Support in the definition of business models for the TEMIS project products

Project Meeting

06-02-2014

CONETIC (Smartpoint)

1. **PROJECT STATUS**
2. COMPETITIVE STRATEGY
3. MARKET STUDY
4. SIMILAR INITIATIVES BENCHMARKING
5. DEMAND PERCEPTION ANALYSIS
6. VALUE PROPOSITION ANALYSIS
7. OPPORTUNITIES AND THREATS
8. BUSINESS MODEL DEFINITION
9. NEXT STEPS

1. PROJECT STATUS

Planning review

	Calendar		Weeks															
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
100%	Phase 0	Project Kick-off																
100%	Phase 1	Industries identification																
100%	Phase 2	Industries Attractiveness and Potential of Success																
100%	Phase 3	Business Models Benchmarking																
100%	Phase 4	Competitive Strategy Definition																
100%	Phase 5	Similar initiatives Benchmarking																
100%	Phase 6	Opportunities and Threats identification																
90%	Phase 7	Market research and business model definition																
5%	Phase 8	Action and Communication plan																

Project meetings presentation and decision taking

1. PROJECT STATUS

Activities performed

Research papers

Organization type	Number of documents
Market studies (Advisory companies)	*21*
Academic research	*13*
Studies conducted by public agencies	*32*
Press releases	*20*
TOTAL	***86***

Organization analysis

Organization type by commercialization stage	Number of companies
Research and development projects	*130*
Analyzing possibilities for development	*8*
Early commercialization stage	*10*
Medium commercialization stage	*14*
Consolidated initiatives	*20*
TOTAL	***182***

Interviews

Organization	Interviewee
MEDES	*A. Berthier and A. Güell*
CETEMMSA	*P. Lacharmoise*
CONETIC	*G. Díaz and M. Pérez*
ITA	*S. Mayo*
AIDFM	*I. Rocha*
CHUT	*A. Pavy Le Traon*
ELI LILLY	*A. Pérez Agenjo (Senior Director of Marketing and Digital business for Europe, Australia and Canada)*
DKV Insurance (Munich RE Group)	*M. Ruiz Julve (Customer experience manager)*
Fundación Rey Ardid	*Ramón Nadal (D. Mental Health) Carlos Iglesias (D. Elderly clients)*
Departamento Sanidad Pública C. Madrid	*Francisco Lombardia (D. General Management and Innovation)*
Spanish National Parkinson Federation	*María Gálvez (General Manager)*

In-depth business model analysis and technological surveillance

	Act. monitoring	*Info. Manag. portals*	*Parkinson*
In-depth business analysis	*12*	*4*	*3*
Technological surveillance	*6*	*4*	*2*

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1. PROJECT STATUS

Planning review

Module1: Industries analysis and business model

PHASE 1

INDUSTRIES IDENTIFICATION

- Minimum Viable Products and Solutions definition.
- Potential industries identification.
- Attractiveness tests and demand caption preparation.
- Competitors and business models preliminary identification.

PHASE 2

INDUSTRIES ATTRACTIVENESS AND POTENTIAL OF SUCCESS

- Attractiveness tests and demand caption execution and analysis.
- Competitive structure analysis of every industry identified. Five Forces.
- PEST analysis.
- Porter Triple Test for every industry.
- Non-satisfied demand analysis.
- Industry priorization. Attractiveness – Potential of success Matrix.

PHASE 3

BUSINESS MODELS BENCHMARKING

- Business models characterization.
- Strategic Groups.

PHASE 4

COMPETITIVE STRATEGY DEFINITION

- Competitive Strategy alternatives (Options of the mix Products-Industries-Markets).
- Competitive Strategy evaluation and selection.
- Description of the Competitive Strategy: Portfolio and Segmentation.

Text in green: Activities completed
Text in orange: Activities not completed

1. PROJECT STATUS

Planning review

Module2: Market analysis for TEMIS services

PHASE 5

BENCHMARKING OF SIMILAR INITIATIVES

- Organization selection and validation
- In-depth business model analysis & Tecnology surveillance
- Value curve analysis and 4actions matrix elaboration
- General and specific best practices identification

PHASE 6

QUANTITATIVE MARKET STUDY

- Healthcare market review (Worldwide, Europe and SUDOE area)
- eHealth market quantitative estimation (Worldwide, Europe and SUDOE area)
- European Commission eHealth action plan review and next calls identification
- eHealth market forecast for the next 4 years (EU and SUDOE)

PHASE 7

OPPORTUNITIES AND THREATS IDENTIFICATION

- Analysis of TEMIS strenghts and weaknessess through the Dynamic Business Model framework
- Identification of the main opportunities for TEMIS in the SUDOE eHealth market for the next years.
- Identification of the main threats for TEMIS in the SUDOE eHealth market for the next years

PHASE 8

BUSINESS MODEL FRAMEWORK

- Definition of the TEMIS business model according to the analysis performed
- Validation of the model proposed and modification if needed.
- 3 year financial forecast definition
- Management model guidelines identification

PHASE 9

ACTION PLAN DEFINITION AND COMMUNICATION

- Communication plan
- Definition of Axis and strategic lines
- Initiatives and strategic actions deployment
- Identification of potential parterns / customer for starting new projects

Text in green: Activities completed

Text in orange: Activities not completed

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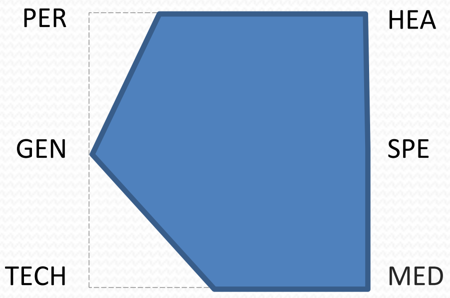
Strategy Premises

- According to the TEMIS members, and based on the Phase 1 diagnostic, TEMIS wants to be positioned according to the following premises:
  - **Affordable solutions** in terms of: Easy to use and accessible to as many people as possible.
  - **Wide and Generalist positioning**.
    - Vocation of giving solutions to the traditional **healthcare** market **and** also to the **performance and fitness industry**.
    - In both industries, healthcare and performance, TEMIS will develop **general public solutions and specific segment diseases**.
  - With a **professional** (doctors and coachs) and **industry** related organizations **go-to-market.** It will be mandatory to ensure that TEMIS solutions fulfill the needs of the direct consumers, but also the expectations of all TEMIS key stakeholders among the value chain (patient, public administration, …).



Healthcare but also with a presence in the performance segment, with a medical perspective and that offers specific solutions as well as general public applications.

Mission Strategy

MISSION STATEMENT

"TEMIS develops precise, easy to use and accesible personalised monitoring solutions, using simple and innovative technologies for measuring and evaluating the physical activity of subjects and patients, helping them to take care of their health and providing personalised information to coachs and doctors to take better decisions"

VISION STATEMENT

Be a relevant and long term provider of personalised monitoring solutions in the entire SUDOE for the healthcare and the performance industries, characterized by a innovative and affordable offering.

SHARED VALUES

- Inner and outer **Team-play**
- **Flexibility**
- **Competitive sensitivity**
  - Go-to-market intensity
  - Cost sensitivity

CORE COMPETENCIES

- **Polyvalence** together with **High Technology** and **Knowledge** capabilities.
- **Credibility, reliability** and **prestige** of the institutions involved.
- **Geographical presence**.

Portfolio Strategy

Solutions	Components	End user segments	Specifications
Customizable Activity monitoring and decision support solutions	• Smart clothe • Smartphone application • Information platform (cloud)	• Any disease patient • Healthy people	• Individual data caption of daily activity. • Information system for users of current and history activity. • Remote patient monitoring. • Data mining for better coach and doctors decisions. Care plan Management. • Digital communication and relationship between coachs / doctors and subjects / patients.
Parkinson patients movement prescription and evaluation	• Kinect • PC Software • Information platform (cloud)	• Parkinson patients	• The application will be used at home to do the standarized exercises done when the patient goes to visit the doctor. • The patient will be able to do remotely the exercise that today does during consultation time. • The doctor will have better quantitative information of the patient evolution. • Digital communication between Parkinson proffesionals and patients and caregivers.
Clinical and Pharma trials	• Smart clothe • Smartphone application • Information platform (cloud)	• Hospitals • Pharmaceuticals and Biotechnologicals • Public Administrations • Sport centers	• Collective data caption of daily activity. • Semantic data mining.

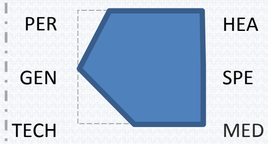
Portfolio Strategy

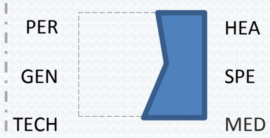
Temis applications. Short, medium and long term objectives

R&D

GO TO MARKET

	Horizon	Solutions
H3	**HORIZON 3: VISIONAIRES**	• New emerging technologies for personalised medicine.
H2	**HORIZON 2: BUILD EMERGING BUSINESSES**	• Clinical and Pharma trials. • Mass Activity monitoring solutions. • Information systems. EMR…
H1	**HORIZON 1: EXTEND AND DEFEND CORE BUSINESS**	• Customizable Activity monitoring and decision support solutions. • Parkinson patients movement prescription and evaluation.





UE/EU - FEDER/ERDF

Healthcare market review

- European countries are the 2nd region with a total expenditure of $1.897 trillion. With a population of circa 750 million inhabitants, the expenditure per capita is $2.527 per person (€1.871).
- In Europe, i) **circulatory system**, **Cancer** and **respiratory system** disease are by far the **top three causes of death**. Disease related with the **nervous system** and **mental** behavioural disorders are the **only diseases** in Europe that **have increased** in the last decade. **Obesity**, a risk factor for related diseases has **also increased** in most of the European Countries during the last years.

SUDOE*

Population: 123.051.603
Per Capita: $ 2.750

5,2% of world total

* All France included in the estimation

Source: Own elaboration based on Emerco Group and OECD

eHealth market

- Based on the data published by Eurostat and the European Commission, the **eHealth market in 2013** of France, Portugal and Spain (SUDOE area countries) was valued in **€1.719 million**.
- The eHealth market is in the three countries in its **early stages of development**, representing the percentage of eHealth expenditure only 0,5% of the total global healthcare expenses.

Estimation of eHealth market potential in France, Portugal and Spain

EU 27 eHealth market in 2013 €12,06 Billion	FRANCE 	PORTUGAL 	SPAIN 
Population (inhabitants)	65.860.000	10.487.289	46.704.314
Healthcare expenditure per capita (€)	3.058	2.097	2.345
Total healthcare expenditure (million €)	201.400	21.992	109.522
eHealth market potential (million €)	1.040	113	565
eHealth expenditure per capita	15,8	10,8	12,1

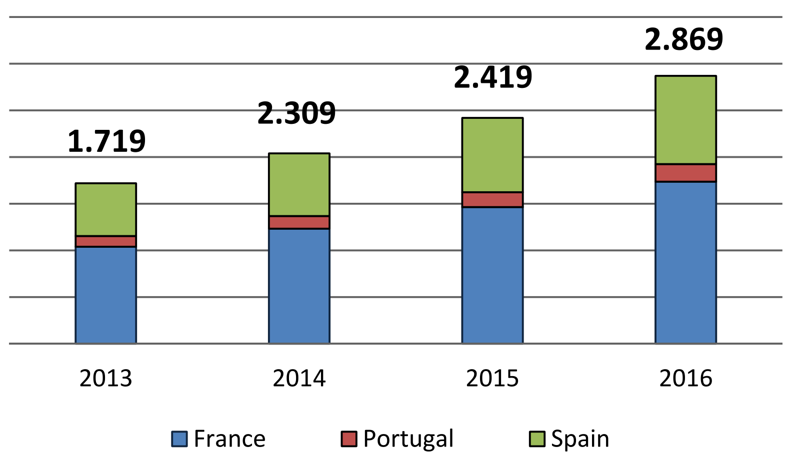
TOTAL EHEALTH MARKET POTENTIAL = €1.719 million

Source: Own elaboration based on Eurostat and European Commision information

eHealth market

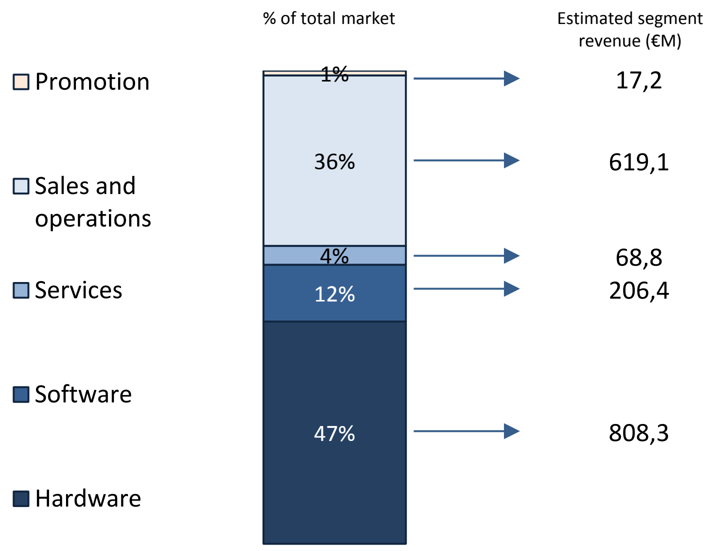
- It is expected the market grow until circa €2.900 million in the year 2016 (expected **CAGR 2010-2016 of 18,6%**).
- **France** will be the **most relevant market** due to mainly for the bigger population and the bigger expenditure per person. Nonetheless, this growth will only be possible in all countries if national public administration foster step by step the needed reform of the healthcare system and enables an attractive framework for all the key industry players.
- By disease, Cardiovascular and respiratory seems to be the diseases with more potential to developed eHealth solutions followed by, nutrition, mental and nervous system related illnesses.

Forecast of the eHealth market in France, Portugal and Spain (€Million)



Source: Own elaboration based on Eurostat and Gartner

Market forecast by market segments in France, Portugal and Spain



Source: Own elaboration based on A.T. Kearney analysis

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Companies analysed and structured followed

Benchmarking metodologhy

In-depth business model analysis + ***Technology surveillance*** + ***Value curve analysis***

Best practices identification → ***TEMIS Market positioning***

In-depth business model analysis. Companies analysed

i) Activity monitoring and decision support

- Nuubo
- OM Signal
- AiQ
- Gow Trainer
- Withings
- Jawbone
- Polar
- Fit Bit
- Adidas
- Nike
- Bodytel
- Omron
- Medisana

ii) Parkinson´s focused solutions

- Sense Park
- REM Park
- Cupid

iiii) Information management portals

- Caradigm
- IBM
- Microsoft
- The Digital Patient

Technology surveillance. Organizations analysed

i) Activity monitoring and decision support

- Bodymedia
- Cardionet
- ECG Check
- Hexoskin
- A&D Medical
- WelchAllyn

ii) Parkinson´s focused solutions

- Global Kinetics
- The verve

iiii) Information management portals

- Allscripts
- Preventice
- Health Systems
- Point of Care 360

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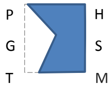
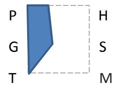
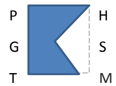
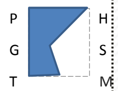
Activity monitoring and decision support. In-depth business analysis

Comparative table (Smart Clothe based solutions)

ORGANIZATION / CHARACTERISTICS	nuubo	GOW	OM signal	AiQ Smart Clothing
Specific diseases	i) Tachicardia and bradycardia, ii) Atrial Fibrilation, iii) Supraventricular iv) ectopics, v) Ventricular ectopics, vi) Bigeminy and trigeminy, vii) Ventricular tachycardia, viii) Maximum RR, ix) Morphologies of beats.	• Focused only on performance, not healthcare. • Complete analysis of training data: Distance, time, calories, speed, …	• More general than specific. Uses the indicators measured to know the "wellness" of the patient (stress levels, fitness, nutrition, and sleep). • Especifically, it is focus on heart disease prevention.	• Generalist approach and technology focused. • Not specific diseases strategy.
Level of specialization *(1 low (generalist); 5 High)*	4. Medium-high	2. Medium-low	3. Medium	2. Medium-low
Penetration Stage *(1 R&D; 10 Market consolidation)*	6. Early stage commercialization	6. Early stage commercialization	4. Prototipes developed. Developing Go-to market strategy (not preorder yet)	4. Prototipes developed but no market strategy
Geographical Scope	Europe	Europe, Mexico and U.S.	North America. International vocation in the long run.	Asia, Europe and North Amercia
Competitive strategy	▪ Specialist in a particular organ (hearth), but market generalist (healthcare & performance). ▪ High medical focus. 	▪ Performances. ▪ Generalist (multisport) ▪ Technology driven. ▪ Focus on fiteness user improvement. ▪ User centric and focus on the user expecience. 	▪ Performance and healthcare. ▪ General disease approach ▪ Technology driven and user centric, not medical. 	▪ Performance and healthcare. ▪ Generalist disease approach. ▪ Techology driven. More focused on the user than other stakeholders 
Value chain position	▪ Focused on Technological resarch, Components and devices development (nECG Textile and nECG Minder) and Services and solutions development (nECG Suite).	▪ Positioning: Components and devices development, services and solutions development and market commercialization.	▪ Positioning: Components and devices development, services and solutions development, Software applications development and market commercialization.	▪ The company is positioned in mainly as a Technological researcher and a components and devices developer. In lesse extent also as a services and solutions developer and as a retailer.
Ecosystem	▪ Two main partners: Doctors and High performance organizations. ▪ Two main segments: Heart disease patients and professional atlhetes.	▪ User centric approach. ▪ Strong link with the players all the performance industry players of the eHealth ecosystem.	▪ Similar ecosystem than Nuubo but more focused on the Fitness / Wellness market thn in Healthcare. ▪ Funded received by 3 different angel investors.	▪ More focused on the first steps of the industry value chain. ▪ Weak commercialization strategy. Strategic position based on SWS technology development.

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4. SIMILAR INITIATIVES BENCHMARKING

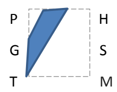
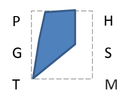
Activity monitoring and decision support. In-depth business analysis

Comparative table (Smart Clothe based solutions)

CHARACTERISTICS / ORGANIZATION	nuubo	GOW	OM signal	AiQ
Products and technologies used				
- Smartclothe	✓	✓	✓	✓
- Portable data recorder	✓	✓	✓	
- Software (computer)	✓	✓		
- Software (mobile)		✓	✓	✓
- Other				
Services / uses / solutions				
- Detection	✓		✓	✓
- Prevention	✓		✓	✓
- Treatment / training	✓	✓	✓	✓
- Rehabilitation				
Indicators measured				
- ECG	✓			
- Heart Rate	✓	✓	✓	✓
- Breath	✓	✓	✓	✓
- Motion	✓	✓	✓	✓
- Calories			✓	✓
- Sleep			✓	
- Food habits & Weight			✓	✓
- Mood (Stress level)			✓	

Activity monitoring and decision support. In-depth business analysis

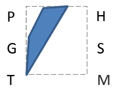
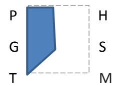
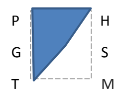
Comparative table (Wristband based solutions)

ORGANIZATION / CHARACTERISTICS	JAWBONE	Withings
Specific diseases	• General approach and focused on wellness. • The systems is focused on measuring data to provide information about three main aspects: i) sleep monitoring, ii) Phisical activity tracking and iii) nutrition habits.	• General and healthcare approach apporoach focused on body monitoring. • Multi-device development to general disease and body condition measuring.
Level of specialization *(1 low (generalist); 5 High)*	3 medium	2 medium-low
Penetration Stage *(1 R&D; 10 Market consolidation)*	7 market commercialization (already in the market, early stage)	7 market commercialization (already in the market, early stage)
Geographical Scope	Worldwide	Europe and North America
Competitive strategy	▪ General approach in wellness. ▪ Ergonomic and easy to use devices to create a high engagement level. ▪ Higher customer centric approach than technological focused. 	▪ Multidevice approach to cover the maximum amount of the patient monitoring needs. ▪ Higher technological orientation and product orientetion rather than a solution based approach. 
Value chain position	▪ Wide positionined in the value chain industry, The company cover all the processes from Technological research to Reatiling.	▪ Wide positioning in the value chain, from techonlogical R&D to commercialization.
Ecosystem	▪ Jawbone devices are compatible with the other IT developers software (Runkeeper, myFitnessPal, GymPact) ▪ The organization sells directly to the customer but uses as well wholesalers.	▪ Not relevent alliances among the industry value chain. ▪ Despite the follow a direct selling strategy, the also have partnerships with specialized retailers.

4. SIMILAR INITIATIVES BENCHMARKING

Activity monitoring and decision support. In-depth business analysis

Comparative table (Wristband based solutions)

CHARACTERISTICS / ORGANIZATION	fitbit	POLAR LISTEN TO YOUR BODY	MEDISANA made for Life
Specific diseases	• General approach in wellness and fitness. • Not medical orientation. • No especific diseases.	• General approach but more focused on the performance market than Jawbone or Fitbit. • No specific diseases.	• No specific disease. The company develop monitoring systems in specific areas: i) wellness, ii) therapy, iii) personal care, iv) health control, v) mobile health and vi) sport.
Level of specialization *(1 low (generalist); 5 High)*	3 medium	3 medium	3 medium
Penetration Stage *(1 R&D; 10 Market consolidation)*	7 market commercialization (already in the market, early stage)	6 market commercialization (already in the market, new release)	7,5 market commercialization (medium stage)
Geographical Scope	Worldwide	Worldwide	Europe
Competitive strategy	▪ Fitbit goal is to develop devices and IT solutions that provides their users effective tools to plan and monitor healthier life habits. 	▪ The company is using their expertise in performance body monitoring to enter in the wellness monitoring market. ▪ Focus on data monitoring and coaching activities 	▪ Specialist in developing tools and devices to monitor and control healthcare, wellness and performance of their clients. 
Value chain position	▪ Wide approach, from technological to retail and after sales services (data interpretation and assesment services).	▪ Wide approach, from technological to retail and after sales services (data interpretation and coaching services).	▪ Focus on technologica research, components and devices development and services / solutions development.
Ecosystem	▪ Not relevant alliances with other industry players have been detected.	▪ Alliances with wholesalers and specialized chains to sell their devices.	▪ Partnerships with product retailers and sotware developers.

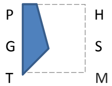
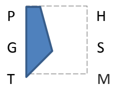
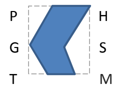
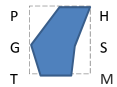
Activity monitoring and decision support. In-depth business analysis

Comparative table (Wristband based solutions)

CHARACTERISTICS / ORGANIZATION	JAWBONE	Withings	fitbit	POLAR LISTEN TO YOUR BODY	MEDISANA
Products and technologies used					
- Wristband	✓	✓ (Tensiometer)	✓	✓	
- Portable data recorder		✓	✓	✓ (Heart rate sensor)	✓
- Software (computer)			✓	✓	✓
- Software (mobile)	✓	✓	✓	✓	✓
- Smartwatch		✓	✓	✓	✓ (Able to measure continous heartrate)
Services / uses / solutions					
- Detection		✓	✓	✓	✓
- Prevention	✓	✓	✓	✓	✓
- Treatment / training	✓	✓	✓	✓	✓
- Rehabilitation			✓		✓
Indicators measured					
- ECG					✓
- Heart Rate		✓ (Isolated measuring, not constant montorinzation)		✓	✓
- Breath				✓	✓
- Motion	✓	✓	✓	✓	✓
- Calories	✓	✓	✓	✓	✓
- Sleep	✓	✓	✓		✓
- Food habits & Weight	✓		✓		
- Mood (Stress level)	✓				

Activity monitoring and decision support. In-depth business analysis

Comparative table (Other type of devices)

ORGANIZATION / CHARACTERISTICS	experience NIKE+	adidas micoach	OMRON	BodyTel™ The Telehealth Company
Product orientation	• Based on enhance the individual user experience. • Multiple product approach integration in a platform managed by Nike eith productscreated by third parties.	• Adidas has multiple products that cover the needs of the ADIDAS athletes by sport speciality. • Possibility to measure the performance in a game and to create personalized workouts.	• Omron devices are mainly specialized in the healthcare industry.	• Bodytel offer "on demand" solutions for eHealth companies in four business areas: i) Telemedical portals, ii) Telemedical sensors, iii) Telemedical mobile Apps, and iv) Telemedical Infrastructure.
Level of specialization *(1 low (generalist); 5 High)*	1 low (Generalist)	1 low (Generalist)	3 Medium	2 medium-low
Penetration Stage *(1 R&D; 10 Market consolidation)*	7,5. market commercialization (already in the market, medium stage)	7,5. market commercialization (already in the market, medium stage)	7,5. market commercialization (already in the market, early stage)	7,5. market commercialization (already in the market, medium stage)
Geographical Scope	Worldwide	Worldwide	Worldwide	Europe
Competitive strategy	▪ Development of SWS and HMRS solutions as an add on to their garment products and to improve the customer experience and their engagement levels. ▪ Online community. 	▪ Development of a multisport platform of activity monitoring activity, ▪ System to personalize and manage your sport sessions. ▪ Online community. 	▪ Historical expertise and knowhow in Non wearable monitoring systems. ▪ Recently, Omron is diversifiying developing SWS, mainly for the healthcare segment. 	▪ Focus on general healthcare. ▪ Their products are created to help eHealth organizations in the technological development of their products. 
Value chain position	▪ Focused on the maketing promotion of the platform, business development and wholesale.	▪ Similar than NIKE: Focused on the maketing promotion of the platform, business development and wholesale.	▪ Broad positioning, from technological research to wholesailing. ▪ More focused on product development than in marketing and commercialization.	▪ Mainly position in two links of the industry value chain: Components and devices development and services and solutions development.
Ecosystem	▪ Platform developer. Alliances with other organizations to create an ecosystem of SWS and HMRS: kinect (Microsoft), Smartwatch (Tom Tom), Portable data recorder (Apple).	▪ Adidas uses and outsourcing strategy to develop the SWS that has in its portfolio. However, ADIDAS uses its own brand in all their products and services. Platform more closed than Nike+.	▪ Not relevant partnerships in the part of the value chain relate to product development. ▪ Partnerships with retailers and ICTC companies that are creating eHealth marketplaces (Microsoft HealthVault).	▪ The company is not pursuing to create an ecosystem, It´s goal is to become the partner (provider) of as many players in the market as possible.

Activity monitoring and decision support. In-depth business analysis

Comparative table (Other type of devices)

CHARACTERISTICS / ORGANIZATION	experience NIKE+	adidas micoach	OMRON	BodyTel The Telehealth Company
Products and technologies used				
- Smartclothe		✓	✓	
- Portable data recorder	✓ (Ipod Nano)	✓	✓	✓
- Software (computer)	✓	✓	✓	✓
- Software (mobile)	✓	✓	✓	✓
- Other	✓ (Watch, Kinect compatible)	✓ (Training monitor, smartwatch)	✓	✓ (Sensors and measurement systems)
Services / uses / solutions				
- Detection			✓	✓
- Prevention			✓	✓
- Treatment / training	✓	✓	✓	✓
- Rehabilitation			✓	✓
Indicators measured				
- ECG				
- Heart Rate	✓ (with additional adapter)	✓	✓	✓
- Breath		✓	✓	✓
- Motion	✓	✓	✓	✓
- Calories	✓	✓	✓	✓ (On demand indicators masurement)
- Sleep			✓	✓
- Food habits & Weight			✓	✓
- Mood (Stress level)			✓	✓

Activity monitoring and decision support. Technology surveillance

ORGANIZATION	BEST PRACTICES
CARDIONET	**Early entry player (commercial consolidation US market), company focused on solutions and reliable brand image** • Early developer. Cardionet has been an early developer of portable devices to monitor heart diseases in real time preventing the patient for morbidity, mortality and disability thanks to a system capable to alert clinicians. • Consolidated market penetration. The company, thanks to the medical approach and a “doctor as a prescriber” strategy, is well established in the U.S. Market. The company is focused not only on patient needs, but also in the healthcare professional demands. • Focused on solutions, not in products or services. Cardionet sells valuable solutions to their two main customer groups, patient and doctor. • Reliability. Cardionet has been awarded by the Government
A&D Medical	**Extensive track record in healthcare, professional network and strategic shift** • Long track record and know-how in healthcare monitoring systems manufacturing. A&N Medical is a manufacturer of a wide range of health non-wearable monitoring systems. • Strategic positioning shift. The company has started recently to develop new smart wearable systems based on their expertise their classic products, adapting their portfolio to the new market trends. • Healthcare professionals network. A&D medical has a strong network of healthcare proffesionals in the regions where the company operates. Moreover, the company sells their new SWS in the marketplace HealthVault created and managed by Microsoft.
ECG CHECK	**Data processing IT management, easy to understand software, useful and cost effective** • ECG Check monitor is a mobile phone application that allows the patient to monitor remotely and easily their ECG, preventing them from cardiovascular disease. • Data processing and physician automatically report. The device does not only measure your ECG. It is also capable to interpret the information and send a report to a doctor in case there exists an anomaly. • Easy to understand. The value proposition of the system is clear, easy to understand and focused on a very concise customer target group. • Useful and cost effective. ECG check allow the patient to do a process easily and in a most effective manner. Moreover, the system is considerably cheaper than the traditional method.

Activity monitoring and decision support. Main conclusions

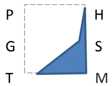
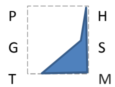
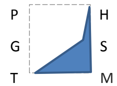
- Performance and wellness are more consolidated than healthcare.
- **Product price** is not considered as a key variable. In the three segments analysed (Wellness, Performance and Healthcare), the demand elasticity is relatively inelastic and the organization compete more via quality rather than via costs. Healthcare is the sub-segment which shows the more inelastic demand price of the three.
- **More parameters** does **not mean higher value** for the patient and on demand solutions have to be created..
- The quality of the information recorded is another important aspect. This aspect is even more important in Healthcare, where the **accuracy of the data must be excellent** in order to analyse and make useful reports. High quality of the data recorded is a mandatory aspect needed to create a meaningful value proposition.
- **T-shirt** based solutions present a **bigger dependence on complementary devices** than other products based on wristbands, smartphones or smart-watches. Moreover, smart-shirts have to be linked with additional devices that provide the battery and storage the information, resting comfort and increasing the degree of device dependence. Therefore eTextiles have to provide the users bigger value than the extra comfort than other alternatives provide.
- **Healthcare solutions** used to be highly practical and the **design is not considered as a key attribute**, being less important than data accuracy or comfort.
- **All the systems** have developed **IT tools that provide comprehensive information** to the **user** and there are not big differences of the quality of their systems. However, **not many** are focused on also creating tools that fit in the needs of the **professionals and / or caregivers**. This is an important aspect, specially in healthcare, where the doctor is considered as a product prescriber and therefore, their propensity to use an application could benefit their market expansion.

Activity monitoring and decision support. Main conclusions

- In Wellness and Performance, companies are using social media tools and gamification techniques to obtain a greater user´s degree of involvement and a broader diffusion of their products and services. On the other hand, in healthcare, socialization developments are less usual and it is more difficult to use the marketing benefits and "virality" of the Internet to promote this kind of organization. In this case, **confidentiality** and **data privacy** are more important aspects than socialisation.
- **Wellness** and **Performance** products use to have a **B2C** (business to consumer) approach while **healthcare** organizations use to sell their products in a **B2B** (business to business) environment. Performance companies excel in commercializing their products and having a deep know-how of the aspects needed to commercialise a product to the end user.

Parkinson´s focused solutions. In-depth business analysis

Comparative table

CHARACTERISTICS / ORGANIZATION	Cupid – Closed-loop system for personalized and at-home rehabilitation of people with Parkinson's disease	SENSE·PARK	REM PARK
Services / Solutions	▪ Three main services: i) Exergaming: audio, visual and tactile feedback supply; Ii) Freezing of Gait avert by analyzing patient cues and training preventive methods. Iii) Biofeedback thanks to a device able to masure daily activities and provide audio, visual and tactile feedback to train cognitive and motor functions.	▪ The main objective of the project is to map and monitor parkinson´s disease characteristics by longer timeframes and with a more quantitative approach to be able to analyzed and improve the way that the disease is undestood nowadays.	▪ Real time monitoring of patients motor status and dyskinestesia evaluation. ▪ Disease management services development for doctors to provide them tools that allow the to administrate more personalized treatments.
Level of specialization *(1 low (generalist); 5 High)*	5 High	5 High	5 High
Penetration Stage *(1 R&D; 10 Market consolidation)*	Research & development (expected finish: 2014)	Research & development (expected finish: 2014)	Research & development (expected finish: 2014)
Geographical Scope	Europe	Europe	Europe
Competitive strategy	▪ The consortium is focused specialized in parkinson solutions development with a high focus on the healthcare professionals. 	▪ High focus on clinical investigation. ▪ The consortium main objective consist on creating a platform able to monitor Parkinson´s patients, collect data and perform analysis to improve the medical understanding of the disease. 	▪ The consortium´s main goal is to create a Personal Health System (PHS) for managing the Parkinson Diseas in it medium and advanced stages. 
Value chain position	▪ The organization is positioned in the 4 first ladders of the eHealth industry value chain: i) Medical research, ii) Technological research, iii) Components and Devices Development and iv) Services and solutions development.	▪ Focused on Medical Research and Patient Monitorization as the final objective of the project. ▪ To do so, the are now active in technological research, Components and Devices development and Services and Solutions development.	▪ The consortium has a dual strong position: • Healthcare: Focused on Medical Research and monitoring / data management. • Technology: Focused on SWS and HMRS development.
Ecosystem	▪ Cupid is in close contact with the doctor and their applications are intended to be easy to use not only for the patient but also for medicine professionals.	▪ Multidisciplinary team that includes, Doctors (specialist in Parkinson and Genetics), Universities, Technological Centers specialized in Healthcare andeHealth companies.	▪ The consortium has 11 players. (5 technology development and 6 focused on healthcare). ▪ Double approach (patients and medical professionals).

Parkinson´s focused solutions. In-depth business analysis

Comparative table

ORGANIZATION / CHARACTERISTICS	CUPID (Closed-loop system for personalized and at-home rehabilitation of people with Parkinson's disease)	SENSE·PARK	REMPARK
Products and technologies used			
- Smart Wearable System	✓ (sensors (trunck, thigh, shank), wearable computer and inertial sensors)	✓	✓ (smartphone (for feedback, data communication and monitoring).
- Human Montion recognition system	✓ (Sensing body nivenents interface)	✓	✓ (Wrist-band, waist band, electronic actuator (haptic cueing and step initiation).
- Software	✓ (Smartphone-based freeze prediction, Gamification software)	✓	✓ REMPARK server (for doctors to analyse information).
- Other	✓ (Headphones)	✓	✓ (Headset, medication pump (automatic rescue dosed).
Services / uses / solutions			
- Detection		✓	✓
- Prevention		✓	✓
- Treatment / training	✓ (Exergaming, Freezing of Gait)	✓	✓
- Rehabilitation	✓ (Biofeedback)	✓	✓
Indicators measured			
- Movement & motor status		✓	✓
- Freezing of gait	✓	✓	
- Tremor	✓	✓	✓
- Bradykinesia		✓	
- Cognitive function		✓	

Parkinson´s focused solutions. Technology surveillance

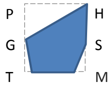
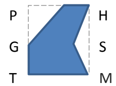
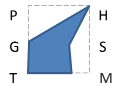
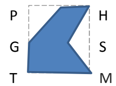
ORGANIZATION	BEST PRACTICE
VERVE	**Technology specialist with a multi-disease approach. Development of modules based on the same technology for multiple medical purposes** • The Verve is an multicountry European project developed with the objective to improve the quality of life of people with neurological disorders. The Verve incudes in their portfolio a system to improve the condition of Parkinson patients. • Virtual reality development to improve Parkinson´s freezing of gait symptom. The consortium has develop a training tool that help patient to overcome freezing of gait, a debilitating symptom of Parkinson's patients based on a sudden inability to move their legs when walking. By navigating in a virtual labyrinth, the user has to achieve different goals similar than the freezing triggers they could face in the real life. • Multi-disease approach, technology specialization. Based on technology tools, the consortium has developed different services for different neurological disorders like fear, apathy or Therefore, the organization is able to create synergies, using the base od the tools developed and adapting them to particular disabilities.

Parkinson´s focused solutions. Main conclusions

- The projects analysed had a **similar value proposition**. Sense Park is the project that has a broader perspective and also the project whose devices measures the bigger quantity of parameters.
- Rem Park and Cupid are **more focused on offering to the patient valuable services** to treat their Parkinson disease. In this projects the aim is to treat and monitor the disease remotely. On the other hand, in the Sense Park, the project not only aims to improve the patient health, but also to **monitor** and use the information of all the patients to improve the **general research in Parkinson** in order to better understand the disease.
- This market segment is focused on a very specific niche and therefore it is very important to have the right network of partners, rather than marketing or commercialization capabilities. **Network** and **reliability** are key aspects to be successful.
- **Healthcare professional support** is another key aspect to implement this kind of developments in the market. This kind of services has not only to offer valuable aspect to the patients. They also have to be **attractive to the professionals (doctors and paramedical)** that would use and would recommend it.
- Medium-high **technological constraints** in the three systems analysed. While this can be very basic for a particular segment of citizens, it can be a important barrier for others. There exist certain areas where the Internet is not accessible. Moreover, there are demographic groups without the required IT knowledge to use this kind of products. **Accessibility, ergonomics and usability** have to be always the aspects to think about before starting to develop this kind of developments.

Information management portals. In-depth business analysis

Comparative tables

ORGANIZATION / CHARACTERISTICS	caradigm	Microsoft HealthVault	IBM	DISCIPULUS Roadmap for the Digital Patient
Services / Solutions	• The company has a broad solutions portfolio organized in 6 main areas: i) healthcare surveillance, ii) disease management, iii) Population Health Management, iv) Identity and access management, v) Health information exchange and vi) Intelligence platform.	• EMR patient management system. • Activity monitoring management system. • SWS marketplace.	• On demand IT services to implement personalized medicine in the healthcare sector.	• Virtual health and disease simulations. • Predictions about your real health. • Determine the best treatment based on the personal characteristics of each individual.
Level of specialization *(1 low (generalist); 5 High)*	3: medium	2: medium-low	1: low	2: medium-low
Penetration Stage *(1 R&D; 10 Market consolidation)*	8 Market commercialization (medium stage)	7 (Market commercialization (early stage)	8 (Market commercialization (medium stage)	4 Research and Development (expected finish:
Geographical Scope	Worldwide	Worldwide (Special focus on North America)	Worldwide (Special focus on North America)	Europe
Competitive strategy	▪ IT supplier focused on helping organizations to improve care, reduce cost and manage heathcare risks. 	▪ To become the leading healthcare information portal, providing the user complete information about his electronic medical records and his daily life habits (wellness and performance). 	▪ Focused on general healthcare. ▪ Technology specialists. ▪ Leaders in IT specialized solution to implement personalized medicine in the healthcare industry. 	▪ The main goal of the project is to create a computer program that will be able to generate a virtual living version of the patient. 
Value chain position	▪ Mainly focused as a services and solutions developer to 3rd. parties.	▪ ICTC expert and on line retailer (online services and solutions developement).	▪ High focus on services and solutions development.	▪ Centered in the first two ladders of the industry value chain: Medical research and technological research,
Ecosystem	▪ Caradigm´s philosophy highlight the importance of builing a strong ecosystem in healthcare industry nowadays. ▪ 12 partners (MACs, eHealth companies, ICTC, Hospitals, Doctors, Services and applications developers.	▪ Alliances with medical organizations, doctors, smart wearable developers, and Medical Asset Companies.	▪ IBM act as direct partner of other healthcare players or as a consultant mainly with the following players: Hospital / Doctors, Medical Foundations, 4th. Sector and Telemedicine providers.	▪ The consortium is focused on research more than in bringing a product or a service to the market. ▪ The parters are several universities and one technological research center in IT.

Information management portals. In-depth business analysis

Comparative tables

CHARACTERISTICS / ORGANIZATION	caradigm	Microsoft HealthVault	IBM	DISCIPULUS Roadmap for the Digital Patient
Products and technologies used				
- Healthcare Surveillance	✓	✓	✓	✓
- Disease Management	✓	✓		✓
- Population Health	✓	✓	✓	
- Identity and access	✓	✓	✓	
- Health information exchange	✓	✓	✓	
- Intelligent platform	✓		✓	✓
- Marketplace development		✓		
Services / uses / solutions				
- Detection	✓	✓	✓	✓
- Prevention	✓	✓	✓	✓
- Treatment / training	✓	✓	✓	✓
- Rehabilitation	✓	✓	✓	✓

Information management portals. Technology surveillance

ORGANIZATION	BEST PRACTICE
Allscripts	**Healthcare data management specialist, openness and adaptability. Global supplier of data management** • Broad data management solutions to healthcare organizations. Allscripts provide the healthcare institutions with IT systems capable not only to manage their clinical records, but also all the financial and business management indicators. Therefore the company is a global supplier of data management. • Openness and adaptability. The organization offers on demand solutions to their customers based on their particular information management need.
Preventice Care Platform	**IT specialist with valuable partners and a comprehensive ecosystem** • Preventice offers mobile healthcare solutions based on mobile health platforms. • Focused on the information management, not in their devices. Despite Preventice also commecialize a SWS, the company is centered in their information management system (Preventice platform). The main objectives of this platform are: to avoid hospitalizations, to reduce re-admittance, to increase staff efficiency and to speed time to intervention. • Partners and ecosystem. Preventice have a long list of partnerships allow the eHealth value chain including: life sciences, hardware developers, payers, software developers, and Retailers.
HealthSystems	**Patient centric solutions. Integration of the information for multiple inputs to provide the best possible healthcare record information system** • Healthcare systems offers Clinical patient information management to small and medium size healthcare organizations.. • Centricity practice solution. The system developed by Healthcare Systems provide the doctor easily the key information the look for each patient, giving them tools to be more efficient. • Reliable partners. The company is own by GE and have more than 10 partners with extensive experience in the healthcare industry. This aspect provides Health Systems reliability and trustworthy to their potential clients
@Point of Care 360™	**Commercial approach (database of more than 100.000 clinicians) and business model differentiation** • Point of Care 360º is a platform that provides the clinicians with accurate real time information to their patients. • Doctor centric approach. More than 100.000 clinicians used the platform system to manage their patient information. • Specialization. The platform have specialized software by clinical specialization.

Information management portals. Main Conclusions

- **Management portals are highly focused on Healthcare**. The most relevant players in the market are ICTC companies that are trying to implement their IT know-how creating solutions the healthcare oriented players of the eHealth value chain.

- The **Wellness or preventive** approach, understood as the elaboration of software tools capable to analyse user data and prevent them to become sick is **considered a growing trend**. This kind of organizations are interested in develop early warning disease systems. → Supercomputer Watson of IBM. IBM is using the power of the computer to analyse millions of patient data and be able to detect diseases symptoms with a sufficient time to be able to design a treatment capable to slow down or even stop the disease.

- So far, these kind of companies present **low interest in the Performance market** and only Health Vault has made little positioning in this segment. However, considering that the new personalized medicine approach considers a key aspect to prevent diseases and stay healthy with the regular practice of sport, it is expected that in the coming years these kind of companies **will integrate software** related with sport activity management and even could partner with Smart Wearable Manufacturers focused on Performance.

- In the B2C market, **openness is a key aspect** for developing a **leadership position in this segment**. Microsoft has understood well the opportunities that a online market place can provide after have failed in the development of application portals for their laptops or for the mobile phones as Apple and Google have made.

Information management portals. Main Conclusions

- Microsoft is implementing a similar strategy in the healthcare market. To do so, the company has created their own healthcare division partnership with a broad number of eHealth players. Moreover, Microsoft is trying with **Healthvault to become the link between the patients**, the users and other eHealth providers creating a platform where is possible to buy eHealth related products as well as to manage personal healthcare information.

- In the B2B market (Discipulus, IBM, and Caradigm), openness is also important but is understood in a different way than in B2C. These companies are also partnering with eHealth key players (Hospitals, Universities, Patients associations), mainly to develop **"on demand" eHealth solutions.**

- **Economies of scale as well as reliability** are two key aspects to be able to compete in the IT management portals healthcare segment. Multinational companies are positioning in this market and it is **difficult for SMEs to compete with them**. However, there are companies like Preventice or Point of Care 360º that are **specialized in particular market niches** and they are not pursuing the objective of becoming relevant in the mass market.

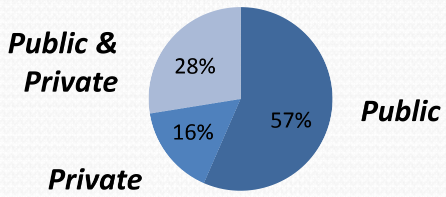
- In this segment, the value chain approach is also relevant. Most of the companies are focused on **developing solutions** to meet the needs of the **end user directly**. There is **room for development** tools oriented for the doctors that help them in researching and developing **early warning system indicators** that enable them to develop a medicine more focused on prevent than

1. PROJECT STATUS
2. COMPETITIVE STRATEGY
3. MARKET STUDY
4. SIMILAR INITIATIVES BENCHMARKING
5. **DEMAND PERCEPTION ANALYSIS**
6. VALUE PROPOSITION ANALYSIS
7. OPPORTUNITIES AND THREATS
8. BUSINESS MODEL DEFINITION
9. NEXT STEPS

Main conclusions

Survey sample characteristics

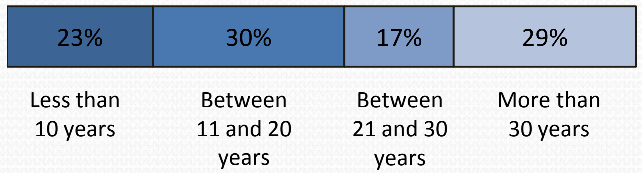
Type of center



70

Healthcare professionals (SUDOE area)

Years in the profession



- There does **not exist a direct correlation** between the willingness to use eHealth solutions and the number of **years of experience** as a practitioner.
- Among the healthcare community, there exists **higher propensity to use mobile and information management portals** than Smart Wearable Systems.
- Low rate of utilization of **smart t-shirts** among practitioners nowadays. **Not a general intention of using in the next years** (Survey: 48,7% is willing to use this kind of devices for activity monitoring in the future).
- **Cardiologists** present the **highest interest** in using watches, wristbands and smart t-shirts.

Main conclusions

- Doctors working in **private organizations are more open to use new technologies.**
- There are **2 parameters** that outstand over the rest when talking about the **key aspects** of a Smart Wearable Systems:
    - **Data precision** has emerged as the most important aspect.
    - **Comfort / easy to use**.
- On a secondary level, **technical service** is also relevant for doctors.
- On the other hand, **medical focus** and **data variety do not seem as priority** factors among healthcare professionals.
- **Parkinson doctors** seem **more willing** to use both **Smart Wearable Systems and Human Motion Monitoring Systems** than the average of all the medical specialities.
- For Parkinson, doctors value the most having **quantitative information** about the exercises performed **and being able to analyse** the **historic data of the patient**.

Main conclusions

- **Main barriers** for the development of eHealth solutions according to healthcare professionals, including all specialists:
    - The **economic aspects** outstand among the rest possible barriers. Doctors working in public hospitals give more importance to these economic barriers than those working in private healthcare organizations.
    - Directly related with the above mentioned, **public support** is also named as an important barrier.
- On a secondary level, the **understanding** between **technology developers** and **healthcare professionals,** are also relevant factors from the point of view of the doctors when developing eHealth applications.

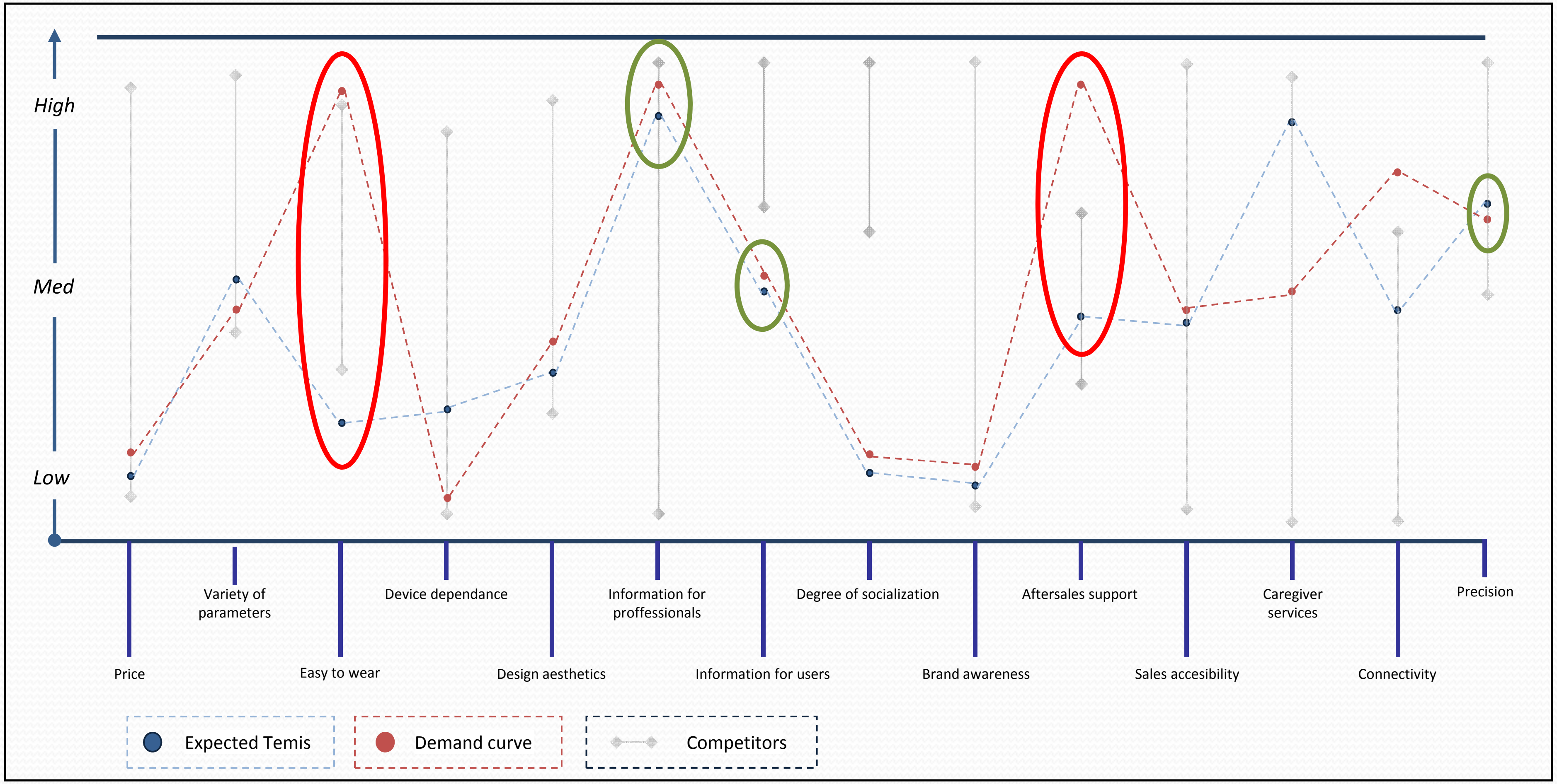
Main conclusions

- Main conclusions about the development possibilities and most suitable prescribers of eHealth solutions:
  - **Healthcare professionals** consider themselves as **the best players to promote** the use of eHealth solutions.
  - **Hospitals and public healthcare institutions** are **also considered important** value levers to implement eHealth solutions in the healthcare systems.
  - On the other hand, the healthcare professional community consider that **health insurance companies, Pharma and technological based companies are the less suitable** organizations to develop the eHealth industry.

1. PROJECT STATUS
2. COMPETITIVE STRATEGY
3. MARKET STUDY
4. SIMILAR INITIATIVES BENCHMARKING
5. DEMAND PERCEPTION ANALYSIS
6. **VALUE PROPOSITION ANALYSIS**
7. OPPORTUNITIES AND THREATS
8. BUSINESS MODEL DEFINITION
9. NEXT STEPS

Activity monitoring and decision support. Value curve

- According to the market analysis, the competitors analysis and de demand analysis, and considering TEMIS characteristics, it is able to define the comparative Value curves to identify opportunities and threats.



Activity monitoring and decision support. "4 actions matrix"

CREATE

- Customizable solutions by specific user segment, mainly healthcare.
- Give an active role to the caregivers. Socialization through customer relatives network.
- Early warning disease indicators based on the data analysed.
- Customer service and aftersales (end user and healthcare professionals).
- Network and links with key players (doctors, public administration, para-medicals, patient associations, …).
- Fostering the participation of Public Administration by funding prevention related solutions in Healthcare.
- Branding.

INCREMENT

- Data caption accuracy.
- Data privacy.
- Easy to wear.
- Design-to-cost activities to develop low-cost solutions.
- User and prescriber sensitivity to eHealth.

A meaningful value curve

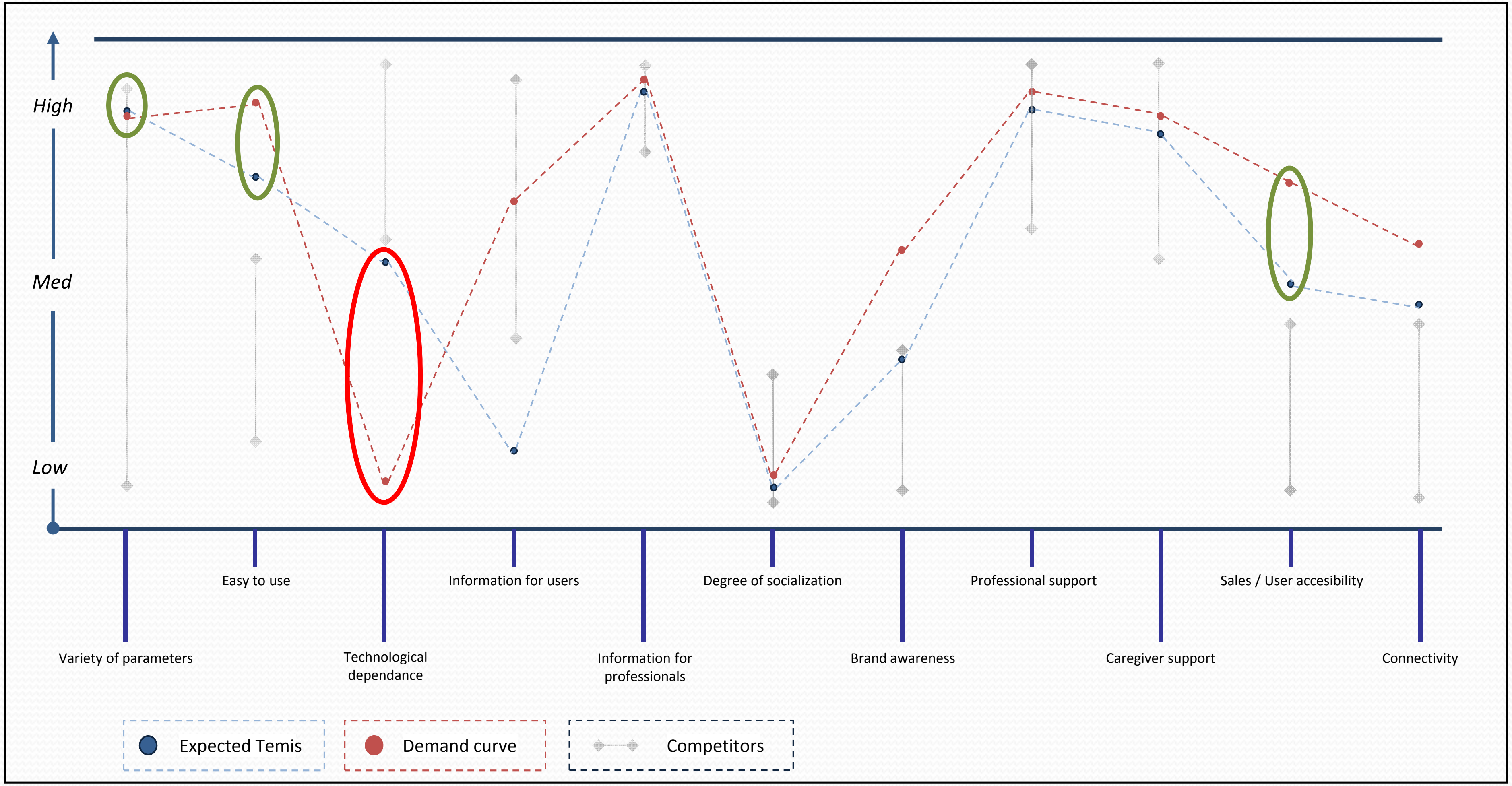
DECREASE

- Dependance of third devices (Smart clothe).
- Aestethics as a less important aspect than usability or cost.
- Complexities in the utilization of the solutions provided.

ELIMINATE

- Parameters non useful for every specific segment of users.
- Sociability, important factor in fitness and wellness but not healthcare oriented solutions.

Parkinson´s focused solutions. Value curve

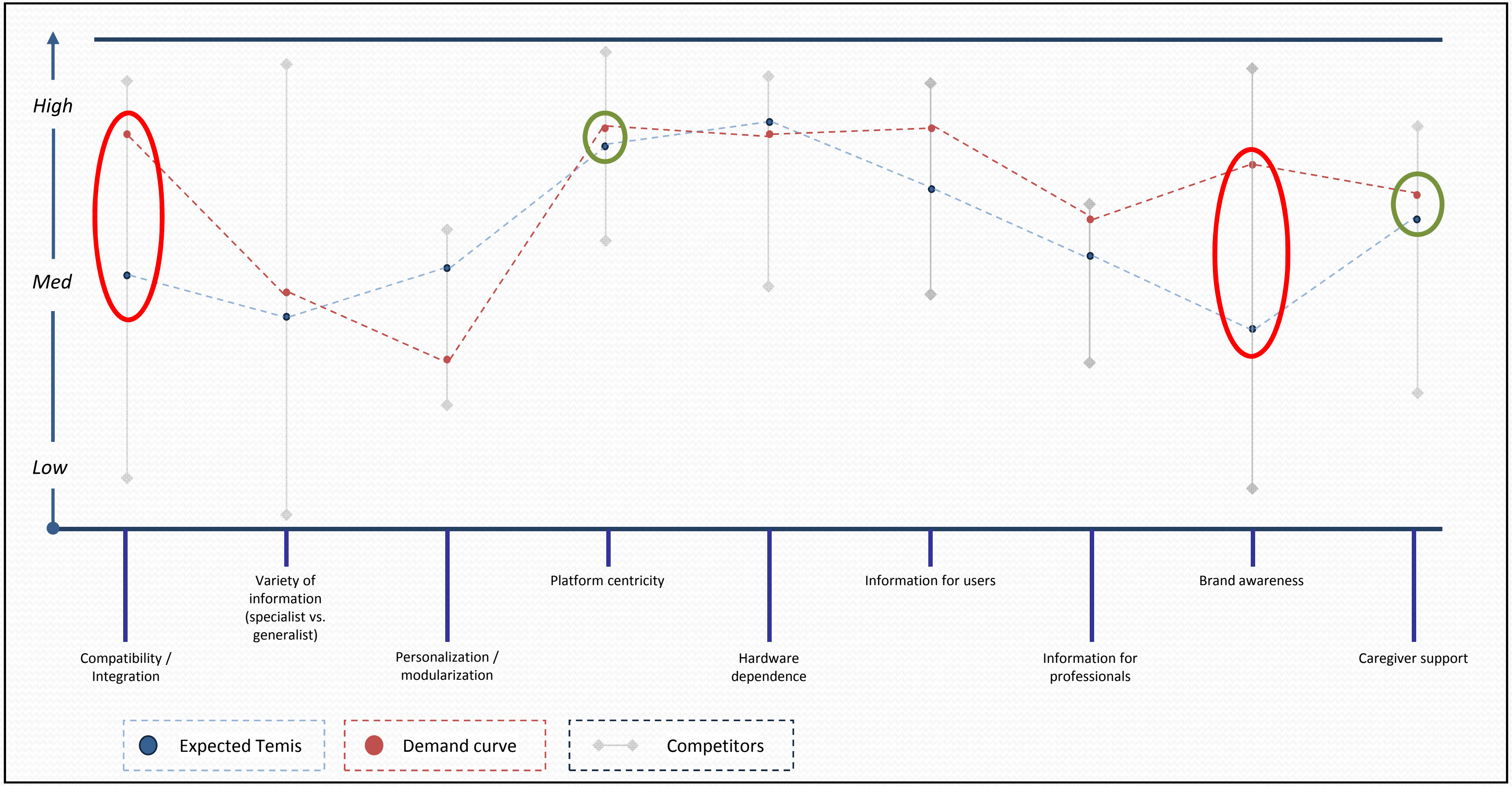


Parkinson´s focused solutions. “4 actions matrix”

A meaningful value curve

CREATE	INCREMENT
▪ Product packages easy to understand for end users, caregivers and healthcare professionals. ▪ Give an active role to the caregivers. Caregivers services and information. ▪ Complementary information and solutions for Parkinson treatment and monitoring. ▪ Customer service and aftersales (end user and healthcare professionals). ▪ Branding.	▪ Variety of parameters. Information for users, caregivers and doctors. ▪ Easy to use and help for caregivers support. ▪ Data management that allow researchers to better understand Parkinson disease since a more quantitative perspective.
DECREASE	**ELIMINATE**
▪ Cost of the treatment. ▪ Third party technology dependance.	

Information management portals. Value curve



Information management portals. "4 actions matrix"

CREATE

- Modularization and verticalization services.
- Focus on solutions and information more than on devices.
- B2B approach focused on healthcare professionals rather than in the end user.
- Caregivers services and support.
- Brand awareness around the selected customers.

INCREMENT

- Management tools for healthcare professionals.
- Metrics, algoritmths and other semantic data related tools.
- Partnerships with key players (healthcare professionals, hospitals, public institutions related with health).

A meaningful value curve

DECREASE

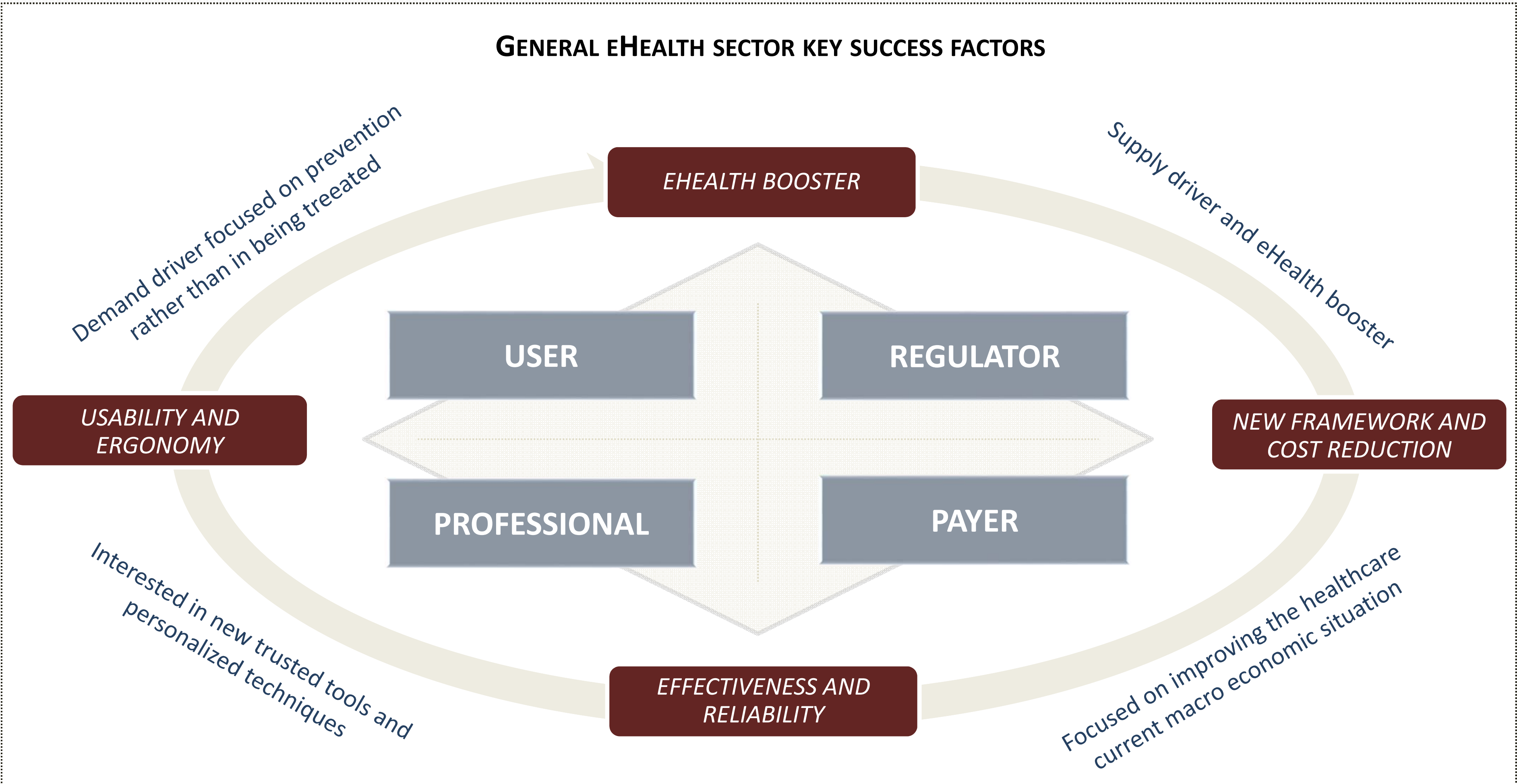
- Hardware dependance. Most of this kind of companies are highly focused on IT systems without paying attention to the devices needed to collect patient information.

ELIMINATE

- Closed ecosystems and closed information management portals → Modularization and openness are two important factors to create long term business models.
- Direct B2C approach to end users.

Key Success Factors

General eHealth sector key success factors



1. PROJECT STATUS
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3. MARKET STUDY
4. SIMILAR INITIATIVES BENCHMARKING
5. DEMAND PERCEPTION ANALYSIS
6. VALUE PROPOSITION ANALYSIS
7. **OPPORTUNITIES AND THREATS**
8. BUSINESS MODEL DEFINITION
9. NEXT STEPS

OPPORTUNITIES

- **Better data precision** of e-textile devices than wristbands and smartwaches. Data precision is **one of the most critical parameters** for medical professionals.
- **Low-cost specifications** characterizing TEMIS solutions is critical for professionals.
- **Medical approach** of activity monitoring solutions is far less developed than the User / Patient approach. The main competition is being held in the wristband and user focus devices for wellness.
- Great opportunity of offering **"Usage Ecosystem" solutions**. Professional assistance services are scarcely offered by competitors (even in the healthcare segment) and so does Caregivers and Relatives solutions.
- **Diversity** of high knowledge, skills, technological resources, geographic sites and institutional prestige to maintain **high performance in the long run**.
- eHealth growth is assured and some industry players have not defined their positions yet, so there is an opportunity to **build wide and unique ecosystems**, mainly with Public Administration, Assurances companies, Pharma and Biotechnology companies and Medical and Patients Associations.
- Medical demand is more open-minded to mobile and internet sites than to wearable gadgets. As TEMIS has both systems, there is a chance to **approach the market through information solutions** better than through specific data caption systems.
- Specialization in customization and project oriented organizations, opposite to traditional healthcare companies, focused on service, process oriented organizations and mass production.
- As an open system, capable of being adapted to any activity monitoring, TEMIS has a market opportunity in **allowing third-party solutions** based on the TEMIS platform.

THREATS

- **Increasing level of competition** is expected as the market will be settling, especially in generalist markets where multinational organizations are already trying to establish and define industry standards.
- In the healthcare segment, **some companies** have a recognized brand and a solid medical network with the **ability of reaching a massive distribution of new solutions in a short time**, forcing new entrants – as TEMIS – to have a better solution and / or to focus on small segments (geography, disease, etc).
- Risk of **rapid obsolescence** due to the high emergence of new technologies and materials. Need for permanent **R+D as a structured activity and continuous investment**.
- **Improvable technological adoption** among both the patients and the healthcare professionals.
- Demand perception understands eHealth from a **Public Administration support** to be successful. Economics aspects are the biggest barrier for eHealth becoming massive.
- There are **other systems** (wristbands and smart-watches) more convenient and apparently **easier to use** for the customer than the smart clothe based solutions. This is a barrier to introduce the TEMIS smart clothe for daily life monitoring to be counter with the accuracy of data, for instance.
- **Need for additional technological infrastructure** to run the TEMIS devices. Mobile data / Wifi infrastructure for the T-shirt and a laptop / PC and ISP (Internet Service Provider) for the Parkinson's Kinect Solution.
- On the other hand, ISP and other technology companies are interested in eHealth so that partnerships could help achieve the goals of both in the eHealth market.
- Risk of cannibalizing the products to the solutions.
- Need for **evolving** from the current **multi-organizational consortium** to a more **permanent structure** to deploy from Sales to Aftersales activities, requiring common goals and coordinated efforts. A common long term strategy should be determined.
- Reduced homogeneity in terms of interconnectivity and **interoperability standards** between European eHealth players.
- **Lack of a homogeneous legal framework** in the European Union, specially regarding: data privacy, data protection and public reimbursement.

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General framework of stakeholders for TEMIS

Business to Consumer (B2C) Option

Not recommended due to:

- Mature market
- High competence
- Need of well established sales force and technological service
- Low brand awareness
- Proffesional focus

Business to Business (B2B) Option

Not recommended due to:

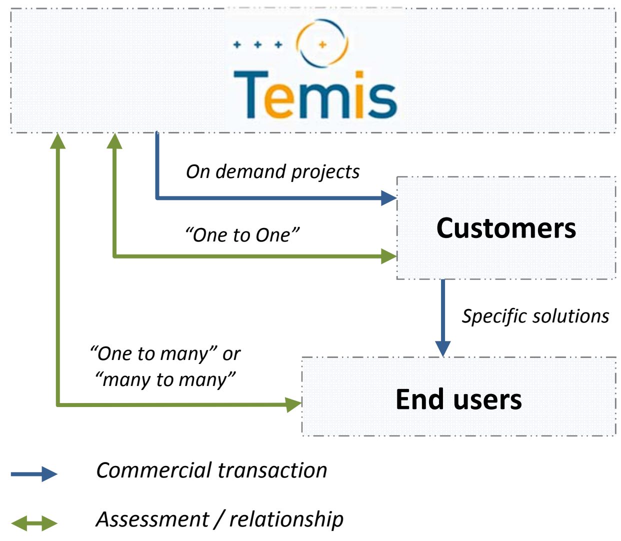
- Incomplete approach (not focused on the end user)
- Market has not reached maturity levels to approach the customers under this framework.
- TEMIS does not have the require network.

Business to Business to Consumer (B2B2C):

Recommended

Mixed approach that tries to take the advantages of the two options above mentioned. It is believed that this approach is the most interested for TEMIS current capabilities and for the industry status-quo.

Business to Business (B2B2C)



TEMIS: One project, three stages of development based on the expected evolution of the eHealth indutry in the SUDOE area

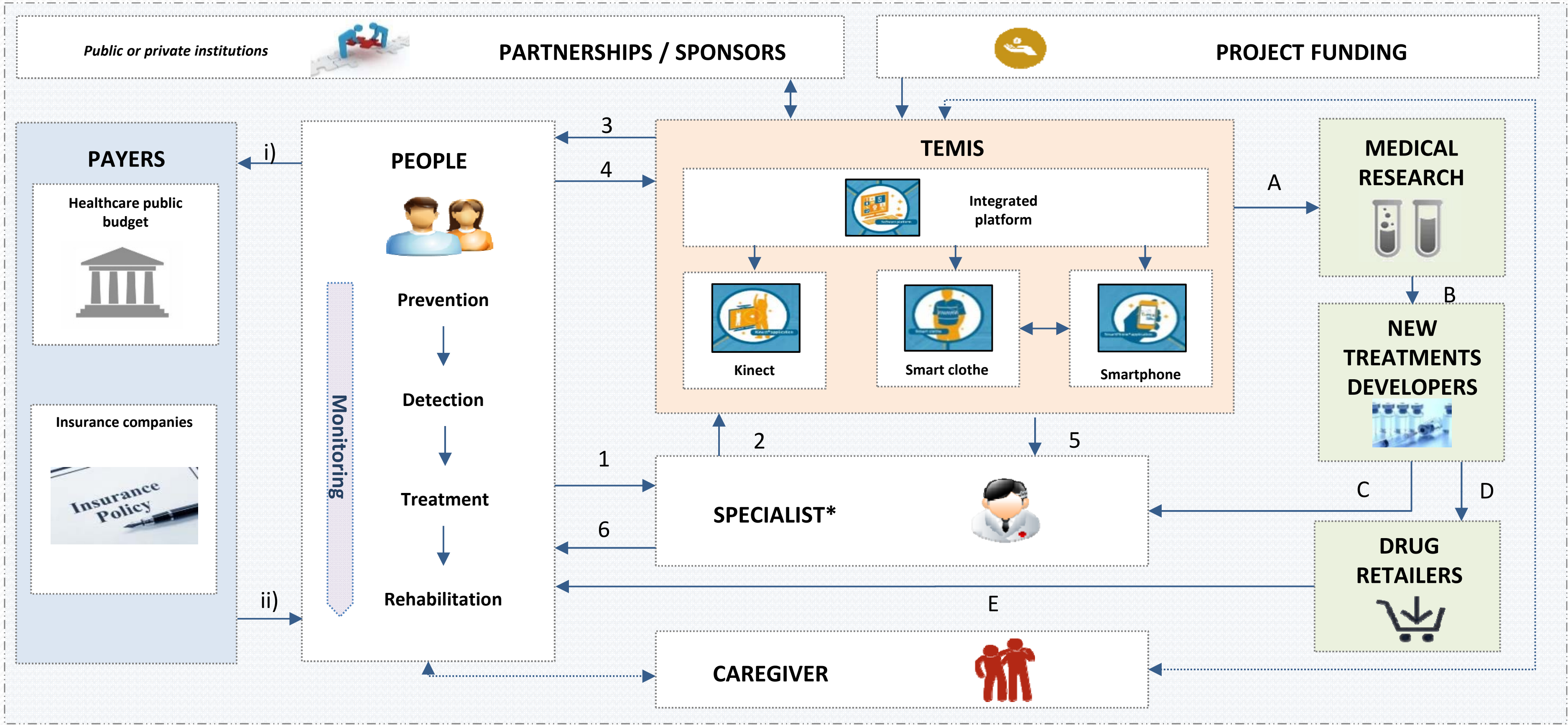
STAGE 1
Continuity based on obtaining competitive private and public funding. Success stories as value levers for future developements.

STAGE 2
Revenue increase via private projects and dicrease of the dependance of competitive public funding

STAGE 3
eHealth practices increased in popularity, End users getting used to eHealth solutions

8. BUSINESS MODEL DEFINITION

General framework of stakeholders for TEMIS



Phase 1	Phase 2	Phase 3
Competitive public funding: 80%	Competitive public funding: 50%	Competitive public funding: 15%
Customers: 20%	Customers: 50%	Customers: 85%

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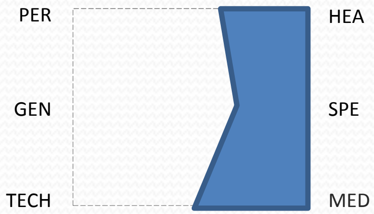
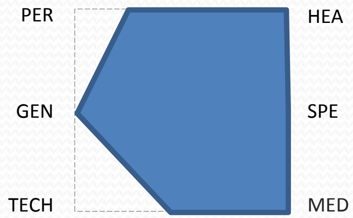
8. BUSINESS MODEL DEFINITION

General framework of stakeholders for TEMIS

From



To



1. Select a one first experience in a specific disease or special activity, with concrete partners and project format to achieve a first successful market reference as a consortium, by:
   - Developing a project with a private hospital organization or a specialized activity center.
   - Developing a project with a public administration.
   - Getting involved in any European project related to eHealth market integration (see next page).
2. Manage growth applying the first successful experience to other targets with the same needs (disease). Get brand recognition.
3. Evolve to a mature models (common structure, resources, shares…) when having a solid basis to be competitive in the long term.
4. Extend through vertical solutions (others diseases and activities).

Next eHealth European projects calls related to TEMIS Vision

Next calls of projects funded by the European Union related with Personalising health and care

Project name	Specific challenge (summary)	Total call budget	Deadline Date
PHC-26-2014: Self management of health and disease: citizen engagement and Health	Empower citizens to manage their own health and disease in order to design a more cost-effective healthcare systems by improving utilisation of healthcare, enabling the management of chronic diseases outside institutions, improving health outcomes, and encouraging citizens to stay healthier	€ 185,2 million	15-04-2014
PHC-34-2014: eHealth interoperability	There are a number of challenges to effective eHealth service deployment in Europe: i) stakeholder consensus, ii) directive on patients´ rights, iii) Semantic data, and iv) Facility connectivity.	€ 185,2 million	15-04-2014
PHC-25-2015: Advanced ICT systems and services for integrated care	Develop integrated care models that are more closely oriented to the needs of patients and older persons: multidisciplinary, well-coordinated, anchored in community and home care settings, and shifting from a reactive approach to proactive and patient-centred care.	€ 162 million	21-04-2015
PHC-27-2015: Self-management of health and disease and patient empowerment supported by ICT	Empower citizens to manage their own health and disease in order to design a more cost-effective healthcare systems by improving utilisation of healthcare, enabling the management of chronic diseases outside institutions, improving health outcomes, and encouraging citizens to stay healthier	€ 162 million	21-04-2015
PHC-28-2015: Self-management of health and disease and decision support systems based on predictive computer modelling used by the patient him or herself	A notable number of clinical situations could be prevented by monitoring and managing the patient health by him or herself. This challenge tries to foster self-management, predictive personalised models and personal health systems and other sources of data (clinical, biological, therapeutic, behavioural, environmental or occupational exposure, lifestyle and diet etc.)	€ 162 million	21-04-2015
PHC-29-2015: Public procurement of innovative eHealth services	The sustainability of eHealth solutions and services is considered as one of opportunity to develop better healthcare delivery processes as well as improving cost efficiency while maintaining or improving patient satisfaction. However, the pace of development has been slow and penetration of ICT in healthcare is so far low in comparison with other public or private sectors.	€ 162 million	21-04-2015
PHC-30-2015: Digital representation of health data to improve disease diagnosis and treatment.	Digital models, tools and standards with application for clinical targets are currently available. There is however a need for greater integration of patient information. Any integrative digital representation (Digital Patient) must also allow meaningful knowledge extraction and decision support, enabling the implementation of personalized medicine approaches.	€ 162 million	21-04-2015

Source: Ehealth Action Plan 2012 – 2020. European Union

Proposed Business Model for TEMIS

Strategic Challenges

- Specialist approach: become a strong player in a few specific medical specialties and in concrete geographic areas
- Solutions based on a general platform but with a vertical development → from general structures, being capable of developing tailored solutions
- Cost effective and affordable solutions as a key advantage among competitors
- Mix between economic and social objectives
- B2B2C Approach

Key Partners / Ecosystem

- Public Administration
- Patient and subjects associations
- ICTC Companies
- Infrastructure IT vendors
- Device Manufacturers
- Healthcare professionals (Doctors, Caregivers, Nurses, …)

+ If economic development is focused on projects, most of the customers described could become partners and links of TEMIS´ ecosystem

Key Activities

- Project Management
- Design to cost
- Technical support
- R&D development and constant actualisation to compete based on strong foundations

Key Resources

- Economic funds to continue with the development of new projects
- Specialized staff capable of designing tailored solutions

Key Capabilities

- Team play
- Flexibility and polyvalence
- Competitive sensitivity
- Coordination and alignment

Value proposition

- Cost and time savings and personalized prevention decisions through daily activity monitoring with tailored decision support and Parkinson patients movement evaluation
  - Data accuracy
  - Medical approach
  - Affordable on-demand solutions
  - Data protection and Ethics based management
  - Easy to use
  - Caregiver support
  - Cultural and geographical proximity (SUDOE area)
  - Technical reliability and trustworthiness
  - Flexibility and polyvalence

+ A first successful business case is key to enhance the value proposition on the early stages.

Channels

- Sales force
- Online and telephone support
- Healthcare professionals
- Public administration
- Competitive Public Funding

Customer relationships

- Specialized forums and fairs
- Specialized articles and publications
- Direct contact
- Web: Blogs / Twitter
- Community
- Free trial offers
- Awareness activities
- Participation in eHealth contests

Customers

- Private hospitals / Healthcare groups
- Public administration (Regional, National and European)
- 3rd sector private companies
- High performance institutions
- Insurance companies
- Pharmaceuticals

+ Public and private approach

End users

- Parkinson patients
- Cardio and breath patients
- Obese (Cardio / Diabetes)
- Elderly care
- Healthy (Special high performance activities)

+ In every group : i) patient ii) caregiver and iii) professional (Doctors, Coach).

Costs

- Temis partners fees
- Providers
- Research and Development
- Promotion

Economic revenues

- Private project fees
- Public administration project fees / Competitive public funding
- Platform support and data management
- Product Rental

Non-economic revenues

- Intellectual property
- Last state of the art technology, knowledge and resources
- Contribution to general healthcare improvement in SUDOE area.

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9. NEXT STEPS

- Business Model Framework (Phase 7)
  - Validation of the model proposed and modification if needed.
  - Financial forecast – (*costs estimation needed*).
  - Management model guidelines identification.
- Definition of an action plan to deploy the Business model defined
  - Communication plan.
  - Definition of Axis and strategic lines.
  - Initiatives and strategic actions deployment.
  - Identification of potential parterns / customer for starting new projects.

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