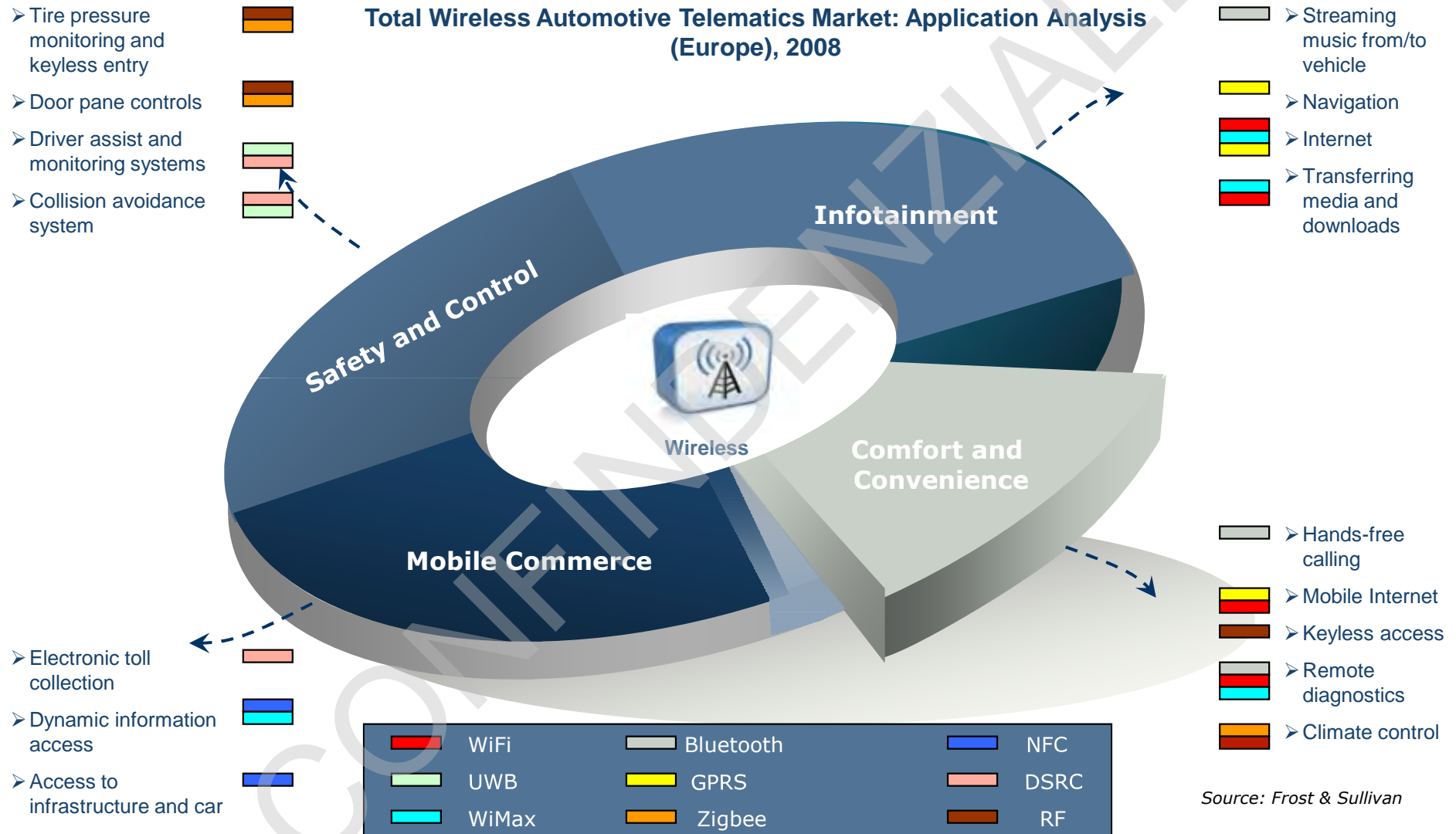
UTILITIES: Smart Meters, Wireless Technology and Sensors enabling Machine to Machine (M2M) communication and monitoring of energy use

AIRPORTS: Free Wi-Fi Access and Real – Time Virtual Monitoring with secure, high-speed, wireless data networking

RAILWAYS: Real-Time Wireless Video Surveillance in railways stations for event detection, preparedness, prevention, protection, response and recovery.

Connectivity on a SINGLE IT Platform

4G Mobile technology (LTE, WiMAX) enabling integration into any wireless platform

CCTV surveillance with built-in Network Card, DVR and LCD Monitor integrated into the wireless platform

NETWORK INTELLIGENCE Managed by A Central Server

HOTSPOTS: City-wide Wi-Fi Network (Eg. Sunnyvale, California) with Hotspots in Cafes, Hotels and other important locations

GPS: Atleast 75% of automobiles installed with GPS equipment enabling intelligent traffic management system.

BUILDINGS: Wireless Building Automation Systems at Homes and Offices Connected to iPhone, Laptop, Car Systems for Easy Control and Communication

SATELLITE TECHNOLOGY (such as GALILEO) to provide navigation for aviation, ground and maritime operations

EMERGENCY SERVICES: Wireless surveillance connecting fire and police forces to Central Server for monitoring, control and command communications

Wireless Technologies to Make Cars Intelligent and Safer

Total Wireless Automotive Telematics Market: Introduction and Overview (Europe), 2008

Wireless Technologies Range & Data Capacity

Range – 50km
WiMax (IEEE 802.16d) — 70Mbps

Range - 50m
WiFi (IEEE 802.11) — 54Mbps

Range - 10 m
Bluetooth (IEEE 802.15.1) — 3Mbps

Range - 0.2m
NFC (RFID like Technology) — 212Kbps

Range - 10m
UWB (IEEE 802.15.3a) — 50-100Mbps

Range - 30ft
DSRC (WLAN TYPE) — 54Mbps

Range - 20m
Zigbee (IEEE 802.15.4) — 250Kbps

Source: Frost & Sullivan

- Vehicle manufacturers and suppliers are continuously investigating new wireless technologies to deploy them in different domains, like **safety and core telematics applications**, within the automotive sector.

- Key objectives of development of new technologies are **personal device connectivity, mobile Internet access to the vehicle, remote monitoring** and diagnostics and enhanced **safety and security of the vehicle.**

- Frost & Sullivan expects the total wireless automotive telematics market to grow steadily from approximately €279.42 million in 2008 to **€889.34 million in 2015** at a compound annual growth rate (CAGR) of 17.99 per cent.

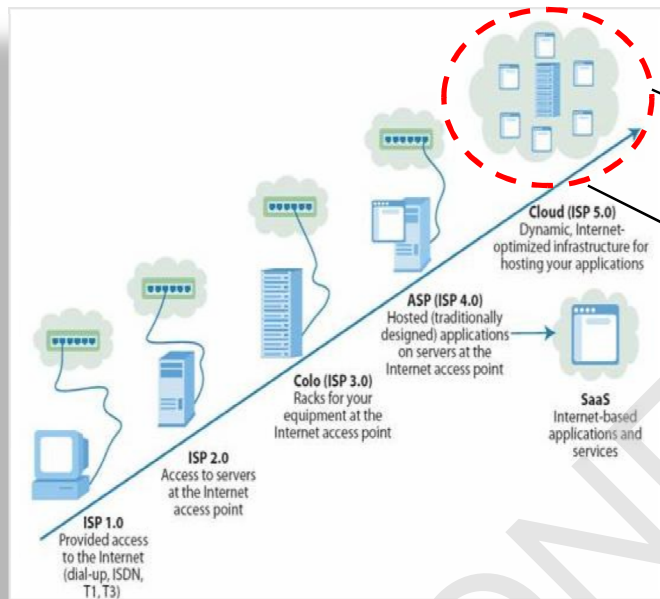# Application Analysis - Bluetooth, Radio Frequency and GPRS Lead on Possible Automotive Applicability

Total Wireless Automotive Telematics Market: Application Analysis (Europe), 2008

- Tire pressure monitoring and keyless entry
- Door pane controls
- Driver assist and monitoring systems
- Collision avoidance system

- Streaming music from/to vehicle
- Navigation
- Internet
- Transferring media and downloads

Safety and Control

Infotainment

Wireless

Comfort and Convenience

Mobile Commerce

- Electronic toll collection
- Dynamic information access
- Access to infrastructure and car

- Hands-free calling
- Mobile Internet
- Keyless access
- Remote diagnostics
- Climate control

Source: Frost & Sullivan

■ WiFi	■ Bluetooth	■ NFC
■ UWB	■ GPRS	■ DSRC
■ WiMax	■ Zigbee	■ RF

Evolution of the Cloud Computing Concept Leading to Virtual Companies

Cloud computing is Internet-based computing, wherein shared resources, software and information are provided to computers and other devices on-demand, like a public utility.

Advent of the "CLOUD"

Cloud (ISP 5.0)
Dynamic, Internet-optimized infrastructure for hosting your applications

ASP (ISP 4.0)
Hosted (traditionally designed) applications on servers at the Internet access point

SaaS
Internet-based applications and services

Colo (ISP 3.0)
Racks for your equipment at the Internet access point

ISP 2.0
Access to servers at the Internet access point

ISP 1.0
Provided access to the Internet (dial-up, ISDN, T1, T3)

Benefits of this "time sharing" style approach include reduced CapEx, shared infrastructure and costs, low management overheads and immediate access to applications.

Functions

Off-line access
Outsource processes
Online storage
Online collaboration
Cloud computing
Platforms
3rd Party integration
Online office
Online resources
Shared calendars

Types

Hybrid
Private/Internal
Public/External
The Cloud
On Premises / Internal
Off Premises / Third Party

Example
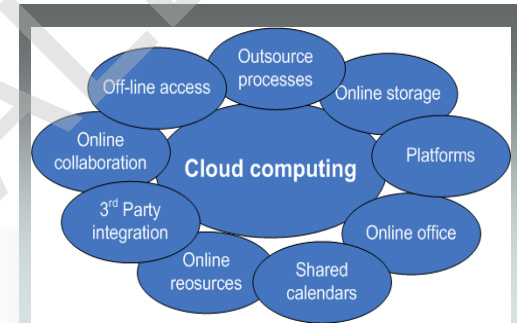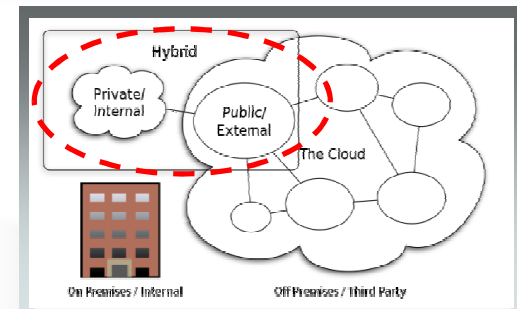
Salesforce
Microsoft
Google
The cloud
Amazon
Zoho
Yahoo
Rackspace
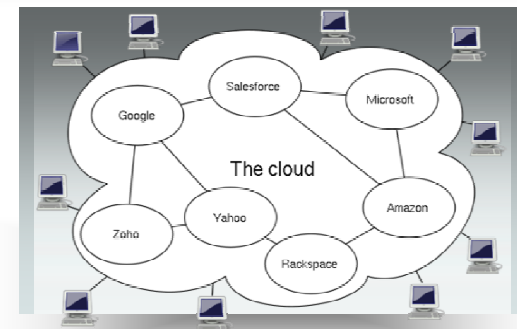
SMART Clouds in 2020: FLEXIBLE CUSTOMIZED Clouds Created By Consolidation Of Different Off-premise HYBRID Cloud Services

SMART Clouds addresses a particular **business (or personal) need for a specific period of time** and can be integrated with existing on-premise IT infrastructure base - seamlessly and securely.

One – Stop Shop Enterprise End-To-End Solutions for a Specific Period of Time

SELF SERVICE IT - Selective Choice of Information (Eg. Retail Clouds)

Saves Downtime of Searching for Specific Business Solutions

GREEN IT : Energy and Cost Saving Benefits as Capacity of Cloud can be **Customized to the Size of Workload**

Availability of Free Large Virtual Infrastructure for Storage and Networking
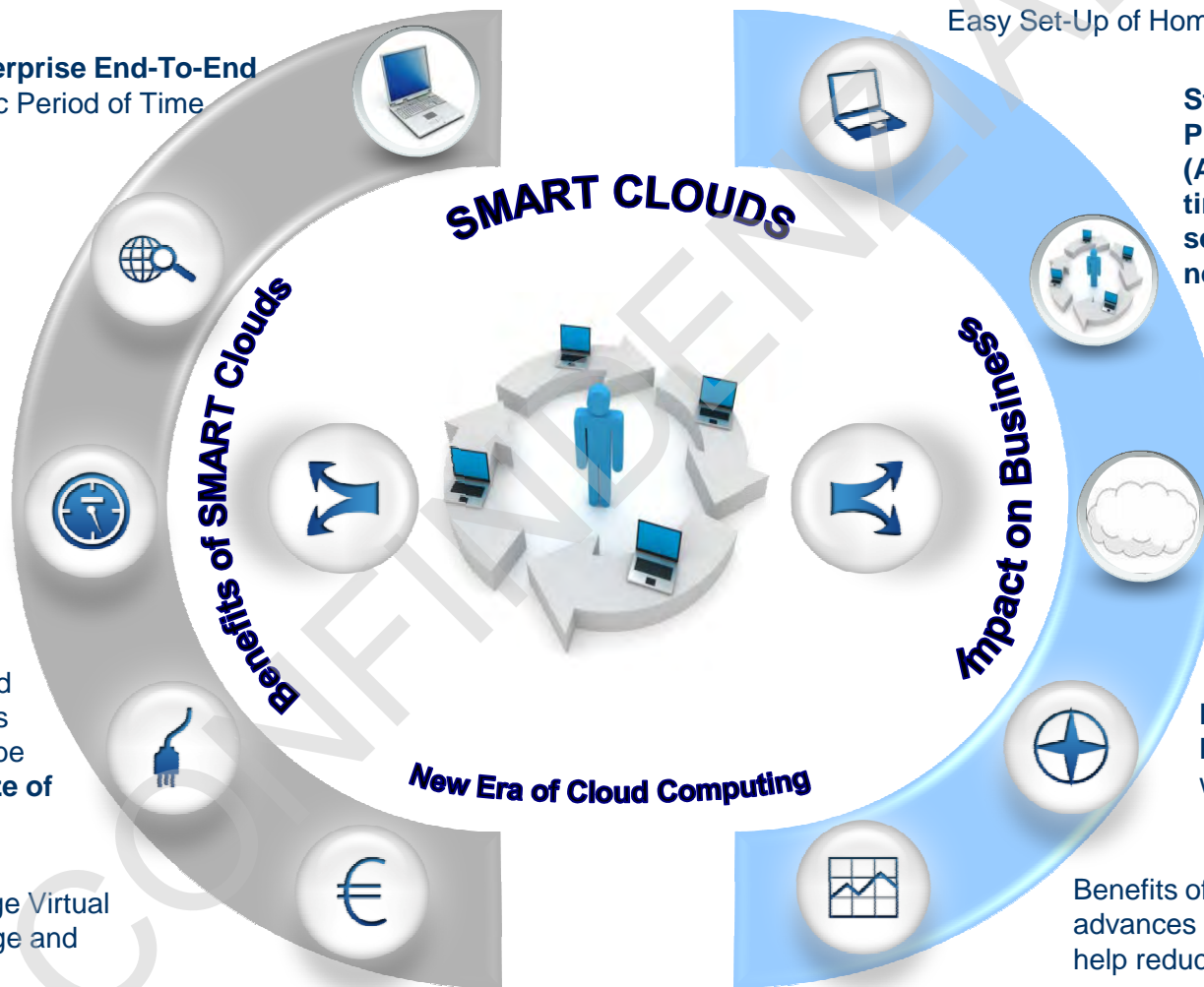
Easy Set-Up of Home Based Offices

Standardized Application Programming Interface (API) allowing for faster time to market of new services, utilizing smart network asset

Integration of Several Hybrid Clouds Enables **Seamless Real-Time Switching** from Public to Private Clouds Leading to Need For High Security Levels

**Easy Integration of On-Premise IT infrastructure** with SMART Clouds

Benefits of flexibility, technology advances and cost savings would help reduce operational expenditure

SMART CLOUDS

Benefits of SMART Clouds

Impact on Business

New Era of Cloud Computing

Virtual World 2020: 3D Simulated Environment for Interaction and Experience Impacting Personal Mobility

Virtual Shopping Allowing Customers to Try Products without leaving their homes

Virtual Surgeries and Medical Training Reducing Mobility for Doctors
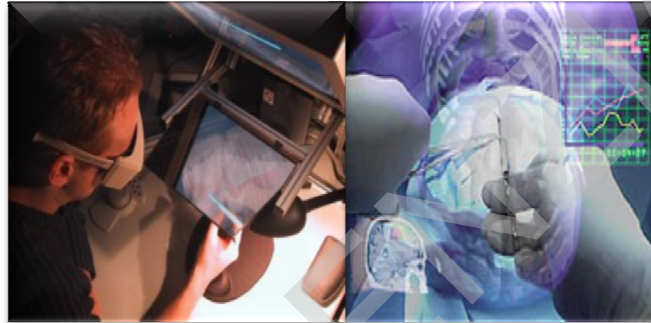
Virtual Business Conferences

Virtual Classes and Laboratories and Daily 3D Field Trips to Different Countries and Planets

Social Networking: 3D Avatars Enabling People to Lead Multiple Lives

Fluid Interfaces: Haptic Technology Enabling Seamless, Gestural, Intuitive and Ambient Interaction Between Physical and Virtual Realms

"Holodecks": F-16 Flight Simulator

Haptic Entertainment Experiences

Intuitive Haptic Gaming Experiences

Wearable Computing: Gestural Interfaces are being developed that allows Humans to Interact and Augment Physical World with Digital Data

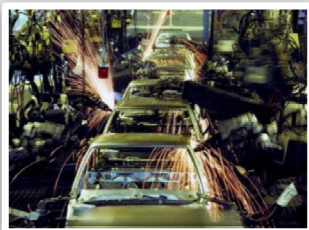Applications of Wearable Computing: Using Hand as a Keypad or Dial Pad

Surface Computers: Browsing of Internet on Any Surface Through Gestures

Source: MIT Media Group, 2010

Artificial Intelligence and Robotics: Future Machine Technology With Multiple Applications

Welding

Drilling

Robots in Space

Medical Robots Performing Low Invasive Surgery

INDUSTRIAL APPLICATIONS

Robotic Applications in 2020

OTHER APPLICATIONS
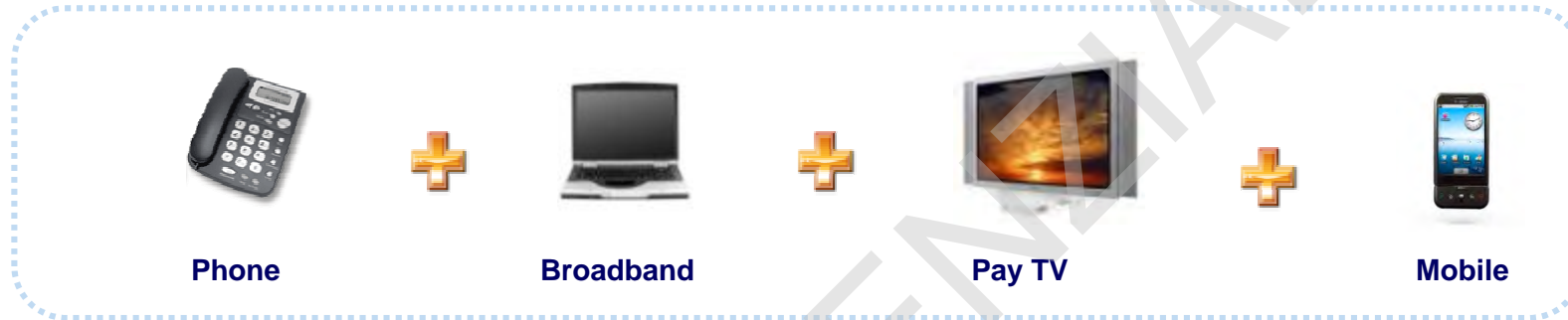
Material Handling

Packaging

Transportation Robots

Military Robots

Convergence

Many operators in APAC are moving towards bundling their services to increase customer retention and increasing their revenues by efficiently utilizing their infrastructure.

Phone + Broadband + Pay TV + Mobile

Quadruple Play

Chunghwa Telecom
About 27% of the revenue is generated by non-mobile customers who access the bundled services.

StarHub
54.4% of consumers use more than one service, 23.7% use all 4 services

PCCW
Over a million users of quadruple services – about 1/7th of HK population

SingTel
About 100k users for bundled plan, increase of 31,000 in last year.

KT
1.3 million IPTV subscribers, 19.5 million fixed line and over 7 million for broadband services in Korea
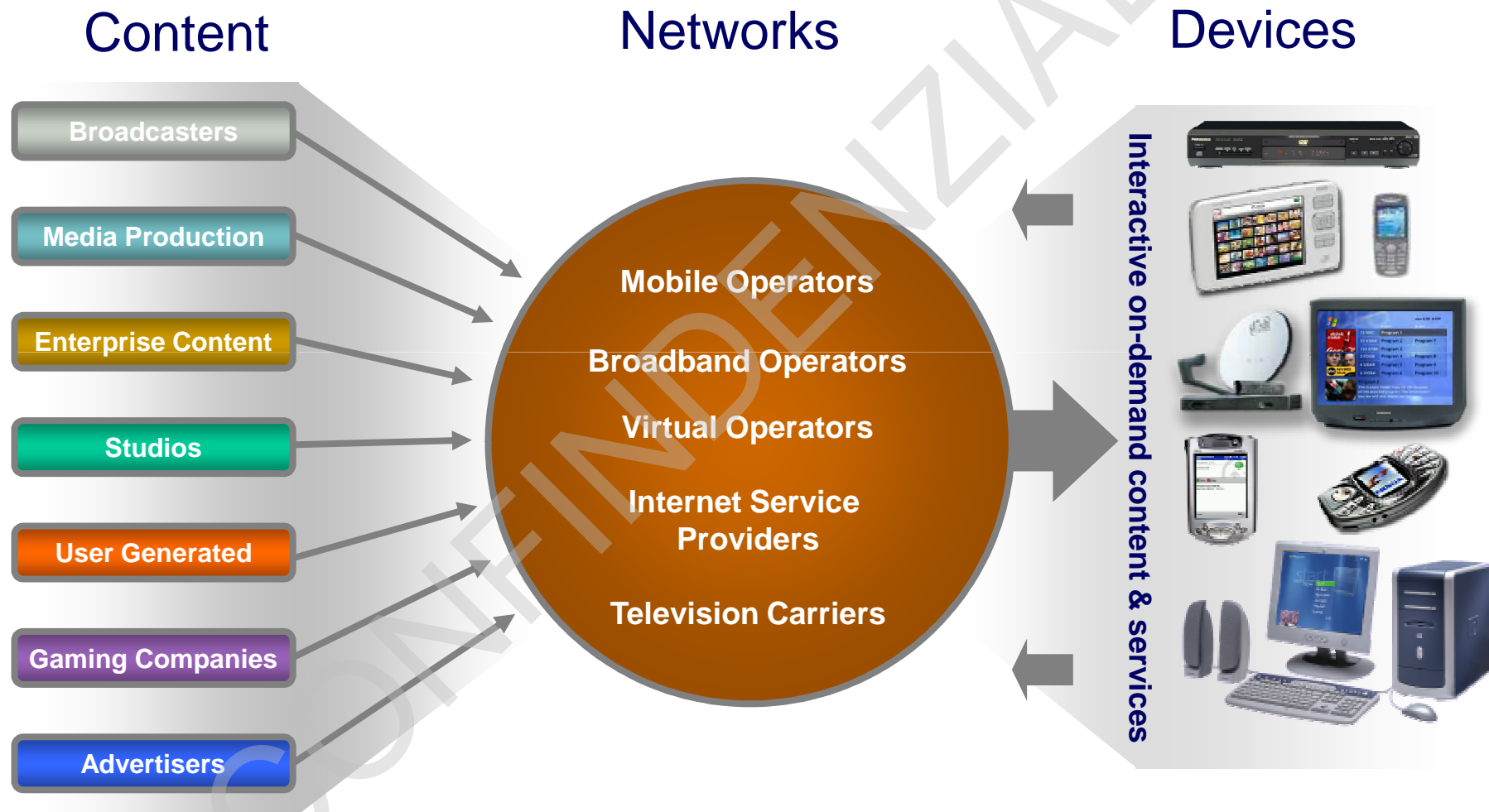
NTT
Hikari-TV surpassed 1 million subscribers in March 2010

Airtel
Over 119 million mobile and over 3 million fixed line customers. Foray into DTH and IPTV in India

Source: Frost & Sullivan.

Convergence and Digital Transformation are Dominating Today's Target Market For Digital Media

Content

- **Broadcasters**
- **Media Production**
- **Enterprise Content**
- **Studios**
- **User Generated**
- **Gaming Companies**
- **Advertisers**

Networks

Mobile Operators

Broadband Operators

Virtual Operators

Internet Service Providers

Television Carriers

Devices

Interactive on-demand content & services

But the Market is Evolving, with Convergence Only a Starting Point

Market Trends

Convergence

- Blurring the lines for service providers, content creators and device makers
- **Need to make applications and content available to customers anytime, anywhere, any device – on demand!**

Peak activity between now and 2015

Consolidation & Partnerships

- Highly fragmented market to be unified either by consolidation or partnerships
- Integration of siloed systems in a workflow

Peak activity 2012 to 2017

Emerging Markets

- Asia Pacific growing rapidly
- Still evolving in terms of adoption of next generation services and products and hence present a growing opportunity

Peak activity 2015 to 2020

Increasing role of Professional Services

- Services present great revenue potential
- System Integration is emerging as a key driver in the market

Agenda

**Sample of Mega Trends in the ICT Sectors**

Sample of Mega Trends in the Healthcare Industry

Q&A Session, Contact Details

Imagine…

…A Bank managed by a Health Administrator

- The teller writes your transactions into a paper ledger

- You are told that you can get your money at only one branch because that's where your records are

- You can use your bank card only in bank machines at your own bank (if at all)

- Your balance is incorrect because the teller's handwriting is illegible

- You are told to wait for two hours while your money is sent by taxi from head office
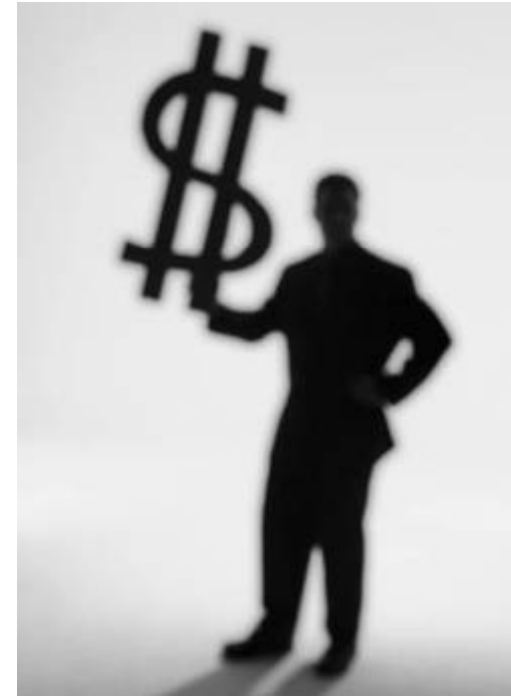
Imagine…

…An Airline managed by a Health Administrator

- **Each flight has its own booking agent that you can contact only by phone**

- **Connecting flights cannot be booked in advance – once you arrive at a stopover point, you wait until there is a seat available on a connecting flight**

- **No confirmed seating – you can be cancelled at any time before the flight**

- **Being handed a ticket that says** **AC429 yyz-yeg dec10 Y 17:45 19:45** **with no further explanation**

- **Told that you cannot have access to your flight itinerary without the pilot's permission**

Imagine…

- **$281 billion in annual purchases hand-written on slips of paper**

  The EU27 prescription drug industry

- **15.7 million service events scheduled manually over the phone**

  Annual appointment booking events in the UK
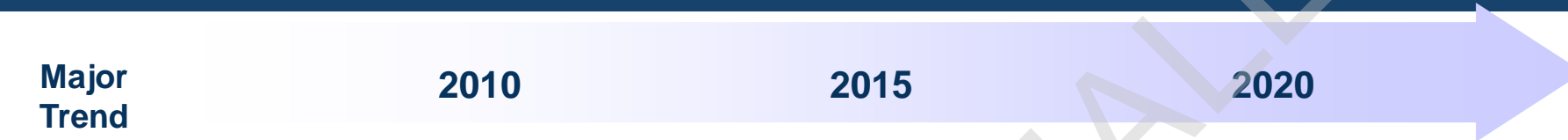
- **An industry that does not increase productivity**

  The healthcare industry in Europe – 9.0% of the economy
  The healthcare industry in US – 16.2% of the economy

- **A service industry that injured 15.0% of its customers through preventable errors**

  Hospital care in the developed world

Patients Become Healthcare Kings And Queens, Medical Communities Become Interconnected While Doctor-Patient Relationship Goes Virtual

	Major Trend	2010	2015	2020
1	Power Patient Generation	Patients gain access to health quality information	Patient centred care Baby Boomer retirement starts	**Patients become healthcare Kings and Queens**
2	Patients Become Customers	Consumerism holistic health and well being	One stop shop Customised products	Home services
3	Prevention Before Cure	Early treatment	Implementation of IT	Precise therapy becomes reality
4	Personalised Healthcare	Genetic testing Targeted clinical trials	**Information based medicine** Wellness care Major diseases understood at molecular level	Presymptomatic diagnostics & treatments
5	Healthcare Globe Trotters	Immediate Treatment abroad becomes an option	**"medical tourism" crosses the US$2 billion mark**	Private companies invest in facilities and services abroad
6	Smarter Drugs	Non-invasive delivery	Drug cocktails will enhance productivity, memory, and physical performance	
7	Hospitals Go Virtual	All departments/buildings within hospitals are connected	Medical communities (1 , 2 care) become interconnected	Regional/Country-wide connectivity
8	Innovation vs. Knowledge	War for medical talent	Baby Boomer retirement starts	Medical professionals keep up with knowledge growth
9	Devices Become Monitors	Disease management	Remote patient monitoring	**Self-monitoring**
10	CyberDocs	**Virtual face to face doctor- patient relationship**	Perform routine diagnostics with predictive precision	Cheaper care available to more people in need

Healthcare Is Challenged By Three Interlocking Crises That Make Present Healthcare Systems Unsustainable

❑ Healthcare is challenged by three interlocking crises that make present healthcare systems unsustainable:
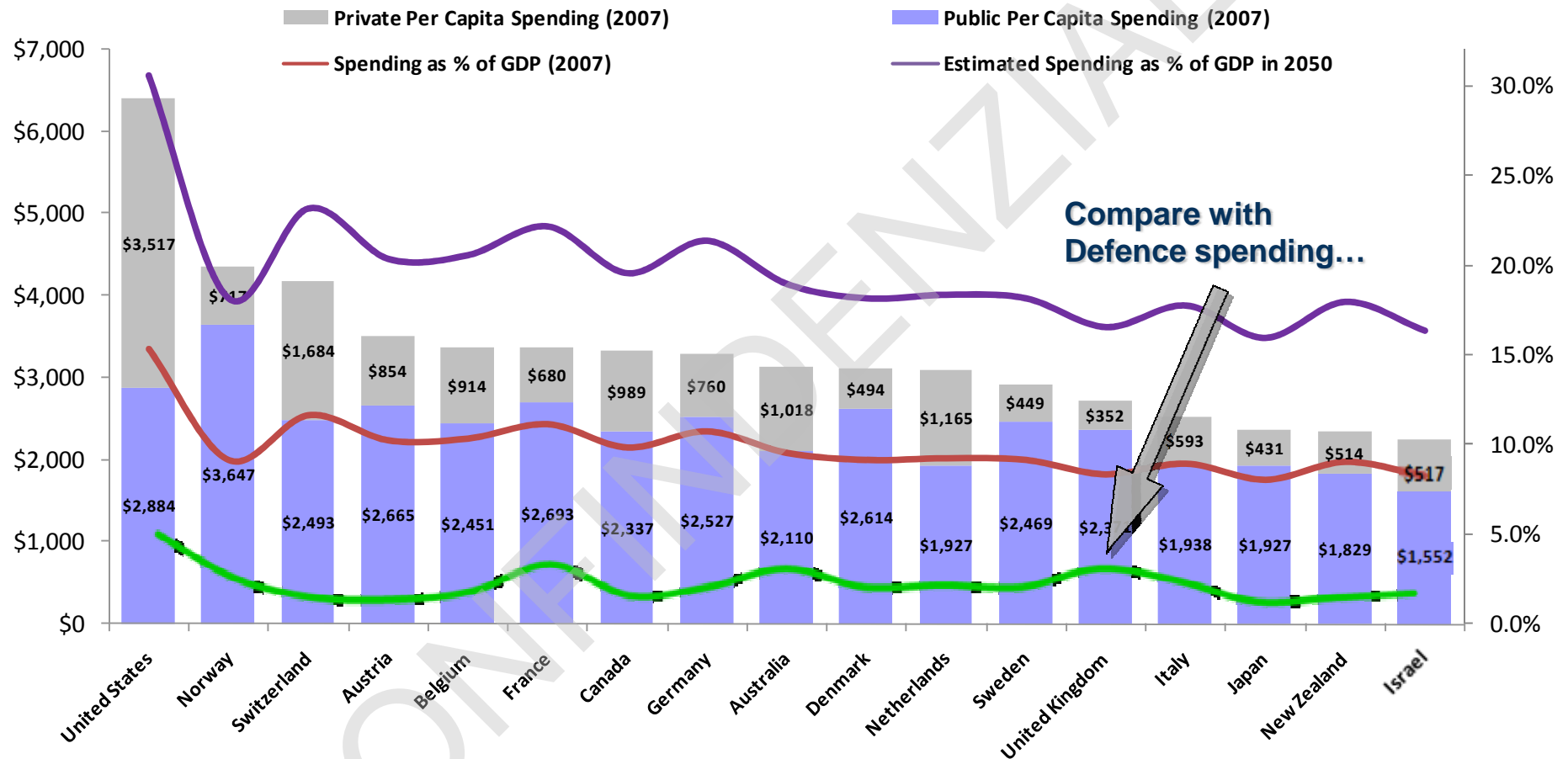
- ☑ **Rising costs**
- ☑ **Changing demographics**
- ☑ **Quality**

Cost

Demographics
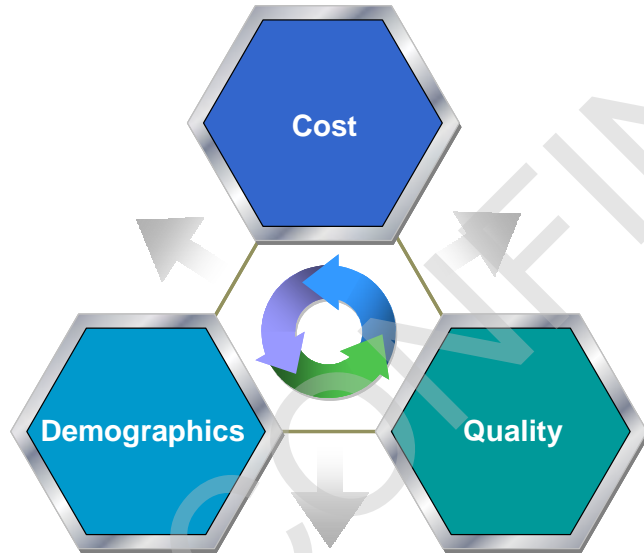
Quality
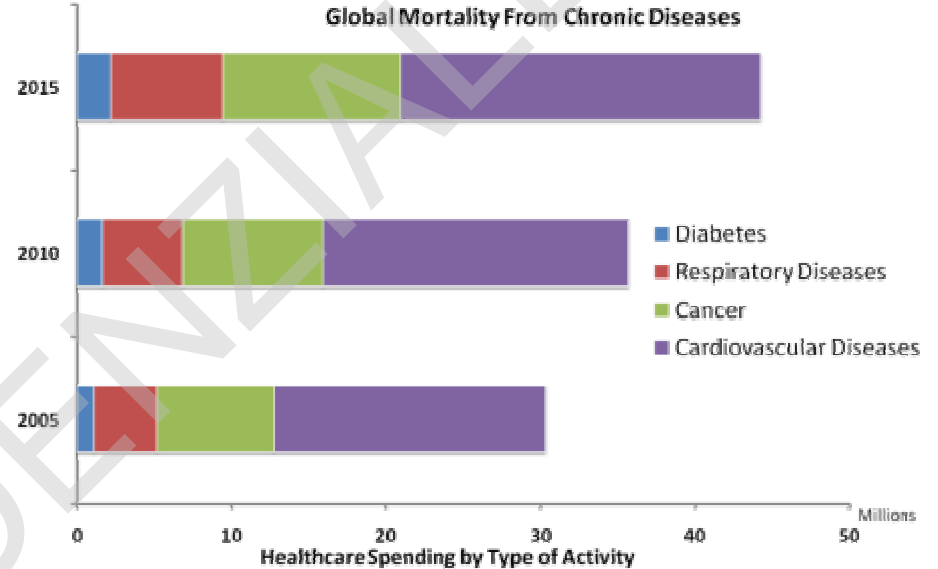
The Size of the Problem – Quality

- ❑ **15%** of patients admitted to hospital suffer an adverse event.

- ❑ **8%** of adverse events result in death.

- ❑ **6%** of adverse events result in permanent disability.

- ❑ **10-20%** of all adverse events is caused by medication errors.

- ❑ **10-15%** of hospital admissions occur because providers do not have access to previous care records.

- ❑ **20%** of laboratory tests are requested because the results of previous investigations are not accessible.

If Current Trends Hold, By 2050 Health Care Spending Will Almost Double Claiming 20% – 30% Of GDP For Some Economies

Legend:
- Private Per Capita Spending (2007)
- Public Per Capita Spending (2007)
- Spending as % of GDP (2007)
- Estimated Spending as % of GDP in 2050

Compare with Defence spending…

Countries: United States, Norway, Switzerland, Austria, Belgium, France, Canada, Germany, Australia, Denmark, Netherlands, Sweden, United Kingdom, Italy, Japan, New Zealand, Israel

Private values: $3,517 / $717 / $1,684 / $854 / $914 / $680 / $989 / $760 / $1,018 / $494 / $1,165 / $449 / $352 / $593 / $431 / $514 / $517

Public values: $2,884 / $3,647 / $2,493 / $2,665 / $2,451 / $2,693 / $2,337 / $2,527 / $2,110 / $2,614 / $1,927 / $2,469 / $2,3xx / $1,938 / $1,927 / $1,829 / $1,552

- ☐ In almost all countries worldwide, per capita healthcare spending is rising faster than per capita income.

- ☐ No country can spend an ever-rising share of its output on health care, indefinitely. Spending growth must eventually fall in line with growth in per capita income.

The Balance Between Young And Old Is Shifting. Ageing Related And Chronic Diseases, Are Becoming Significant. More People Living With Multiple Long Term Illness And Conditions

Population aged 60 or over, (world) — Proportion of population aged 60 or over, (world)

Global Mortality From Chronic Diseases

- Diabetes
- Respiratory Diseases
- Cancer
- Cardiovascular Diseases

Healthcare Spending by Type of Activity
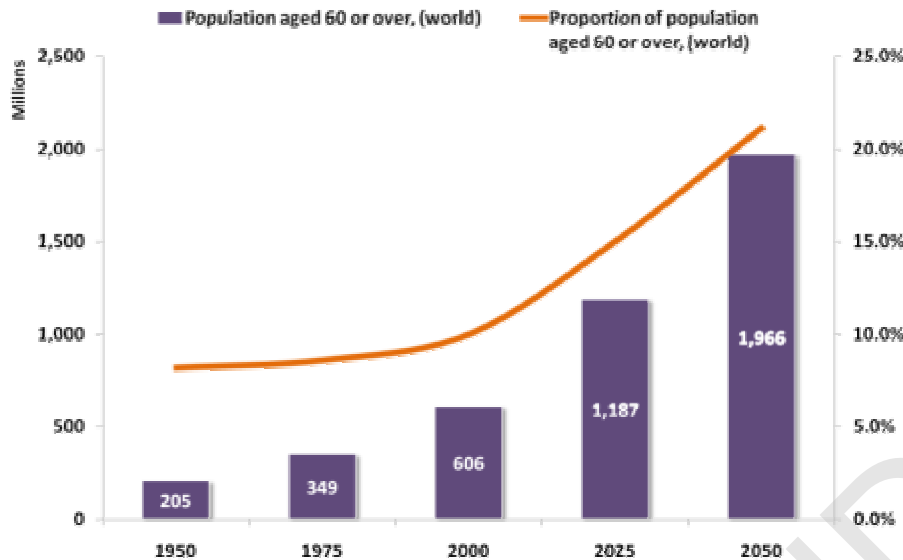
- ❑ In 2000, 10% (606 million) of the global population was aged 60+. By 2050 this will be more than 21% (2 billion).

- ❑ **People aged 60+ utilise 3-5 times more healthcare services than younger people.**

- ❑ 75% of people aged 60+ have one chronic condition, while 50% have two or more chronic conditions.

- ❑ **Chronic diseases account for more than 60% of all health care spending.**

- ❑ **Health economics dictate a shift in spending –** away from treating and towards predicting, diagnosing and monitoring.
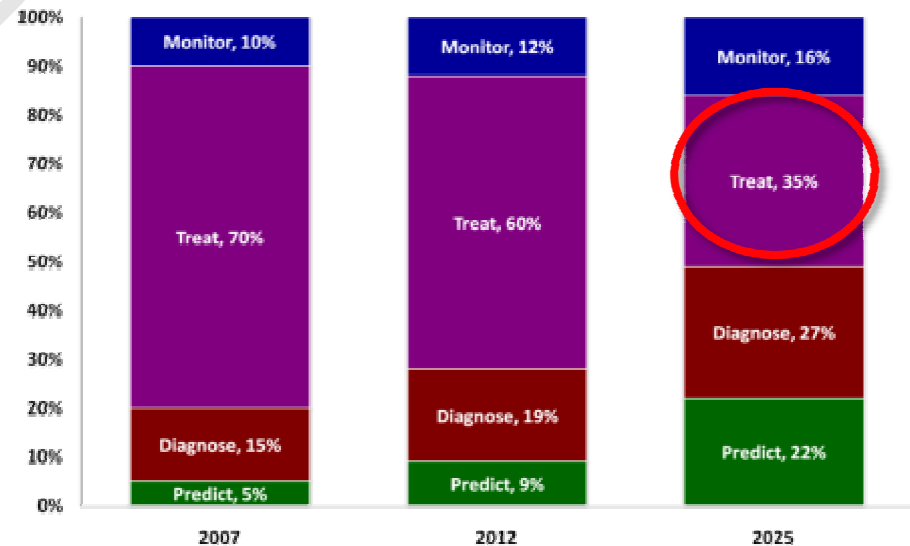
Consumer Experiences In Other Markets Affecting Expectations From Healthcare

Greater variety of providers, products and services e.g. expensive health plans and alternative medicine services

Power patients have increased access to computers and information through multiple channels to seek and analyse health information

Retailing & Finance

- Customer service
- Comparison shopping
- Self-service
- Special offers

Healthcare

Manufacturing & Distribution

- Faster time to market
- One stop shop
- Anytime anywhere care
- Supply chain integration

Entertainment & Media

- Customised products
- Home services

PREVENTION AND EARLY DETECTION

FAMILY AND COMMUNITY SERVICES

PRIMARY AND SPECIALTY CARE

PHARMACES

BEHAVIORAL HEALTH CARE

EMERGENCY CARE

HOSPITAL CARE

REHABILITATION

HOME CARE

END-OF-LIFE CARE

LONG-TERM CARE

Freedom to make own decisions
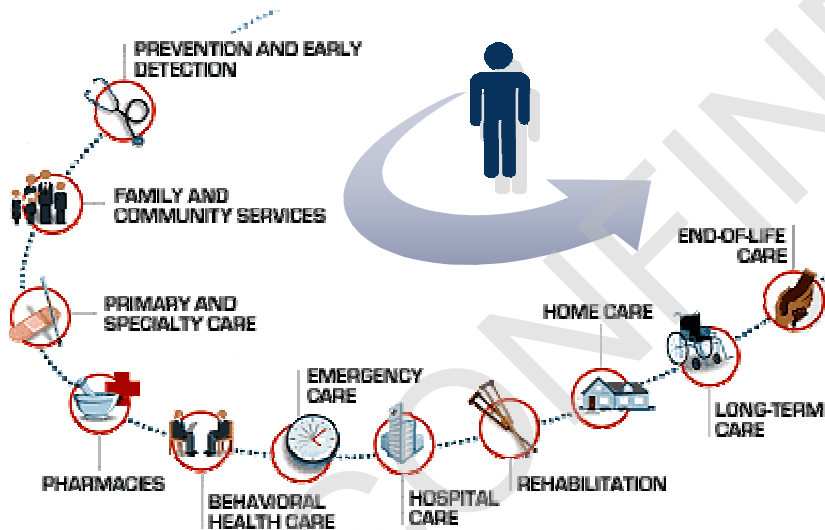
Health care that is customised to monitor, diagnose, educate, and intervene regardless of location or time-will be common.

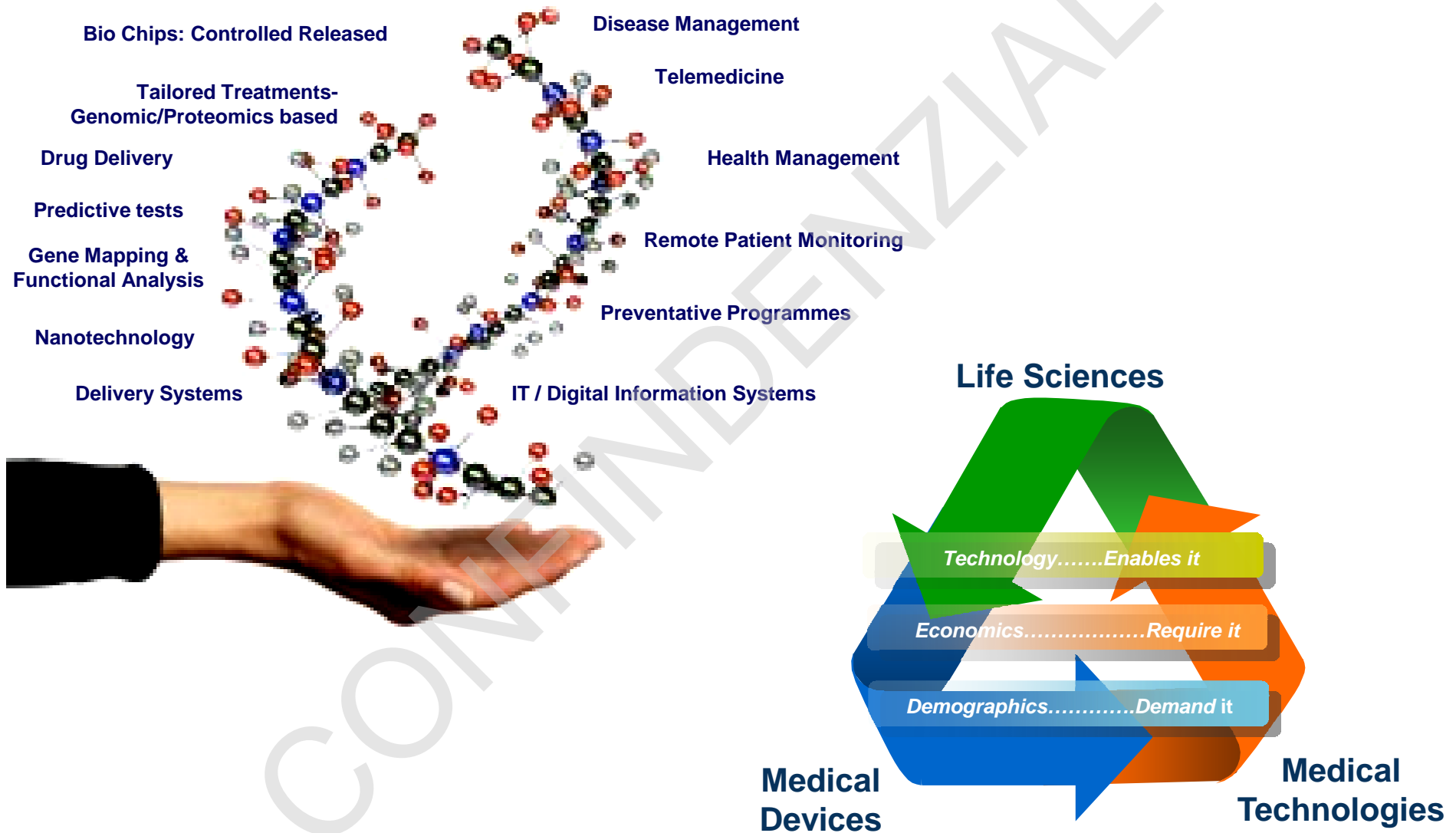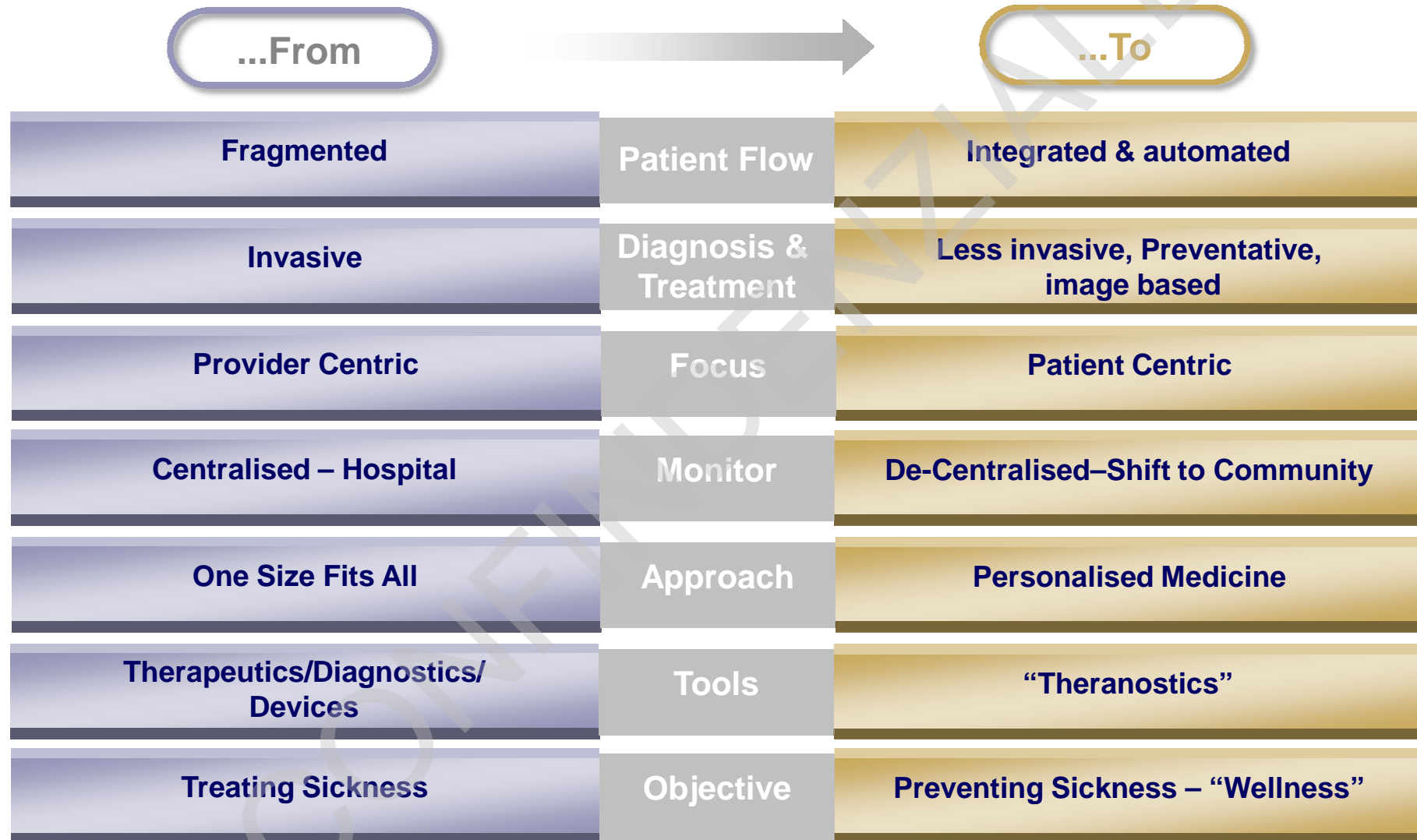# Convergence In Healthcare Enables Personalisation, Targeted Medicines, New Drug Delivery Mechanisms, Virtual Patient Monitoring Tools, Allowing A Preventative Approach To Healthcare

Bio Chips: Controlled Released

Tailored Treatments- Genomic/Proteomics based

Drug Delivery

Predictive tests

Gene Mapping & Functional Analysis

Nanotechnology

Delivery Systems

Disease Management

Telemedicine

Health Management

Remote Patient Monitoring

Preventative Programmes

IT / Digital Information Systems

Life Sciences

Technology.......Enables it

Economics.................Require it

Demographics............Demand it

Medical Devices

Medical Technologies

A Modern Healthcare System Is On The Horizon Demanding A Healthcare Paradigm Shift

...From → **...To**

...From		...To
Fragmented	Patient Flow	Integrated & automated
Invasive	Diagnosis & Treatment	Less invasive, Preventative, image based
Provider Centric	Focus	Patient Centric
Centralised – Hospital	Monitor	De-Centralised–Shift to Community
One Size Fits All	Approach	Personalised Medicine
Therapeutics/Diagnostics/ Devices	Tools	"Theranostics"
Treating Sickness	Objective	Preventing Sickness – "Wellness"

Shifting the Health Focus of the System

Prevention/Wellness

Disease/Care Management

Size of Impacted Population

- Goal: Keep People Healthy Longer
- Goal: Manage or Mitigate Risk
- Goal: Diagnose and Reduce Treatment Delay
- Goal: Move to Self-Managed
- Goal: Manage
- Goal: Informed Decisions

| Healthy/ "Worried Well" | "At Risk" | Undiagnosed | Chronically Ill Managed | Chronically Ill Unmanaged | End of Life |

Continuum of Care

✓ Early identification and prevention

✓ Access to new forms of care delivery to improve patient knowledge, self-help and health

✓ Connection to benefits design to increase coverage for those services which prevent disease and improve health over long term

✓ Reducing administrative and clinical waste

Threats Arise From Unconventional Players Outside The Traditional Healthcare Boundary

Agriculture & Food Companies

Biotech is the changing face of agriculture. Biotech crops were planted in 18 countries in 2004. By 2010, it is projected that 15 million farmers will grow genetically modified crops on up to 375 million acres in 30 countries.

Chemical Companies

2007:Roche and Toyama Chemical enter licensing agreement to develop potential breakthrough drug to treat rheumatoid arthritis

Consumer Product Companies

2007 : SUPERMARKETS in the UK are increasingly becoming one-stop-shops for everything by branching out into healthcare, with everything from in-store pharmacies to blood tests, blood pressure checks and health checks on your lungs.

Employers & Government

2007 : Integrated Healthcare Management in the US has been launched as the systematic application of processes and shared information to optimise the coordination of benefits and care for the healthcare consumer

Healthcare Companies
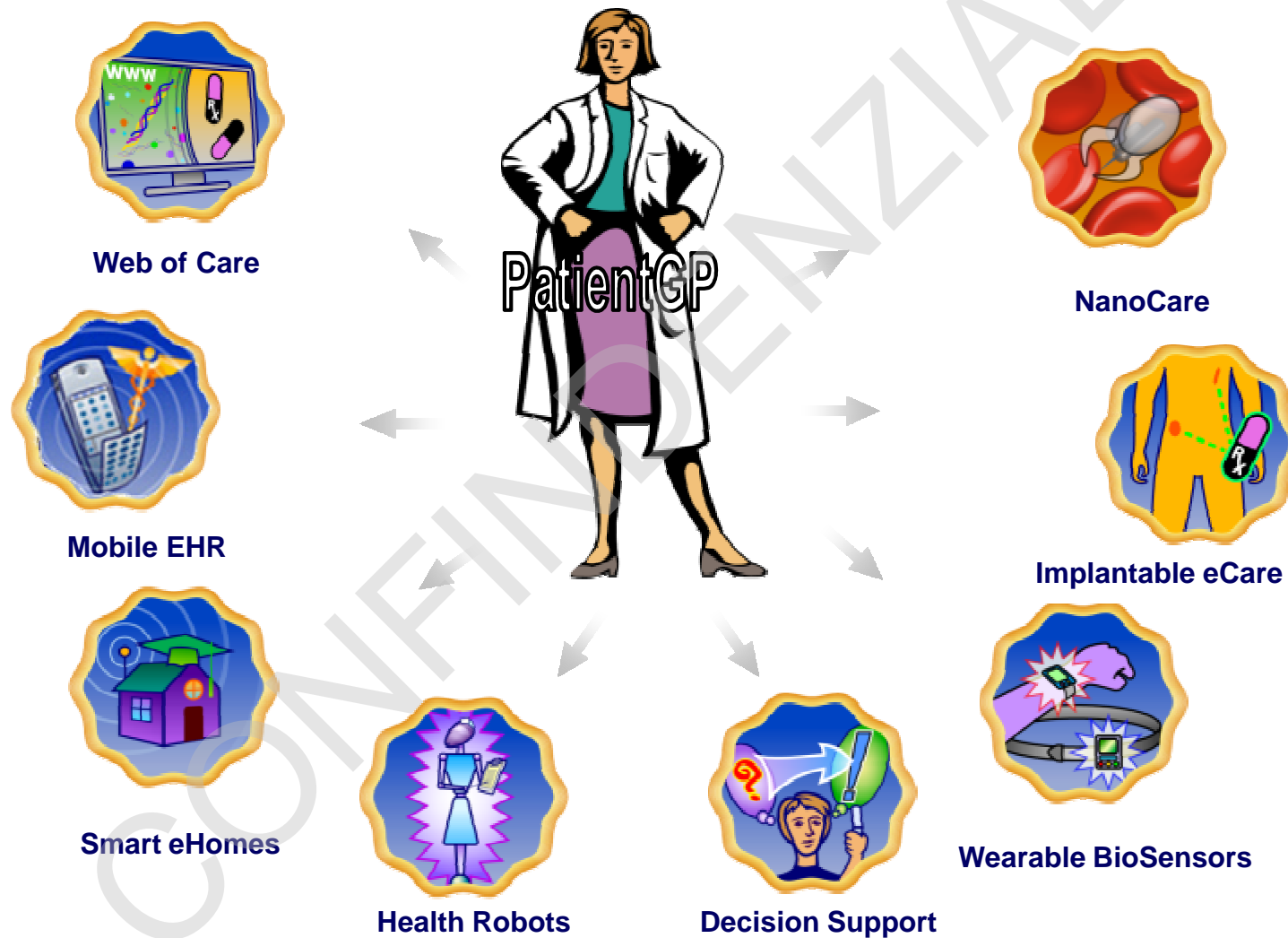(Devices, Pharma, Biotech, Diagnostics, IT)
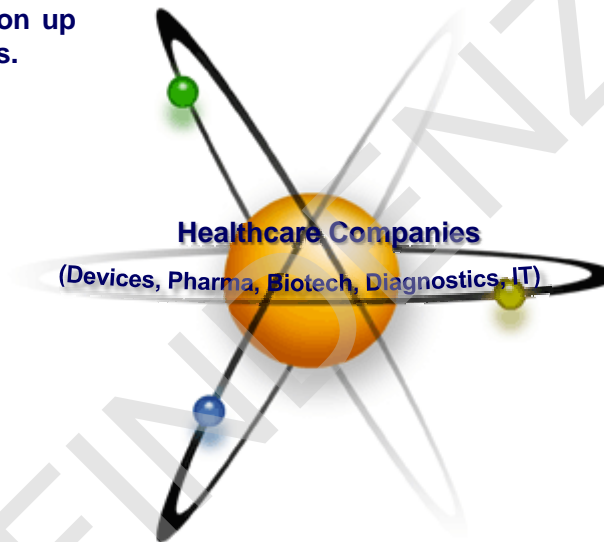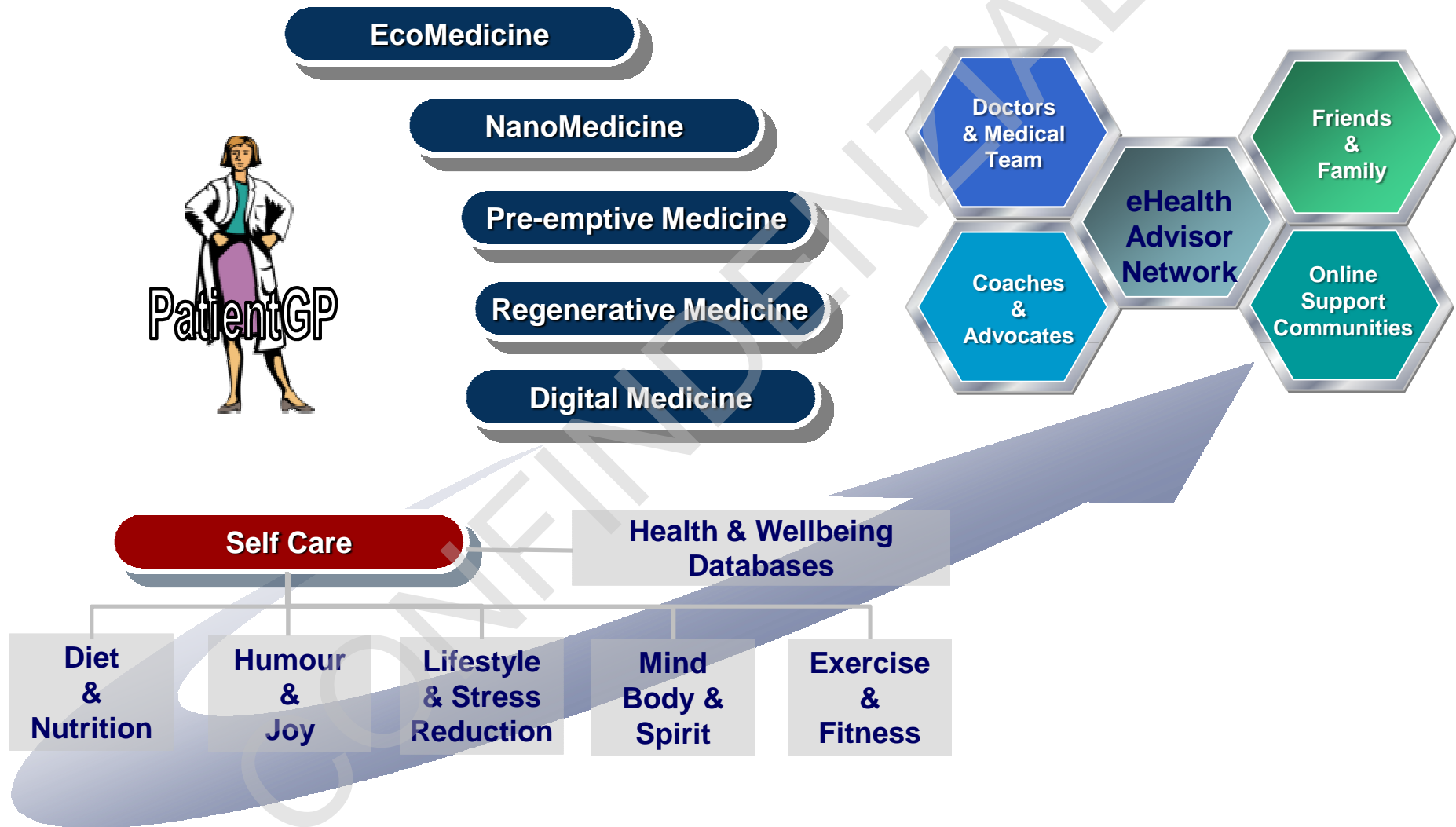
Telecommunication Companies

2008: Virgin Group launched a new healthcare network. The first of six "one-stop shops" clinics will offer extra NHS and private services including dentistry, screening, a pharmacy and complementary therapies alongside GP practices. Ultimately, offering wider options for patients.

2007 : Orange launches "Connected Hospital", its first e-healthcare offering designed to improve patient comfort and care quality
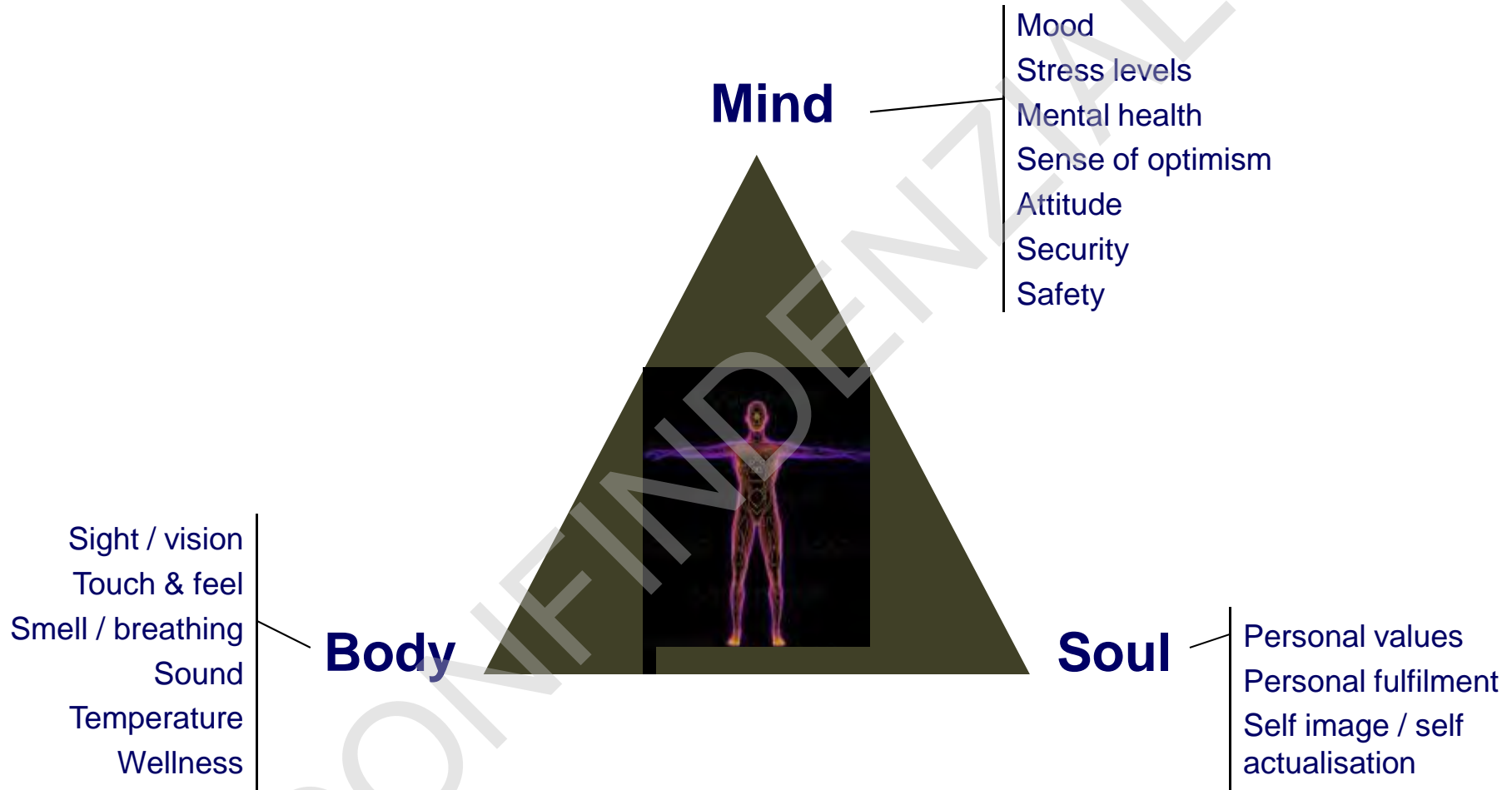
A Look At The Future: Patient Centric Health & Wellness Care

Web of Care

Mobile EHR

Smart eHomes

Health Robots

PatientGP

Decision Support

NanoCare

Implantable eCare

Wearable BioSensors

A Look At The Future: Patient Centric Health & Wellness Care

PatientGP

EcoMedicine

NanoMedicine

Pre-emptive Medicine

Regenerative Medicine

Digital Medicine

Doctors & Medical Team

Coaches & Advocates

eHealth Advisor Network

Friends & Family

Online Support Communities

Self Care

Health & Wellbeing Databases

Diet & Nutrition
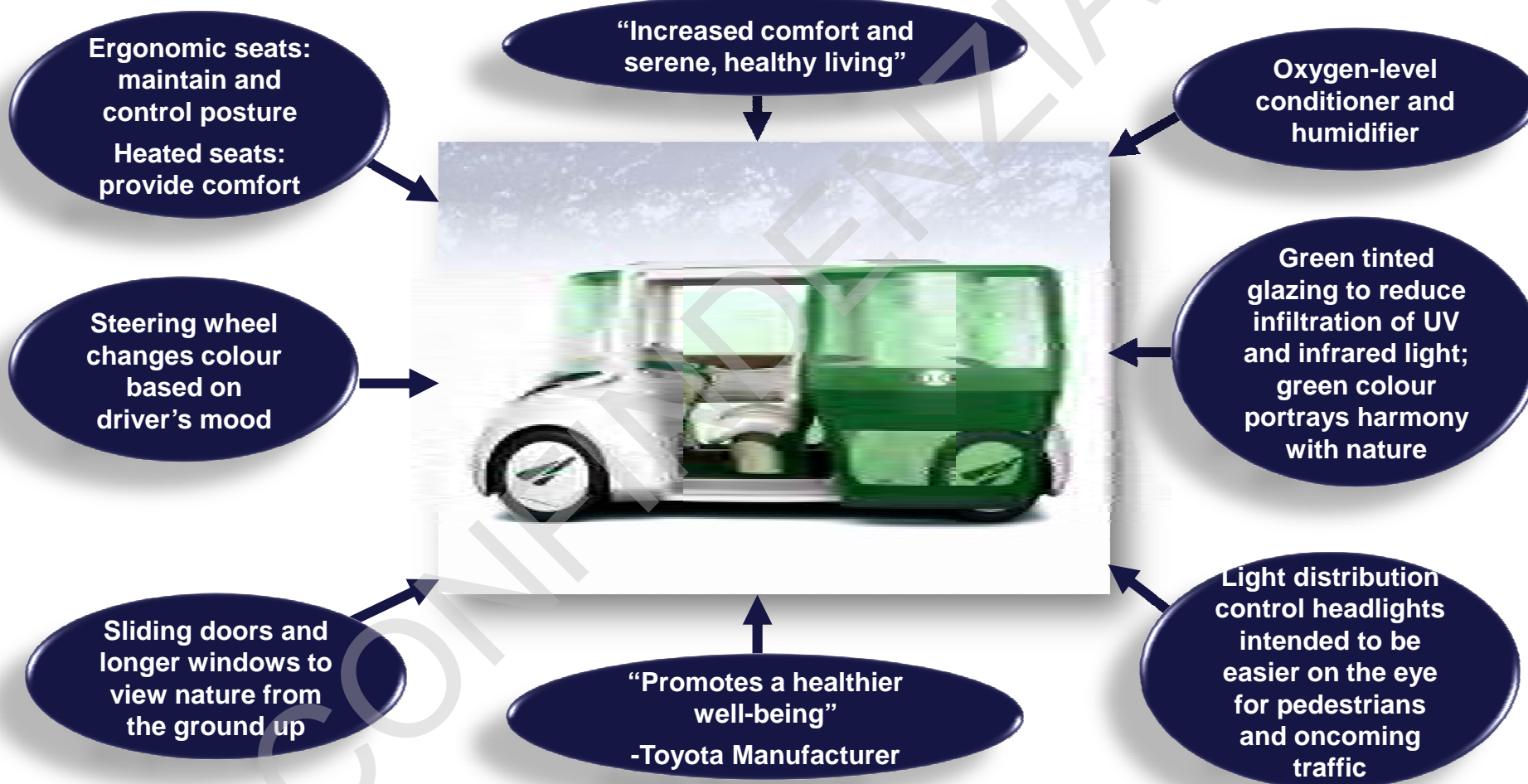
Humour & Joy

Lifestyle & Stress Reduction

Mind Body & Spirit

Exercise & Fitness

The 3 Cornerstones - The Body, Mind and Soul - Contribute to Humans Definition of Health, Wellness and Well Being

Mind

- Mood
- Stress levels
- Mental health
- Sense of optimism
- Attitude
- Security
- Safety

Body

- Sight / vision
- Touch & feel
- Smell / breathing
- Sound
- Temperature
- Wellness

Soul

- Personal values
- Personal fulfilment
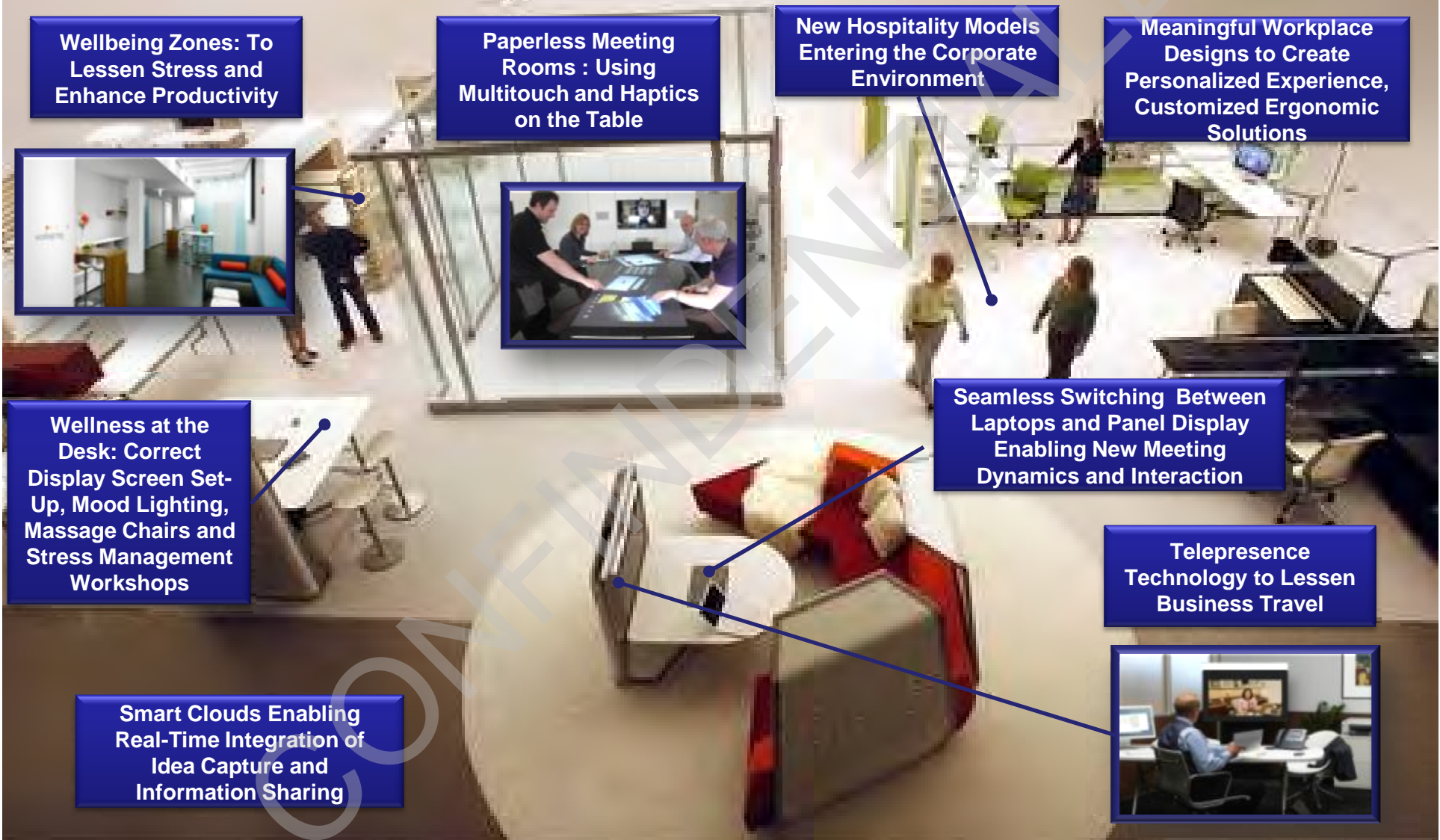- Self image / self actualisation

Is Health Wellness and Wellbeing In Cars A Myth Or A Reality?

At the Tokyo Auto Show running from October 26 to November 11, Toyota unveiled the 2007 RiN promoted as a Healthy Living vehicle designed to make its' driver feel at ease contributing to a healthier mental state and well being.
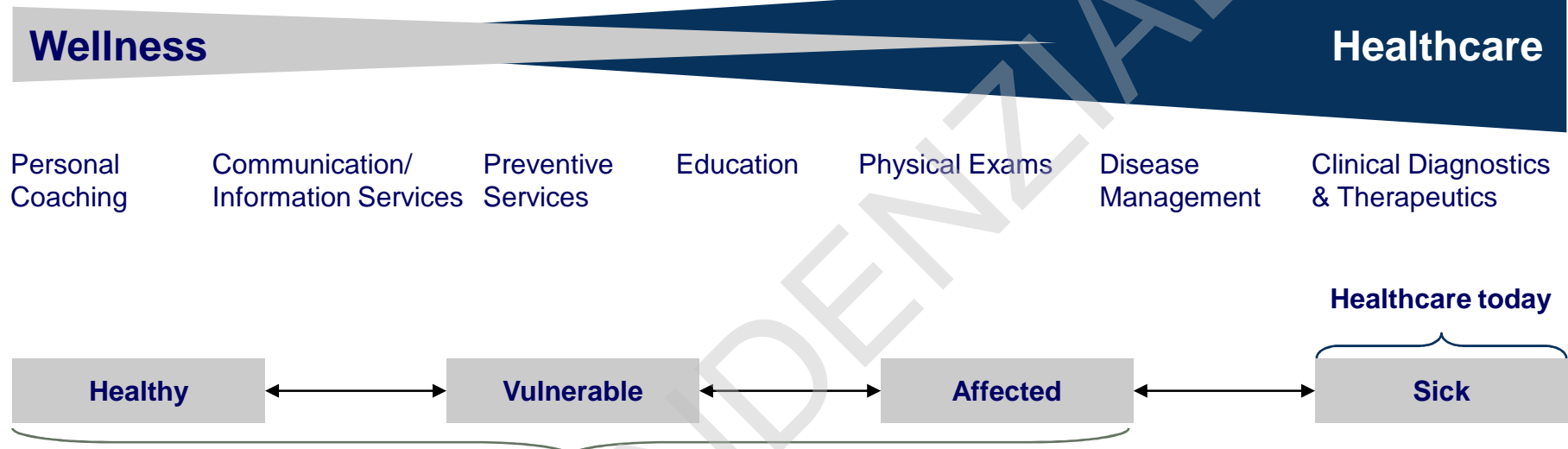
Ergonomic seats: maintain and control posture

Heated seats: provide comfort

"Increased comfort and serene, healthy living"

Oxygen-level conditioner and humidifier

Steering wheel changes colour based on driver's mood

Green tinted glazing to reduce infiltration of UV and infrared light; green colour portrays harmony with nature

Sliding doors and longer windows to view nature from the ground up

"Promotes a healthier well-being"
-Toyota Manufacturer

Light distribution control headlights intended to be easier on the eye for pedestrians and oncoming traffic

Workplace Wellbeing in the Future
Integration between Social Factors, Technology and Workplace Design To Create Meaningful and Productive Workplace Designs
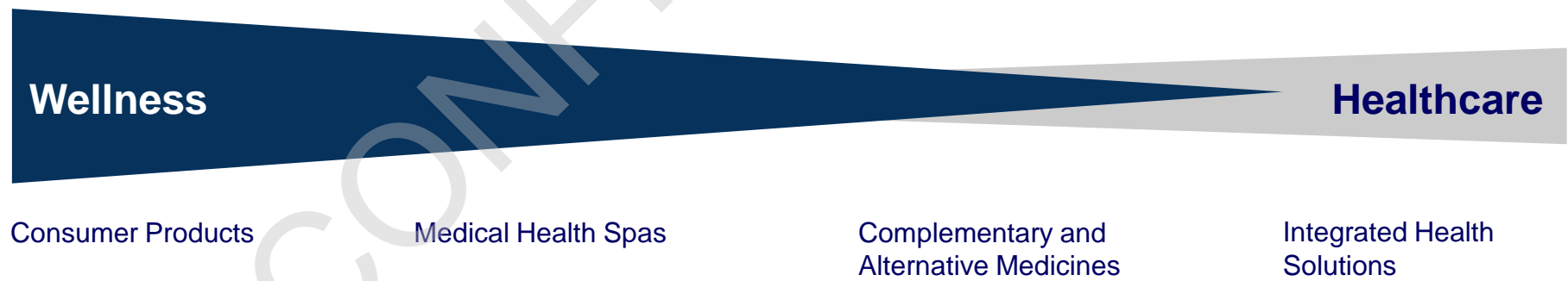

Wellbeing Zones: To Lessen Stress and Enhance Productivity

Paperless Meeting Rooms : Using Multitouch and Haptics on the Table

New Hospitality Models Entering the Corporate Environment

Meaningful Workplace Designs to Create Personalized Experience, Customized Ergonomic Solutions

Wellness at the Desk: Correct Display Screen Set-Up, Mood Lighting, Massage Chairs and Stress Management Workshops

Seamless Switching Between Laptops and Panel Display Enabling New Meeting Dynamics and Interaction

Telepresence Technology to Lessen Business Travel

Smart Clouds Enabling Real-Time Integration of Idea Capture and Information Sharing

Wellness Is A Key Area For Increased Focus, And Is Driving A Shift From Remedial To Predictive & Preventative Care

Today's world

Wellness **Healthcare**

| Personal Coaching | Communication/ Information Services | Preventive Services | Education | Physical Exams | Disease Management | Clinical Diagnostics & Therapeutics |

Healthcare today

| Healthy | ⟷ | Vulnerable | ⟷ | Affected | ⟷ | Sick |

Future healthcare

Future system

Wellness **Healthcare**

| Consumer Products | Medical Health Spas | Complementary and Alternative Medicines | Integrated Health Solutions |

Agenda

Sample of Mega Trends in the ICT Sectors

Sample of Mega Trends in the Healthcare Industry

Q&A Session, Contact Details

Contact Details

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Thanks for your attention!

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