# Innovating for mHealth

## The impact potential of Digital Connected Health in delivering better & more cost effective wellness to society



Santanu Biswas, CEO
Hyjiya Info JLT
April 28, 2014, Amman, Jordan

"We all are aware that demographic shifts, the impact of globalization and an increased burden of chronic diseases and expensive treatments are considerable challenges for our healthcare systems. We all agree that in view of limited budgets and the increasing demand for high-quality healthcare services, new cost-efficient, reliable and interconnected systems need to be developed. ***And I guess we all believe that e-health can make a significant contribution to ensure high-quality, sustainable healthcare system***".

Ljubisav Matejevic, Founder and Honorary Chairman of the Global E-Health Forum



# What is **Digital Health**? Can we arrive at a common understanding of its components

- Apps & Portals
- Sensors
- Monitoring devices
- Personal trackers
- Reminders and alerts
- Data centers & Cloud
- EHR/EMR/PHR
- HIE & NWs – MPI, UHR
- Content & Education
- Telemedicine & Teleconsulting



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# mHealth is not intended to replace healthcare **professionals** who **remain central** to providing healthcare

- Through sensors and mobile apps, mHealth allows the collection of considerable medical, physiological, lifestyle, daily activity and environmental data.
- This could serve as a basis for evidence-driven care practice and research activities, while facilitating patients' access to their health information anywhere and at any time.



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# mHealth could enable a truly **realistic model** for **patient centric** healthcare amidst today's complex health systems

- mHealth could also support the delivery of high-quality healthcare, and enable more accurate diagnosis and treatment.
- It can support healthcare professionals in treating patients more efficiently as mobile apps can encourage adherence to a healthy lifestyle, resulting in more personalized medication and treatment.

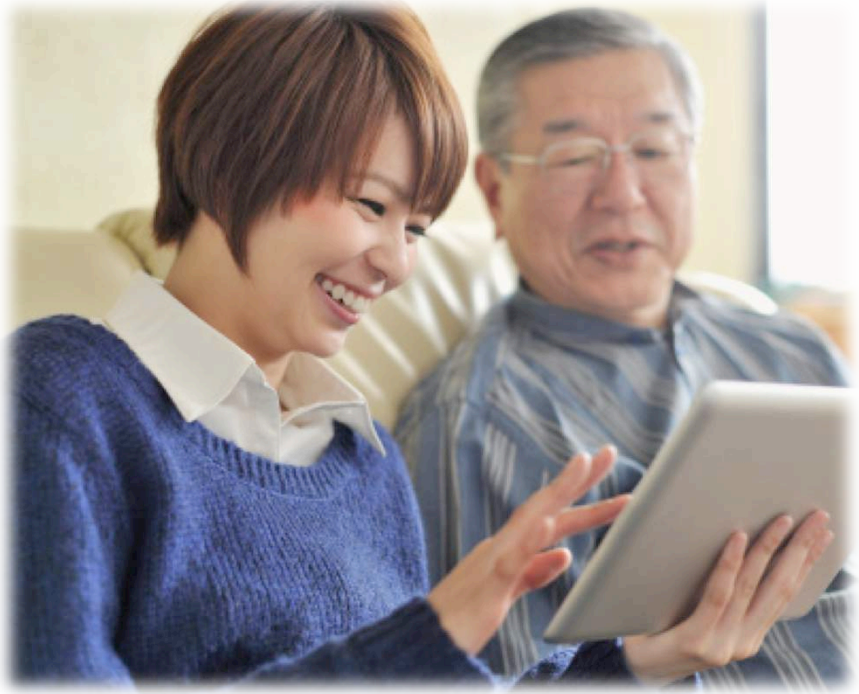


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# mHealth can play a key role in transforming lives. Chronic, ageing & recovering patients prefer managed care – digitally

- It can contribute to the empowerment of patients as they could manage their health more actively, living more independent lives in their own home environment thanks to self-assessment or remote monitoring solutions
- Monitoring of environmental factors such as changes in air quality that might influence medical conditions



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# The shift towards patient-centric care may require the re-design of existing healthcare infosystems

- Infrastructures and healthcare organizations are currently organized around healthcare professionals.
- Healthcare systems will have to open-up to the possibility of receiving data from patients (e.g. collected by mobile apps) and ensuring ubiquitous access to care
- **This implies a change in the role of professionals**



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## Patientprofile exemplified

| | Current figures | Optimum figures |
|---|---|---|
| Glycated hemoglobin | 7 | 7,5 |
| Systolic pressure | 145 | 125 |
| Diastolic | 80 | 75 |
| Total cholesterol | 3 | 4 |
| LDL cholesterol | 1,6 | 2 |
| HDL cholesterol | 0,7 | 1,1 |
| Smoking | Smoker | Non smoker |
| BMI | 36 | 25 |
| Exercise | 1 | 3 |
| Waistline target, cm | | 94 |

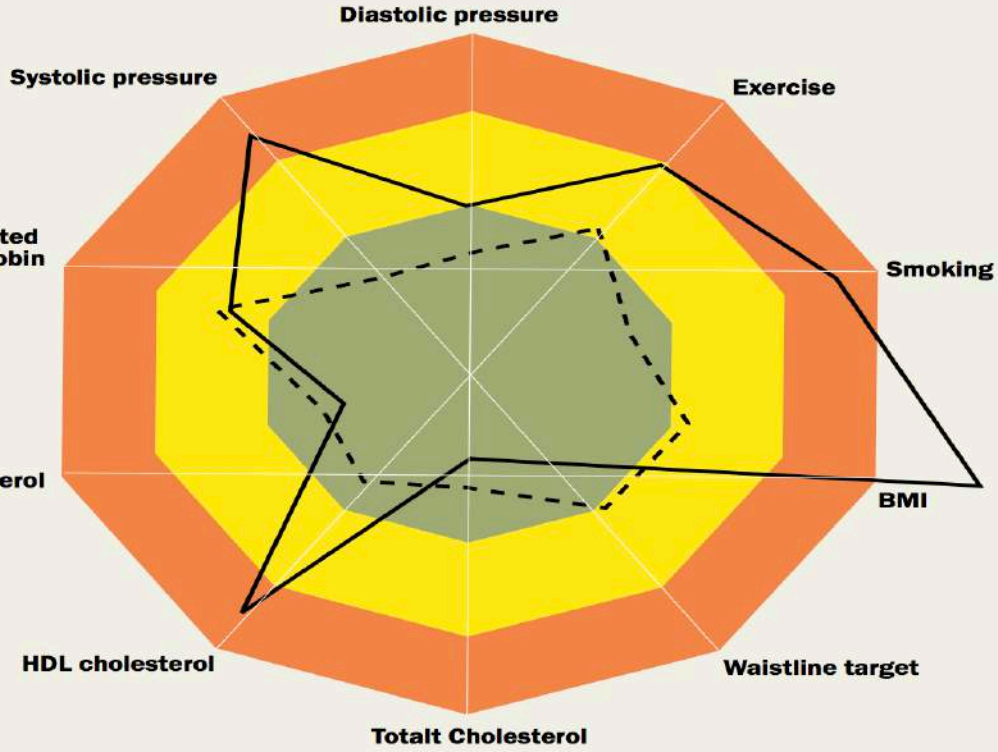



**Figure 13:** Patient and doctor review actual figures and agree targets for the patient to work towards. The aim is to move as many figures as possible from red to yellow or green.

MM **Source:** Danske regioner, www.demo.dak-it.dk

# The new phrase book!

- Treatment of chronically ill patients is anchored in networks and not in institutions.
- Consider investment not in number of hospital beds but in substantial rise in the use of telemedicine.
- IT and technology a prerequisite for the ongoing transformation.
- Empowered citizens will be the new partners in connected healthcare.

## PATIENT

PROBLEM › RESOURCE
RECIPIENT › CO-CREATOR
COST › INVESTMENT

## NURSE

CARE PROVIDER › HEALTH HELPER
CARER › ADVISER
PRACTITIONER › TRAINER

## DOCTOR

CLINICIAN › SERVICE PROVIDER
KNOWLEDGE PROVIDER › SPARRING PARTNER
FIRE EXTINGUISHER › PREVENTER

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# Changing role of patients from a passive, to a more participative role while enhancing their responsibility over their own health

1. Increased prevention/quality of life approach
2. More efficient and sustainable healthcare
3. More empowered patients

*Service is not just assessed according to how many hours of care are provided, but is becoming increasingly assessed on how many tasks people are still able to do for themselves*



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# The market potential for mHealth



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# The market for mHealth is in revenue as well as in savings achievable through right adoption

- GSMA/PwC projects that the global mHealth market will be US$ 23 billion in 2017, with Europe US$ 6.9, Asia-Pacific US$ 6.8 billion, ahead of the North America US$ 6.5 billion
- Remote monitoring treatment solutions - almost 60% of the total mHealth deployments in Europe.
- Solutions that increase the efficiency of healthcare workforce and systems - nearly 15% of overall deployments

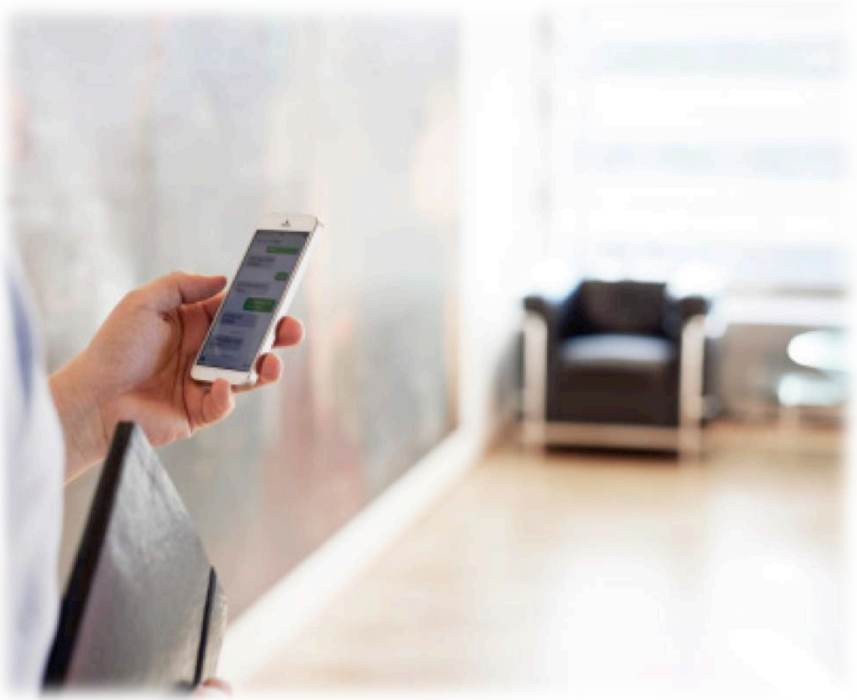


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# It is foreseen that by 2017 3.4 billion people worldwide will own a smartphone and half of them will be using mHealth app

- According to recent estimations 97,000 mHealth apps are currently available across multiple platforms on the global market.
- Approximately 70% of mHealth apps target the consumer wellness and fitness segments.
- 30% of apps target health professionals, easing access to patient data, patient consultation and monitoring, diagnostic imaging, pharmaceuticals information.



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# Given the potential benefits, why do home/remote/tele care technologies have such low penetration?

1. Financial Factors
   1. Alignment between payers and providers
   2. Remunerative
2. Effectiveness Factors
   1. Having significant impact
   2. Actionable
   3. Timely
   4. Closed Loop
3. Accessibility Factors
   1. Usable
   2. Repeatable




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# Section: Issues at stake



Various issues need to be considered as this development of mHealth progresses.

**Healthcare systems are a national or regional responsibility and competence needs to focus on cross-border issues.**

There is a need for coordinated action at GCC/ MENA/Global levels that could contribute to the scale-up of mHealth

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# 1. Data protection, including security of health data, is imperative

1. Huge amount of Personal and identifiable data being collected
2. Sharing and consent; Authentication and access
3. Misuse, Leakage and Theft

"data minimization", "data protection by design", and "data protection by default"



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# 2. Big Data & Cloud Computing can lead to increased productivity, and cuts of cost in the healthcare sector

- Estimated in the range of USD 300 billion in value in the US healthcare sector per year
- Cloud computing strategy aims to facilitate faster adoption of secure cloud solutions which should support secure storage of health data over the Internet



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# 3. Need to assess the legal issues arising from the use of lifestyle and wellbeing apps and the applicable medico legal framework

The eHealth Action Plan 2012-2020 indicated that

- The rise of mHealth is blurring the distinction between the traditional provision of clinical care and self-administration of care and wellbeing;
- and that different actors were seeking clarity on their roles and responsibilities in the value chain of mobile health

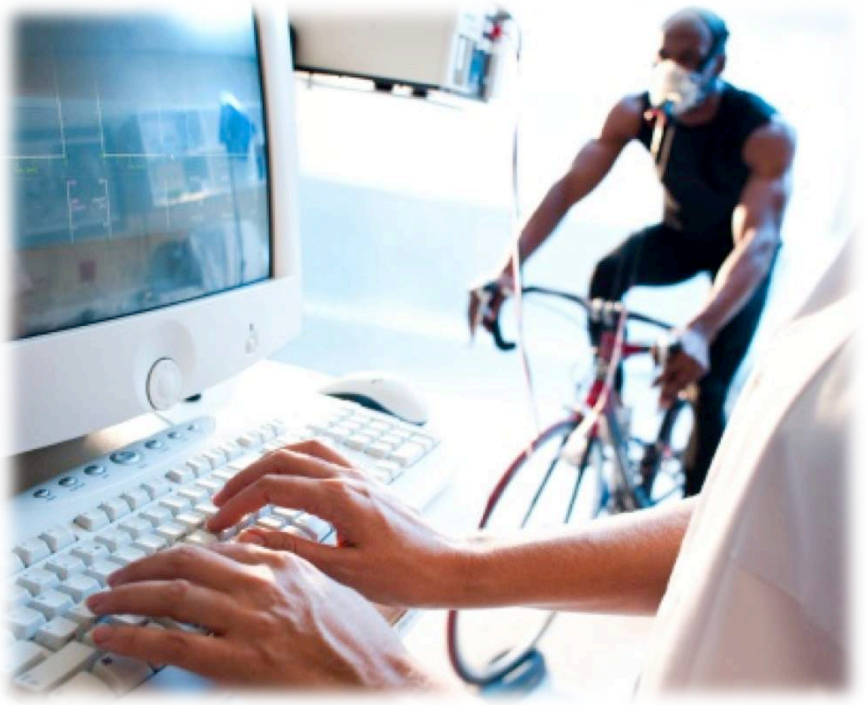


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# 4. Citizens can use the results of an mHealth solution or app to take decisions on their own - transparency needed

Given their variety, consumers, patients or healthcare professionals may find it difficult to choose the right mHealth solution or app

- apps are certified and sold on specialized app stores, such as Happtique
- European Directory of Health Apps



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# 5. mHealth is one of the tools that could help maintain sustainable healthcare systems & equal access public systems

1. More equitable access to healthcare as technologies spread to remote areas and people that would otherwise not have easy access to healthcare.
2. It could also help ease access to healthcare by people with disabilities.

Introducing mHealth services may, in the beginning, require training in order to adapt and develop their digital skills



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# 6. Interoperability in eHealth is complex. Many terminologies/ vocabularies are required to describe & code health data

- The absence of standards that mandate interoperability between mHealth solutions and devices impedes innovation and economies of scale
- Prevents mHealth investments from being utilised well and limits the scalability of such solutions

Users can benefit from transferring data they have generated on their mobile devices to their personal health records or healthcare provider



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# 7. Major obstacle for mainstream adoption of mHealth solutions is related to the lack of innovative & adequate refund models

- Implement innovative refund models, such as incentive programs
- Creating incentives for healthcare professionals to use mHealth solutions also requires reflection, for instance by remunerating them for care activities outside of the classic consultation



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# 8. Identifying potential liability arising from the use of an mHealth solution may be complex

Numerous actors involved:

- the manufacturer of the mHealth solution
- healthcare professional
- any other care professional involved in the treatment
- electronic communications provider providing the internet.



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# 9. Research/innovation in mHealth is key to enable citizens to become co-managers of their health and wellbeing

Focus on proof of concept, small-scale medical validation and medical outcome. The objective is to lead to new care paths triggered by mHealth.

Recently, a series of mHealth projects focused on the development of mobile solutions to centralize individuals' health data and keep them up to date, while increasing patient empowerment.



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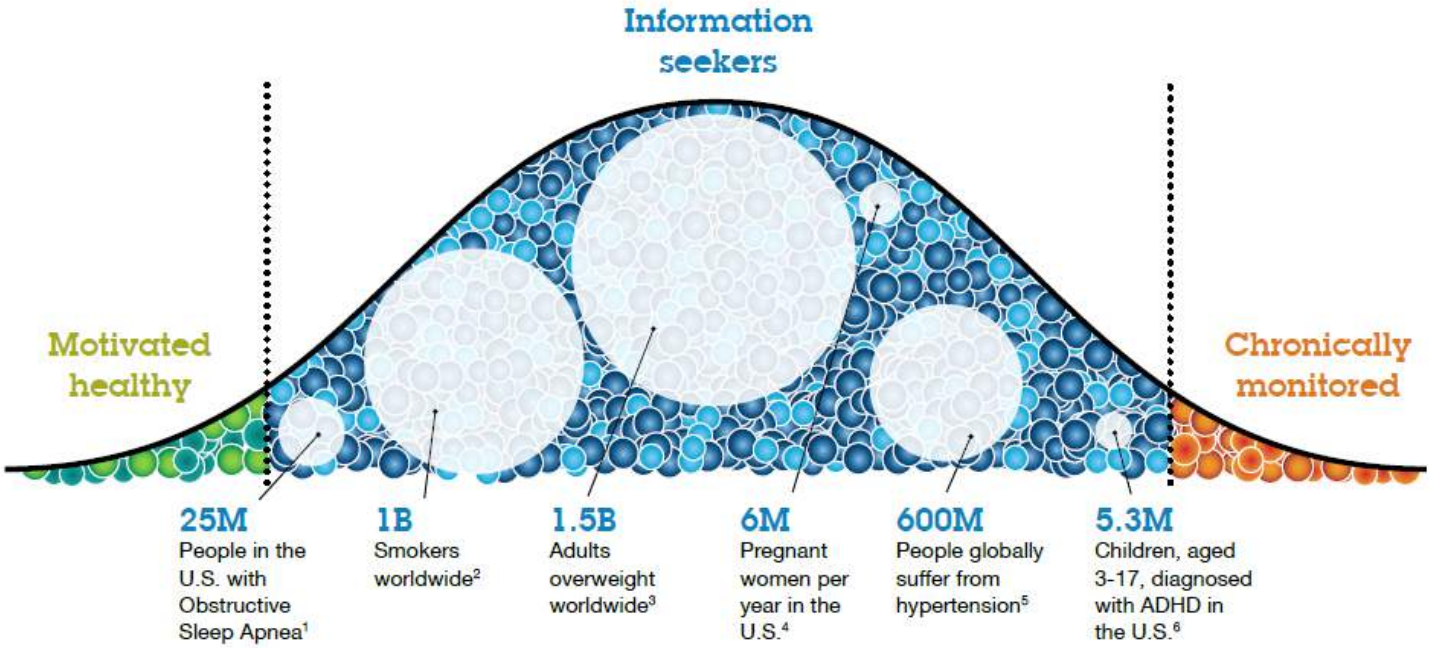
# 10. Healthcare systems around the world are under increasing pressure to perform under multiple health challenges - WHO

Considering mHealth's cross-border dimension and its potential contribution to sustainable healthcare systems and the economy, stronger support is needed for more regulatory convergence in the field and the exchange of good practice internationally



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# 11. Segmented approach to communities of interest will remain the key to adoption and improved outcomes




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# Section: Creating a strategic fit within Telcos



**What is telco doing in healthcare?**

How can it be part of the traditional healthcare delivery system – how can it enable disruptive innovation without creating systemic imbalances?

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# The world is going digital and the region's usage trends bright in terms of mobile internet and application penetration

- Within the UAE there are 3.7 million Internet users, currently accounting for **75% of the population.**
- UAE has the highest mobile penetration rates in the world, **more mobiles than people**

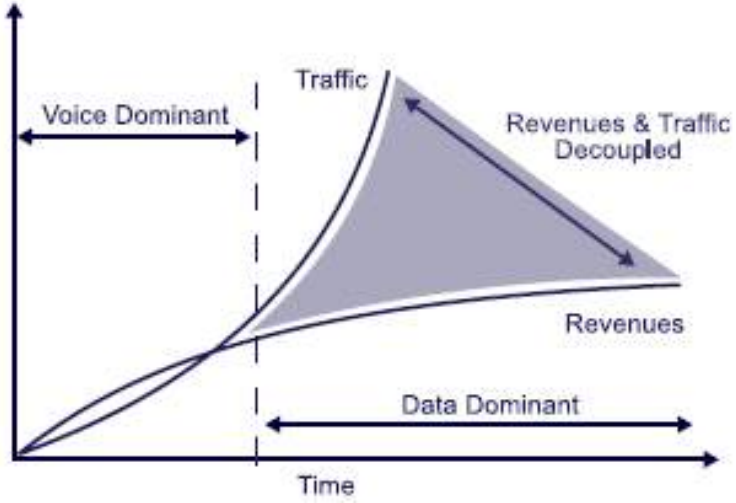
| Market | Internet users | Internet penetration % | Mobile penetration % |
|---|---|---|---|
| KSA | 11,400,000 | 43.6% | 166% |
| UAE | 3,777,900 | 75% | 193% |
| Qatar | 563,800 | 66.5% | 100% |
| Bahrain | 649,300 | 53.5% | 144% |
| Kuwait | 1,100,000 | 42.4% | 106% |
| Oman | 1,093,420 | 26.4% | 82% |



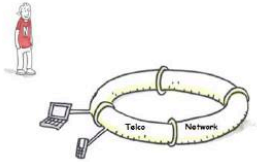

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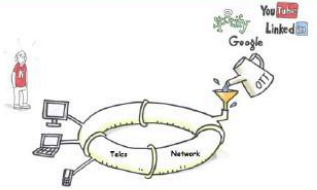
# Telcos are looking for new business opportunities and models to sustain growth in a changing and more competitive climate



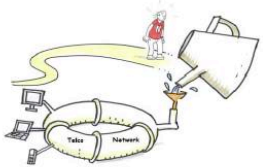

**For many years telcos have made their customers happy by providing traditional telecom services**




**The world has changed: whereby competitors have entered the game - the OTT players**




**There is a danger that the Customer relationship shifts to OTT players, while the network is relegated to a mere transmission or dumb 'pipe'**




**To beat them - join them!**
**Facilitate and support new and emerging applications via an enabling ecosystem which supports entrepreneurs**




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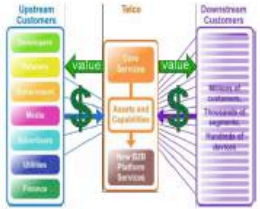
# Various collaboration models are possible within the innovation playground. The objective is to capitalize on unique Telco assets and to secure new revenue streams in a digital age

## Incubation/Entrepreneur & developer support



- **Funding support**
- **Coaching**
- **Housing & Facilities**
- **Customer base**
- **Expertise**: access to different fields of expertise e.g. marketing/finance/legal
- **Partnership**: ongoing cooperation after incubation phase
- **Use of the key telco assets**

## Two-sided business model B2B2C




- **Leverage assets**: leveraging the telco's assets by enabling partners to access / integrate these assets in new services
- **Continuous improvement** of assets offered by telcos
- **Service enablement** and **value creation**
  - Upstream for OTT players / other telcos
  - Downstream for end-users
- **Partnership**: ongoing cooperation after service development phase

## New Service Partnerships



- **Risks reduction**: sharing investments with a partner reduces the risk
- **Mutual benefits**: sharing each others strengths, e.g. valuable resources, knowledge, business network
- **Increase market reach:** leverage partner's customer base & marketing power
- **Partnership**: ongoing cooperation after service development phase, or clearly defined exit criteria after service launch

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# Leverage traditional Telco assets, invest smartly and create an environment of business "**partnerpreneurship**"

- Conceptualize an mHealth ecosystem that is tightly aligned with local healthcare drivers
- Implement a carefully crafted architecture – Develop the Portfolio plan & includes value creation and recognition of core competencies
- Go beyond partnering – invest, incubate, enable and sustain




**3. Build momentum through collaborative programs**



**2. Leverage assets: Hosted IP Call Centre & MVaaS**



**1. Seed fund and build capacity**

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# Digital Health **Portfolio** – building a connected ecosystem of smart and relevant digital health services

### 1. 24-7 Physician Helpline

A doctor in your pocket all the time. Peace of mind, non-emergency quality healthcare and advice. Anytime anywhere – immediate, convenient, effective




### 2. Video Consult

A premium service for 24· home/office health access video phone unit with connectivity



### 3. Health Text

Channel of wellness and healthy lifestyle tips for daily living





### 4. Get FIT

Wearable trackers and connected portals for the motivated fit



### 5. Health Link

Connected sensors (M2M) for remote monitoring of chronic diseases




### 6. Health App

Smart Phone apps acting as a seamless gateway to the du Smart Health portfolio – information, access, self care

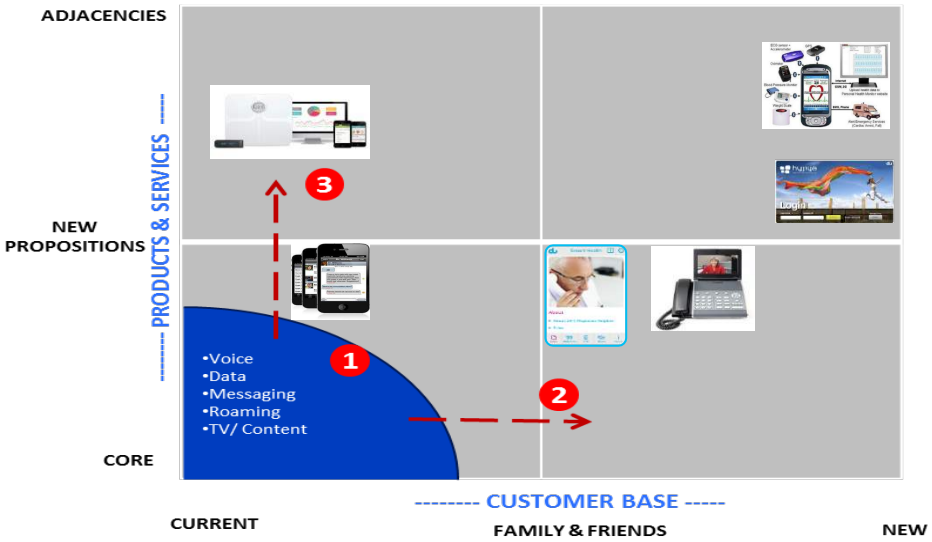


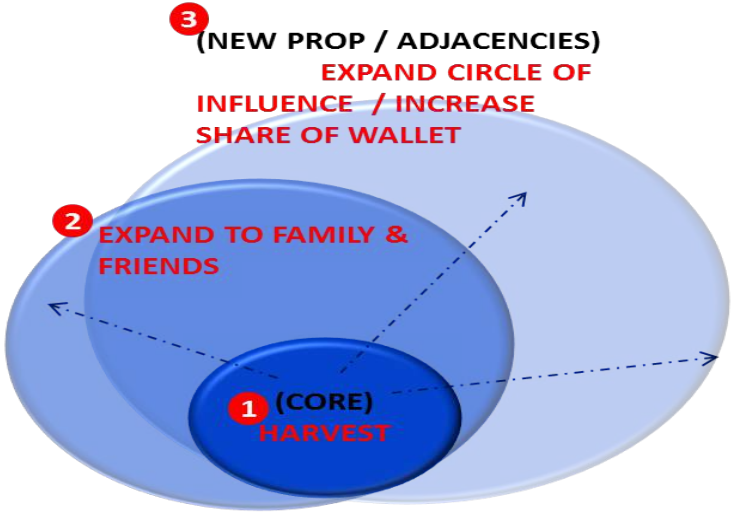

### 7. MyHealth IHR

An integrated personal health record portal and social market place – Helping customers own their health



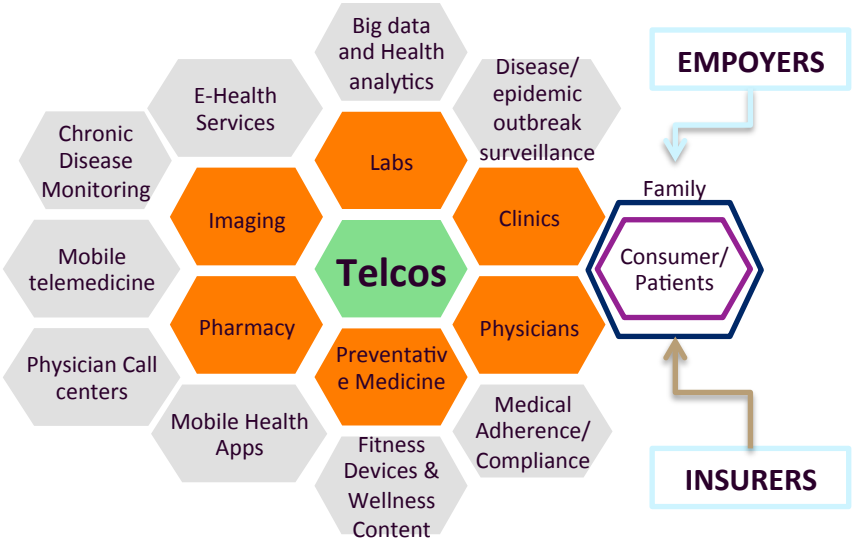
# Building propositions in adjacencies and family/friends using differentiated socially sticky services (health) is well aligned



# Can Digital Health improve patient engagement?

## BUILDING THE ECOSYSTEM..

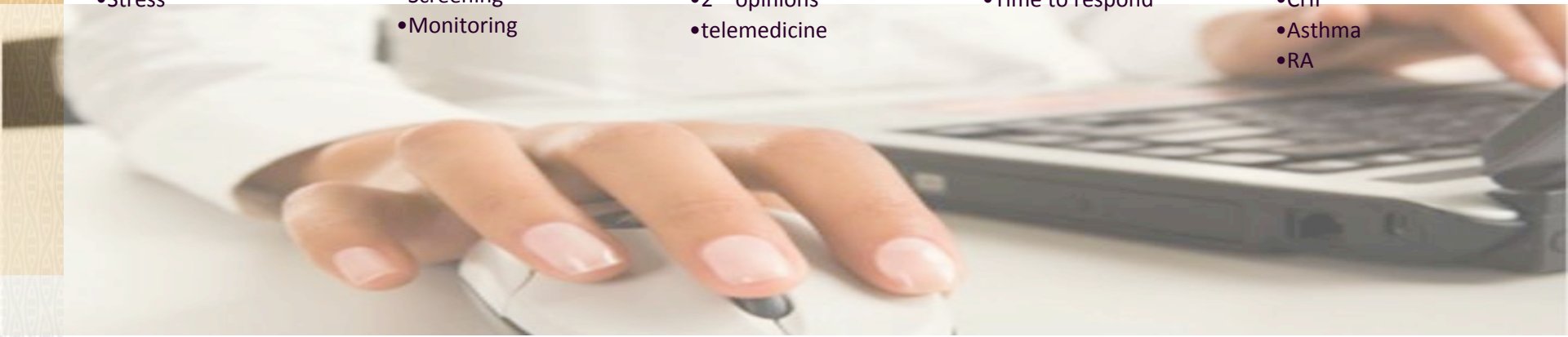



## TO OFFER…

- Chronic disease management services using connected sensors and mobile networks
- Patient medical adherence and compliance services using voice and SMS technologies
- Physician on demand, monitoring and advisory services using healthcare call centers
- Connecting remote health centers & specialist /tertiary hospitals for telemedicine & 2nd opinion services, through high speed NWs, 3G enabled kits and managed datacenters.
- Integrating & hosting HIS/EHR/EMR/PHR systems on the cloud and giving anytime-anywhere information access to physicians.
- Big data services around aggregated health & disease information for health trends, statistics, planning and epidemic outbreak surveillance
- Connecting personal trackers, apps & content with data/ SMS to provide solutions around fitness/wellness
- Creating patient portals and personal health record systems to deliver 360 degree healthcare to all customers

# Addressing the entire spectrum of the healthcare continuum

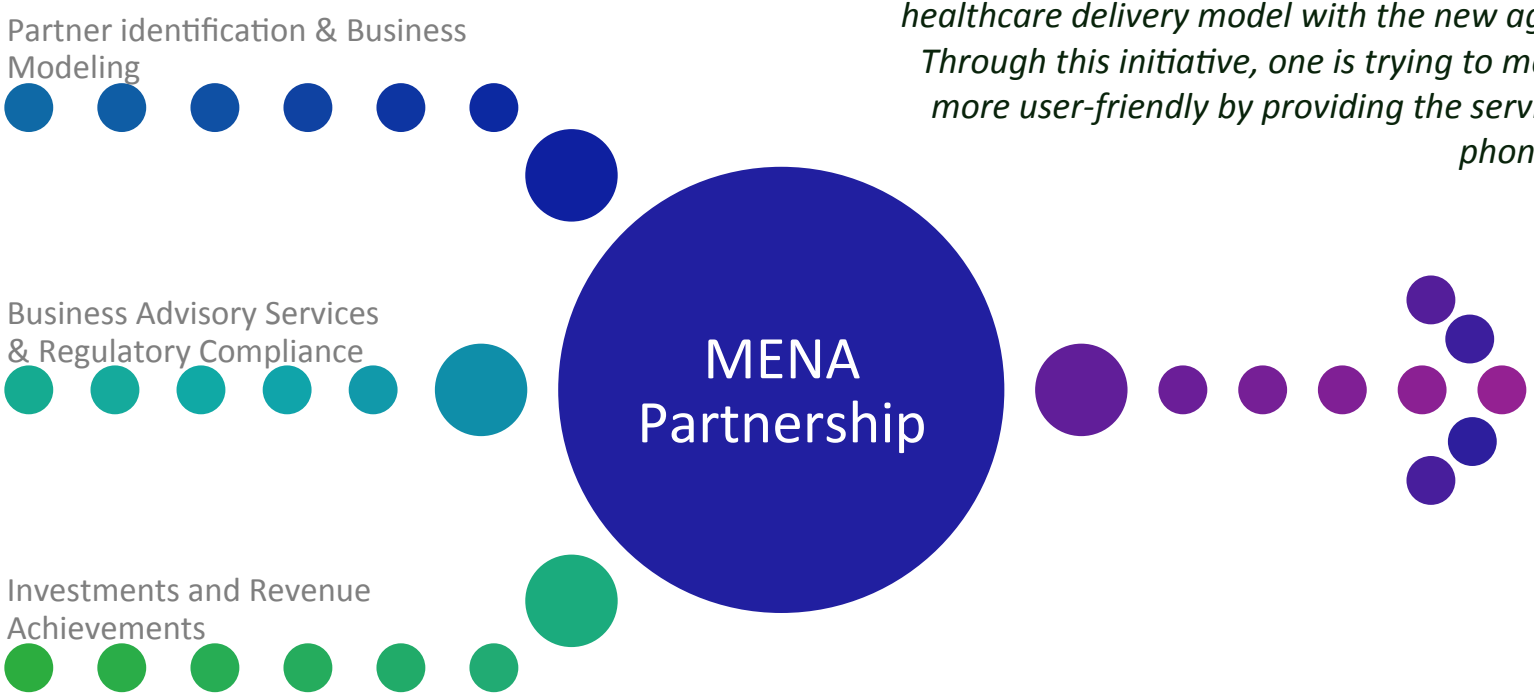
| Wellness | Preventative care | Acute care | Emergency Response | Chronic Disease Mngt |
|---|---|---|---|---|
| •Diet<br>•Activity<br>•Stress | •Education & awareness<br>•Screening<br>•Monitoring | •Primary care<br>•Specialist opinions<br>•2nd opinions<br>•telemedicine | •Vital information<br>•Allergies<br>•Time to respond | •Diabetes<br>•COPD<br>•CHF<br>•Asthma<br>•RA |



# Telemedicine 2.0

Integrating telehealth with the hospital management system, electronic medical records (EMR) of the hospitals, and mobile personal health record

*Telemedicine 2.0. is a step towards integrating healthcare delivery model with the new age technology. Through this initiative, one is trying to make telehealth more user-friendly by providing the services on mobile phones and tablets*



# Denmark, England and Scotland have mainstreamed telehealth. Political leadership & need to shorten patients' stays drivers

UK PM David Cameron (2011): "Just look at our approach to telehealth – getting new technology into patients' homes so they can be monitored remotely. We've trialled it, it's been a huge success, and now we're on a drive to roll this out nationwide. The aim – to improve three million lives over the next five years."




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# Thank you for your patient hearing!



**Questions & Comments**

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