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Deliverable Summary

This document reports on the initial business plan for the GiraffPlus project. This is a preliminary view of the business plan development methodology, market, value proposition, market discipline, service definition and financing requirements. This is a M18 deliverable; the M36 version will contain the final business plan.

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1 Introduction

1.1 Scope of the document

The document is the preliminary business plan for the commercialization of the GiraffPlus solution under development. It provides a foundation for the creation and setup of a new unspecified entity (which we call “Newco” in this document) that will lead the commercial market entry. Therefore it addresses not only the commercial plan (market strategy, value proposition, etc.) but also the business plan (financial requirements, operational requirements and setup, funding strategy, etc.) Section 8 includes a brief discussion about possible commercial entities – i.e. who “Newco” could be.

1.2 Deliverable structure

The document first describes the methodologies proposed for developing the business plan. These are important decisions because the chosen models must be sufficient to bring to light the required elements to develop an accurate and complete plan. Next it provides a classic market overview including problem statement and analysis, and value proposition by stakeholder group. Then it describes the GiraffPlus service definition, and completes a business “canvas” to define the key operational requirements and issues. Finally it describes the operational considerations, funding requirements and financing strategy, and next steps for execution.

2 Methodology

We have examined many tools and models for business plan development and analysis from various industries. Each is optimized for a certain types of markets, businesses and key issues so in most cases no single model is a perfect match for the requirements of a specific business. Some business developers choose to create a custom hybrid of models in order to assemble all the designed elements required for a specific business situation. This approach risks making the overall model too cumbersome or losing the essential value of any one model. However, we have the advantage of considerable business planning and startup experience within the consortium, so in this case it actually makes the process more efficient.

Therefore, we have combined three models to develop the essential elements of the business plan. Their description and justification are as follows:

1. Stakeholder Analysis¹

This is the classic approach for understanding the market at both a broad and detailed level. It is particularly important for the GiraffPlus space because the stakeholders are a large and complex group with subtle inter-connections. This analysis drives several components of the commercial plan including the value proposition, service definition and marketing messaging. Nearly all business models contain some version of this process.

2. Market Discipline

Market Discipline theory² is a well-established model for determining the customer relationship, the company's approach to its customers and indeed the culture of the company itself. It is not as important an analysis for established companies but it (or a similar process) is mandatory for starting a new one. We chose it because it is simple and forces up-front decisions about the nature of the business, particularly its relationship to its customers (a critical factor in the GiraffPlus space).

3. Business Canvas

The Business Canvas³ is a relatively new model that has become quite popular in the past few years and is one of the recommended models for AAL, a market closely related to GiraffPlus. Its value to this business plan is that it divides focus equally between strategic issues (such as value proposition and target customers) with practical issues (such as staffing, financial modeling and key activities) which is especially important when starting a new company. The Business Canvas is the foundation model for this document and drives most of our work.

3 Market Overview

3.1 General Description

We quote from the introduction of the original GiraffPlus proposal because it is still a good summary of the problem we are addressing:

The prolongation of independent living for promotion of a healthier society is a social and economic challenge. Elderly people wish to remain in their homes as long as possible as this is in general conducive of a richer social life and paramount to maintaining established habits. To adhere to this wish is also positive from an economic perspective as the cost of care at home is almost always much less than the cost of residential care.

The challenge of elderly care is well understood at nearly all levels of the industry today. Social and medical care organizations, informal and formal caregivers, politicians and policy makers, technology and service providers are all pursuing diverse solutions to this problem in earnest.

It is useful to describe the current problem from two perspectives – *social care* and *health care* – and how the solution spaces for these are evolving to a single space that GiraffPlus addresses. *Social care* is concerned with providing physical and supervisory care, as well as social connection for elderly in their home as long as possible – as long as they can maintain reasonable independence with a good quality of life. The measures for this are primarily around safety and ability to deal with health problems in the home, all balanced against the cost of doing so compared to full-time nursing home care.

As the population ages and the burden of elderly care increases, many technology solutions have been proposed, developed and tested to assist with this task and some are even on the market. Many are ICT support solutions such as the Swedish company Giraff, or home monitoring solutions such as Caretech (Sweden), while others provide specific physical help such as eating with products like Bestic (Sweden). Much attention is now on integrating these devices and services into “smart home” environments.

Health care is concerned with both acute and chronic medical problems as well as lifestyles (diet, activities, social connection, etc.) that promote well-being. This industry also faces the challenge of an increased elderly population with increased acute and chronic health conditions. It approaches the problem from several perspectives – improved medication, clinical procedures and monitoring – and also is focused on home care as an alternative to frequent hospital and doctor’s office visits.

Many technology solutions have also been proposed, developed, tested and commercialized in this space as well. Communications tools and services to increase contact between resident and health care professional is a major area of innovation, as are biometric devices that can monitor bodily functions and transmit that information to the health care provider. With the advance of such solutions the home is more and more becoming a health care delivery environment, as a less expensive alternative to clinical care and usually with a better quality of life.

The problems and solutions between these two aspects of elderly care are different but they share the same fundamental goals – care cost reduction, improved quality of life and to keep elderly living independently at home for as long as possible. Because they obviously share the same target environment – the home – it is inevitable that these two solutions spaces are beginning to merge. Elderly with less care needs may be served well by what are traditionally considered social care solutions, but as their needs grow they require assistance that deals with health needs as well as basic care.

The collision of these two solutions spaces has a profound impact on elderly care all over the world. The organizations that provide these services have vastly different infrastructures, cost and payment models, histories and cultures. Some countries have robust state-supported systems for one type of care while the other is virtually non-existent.

To provide some idea of the scope of the problem in numbers: In the EU today⁴, 17.4% of the population is >65 years old, and that number will exceed 20% by 2020. Of that population, 51% live at home with their partner and 32% live alone or with family/friends; only 4% live in an elderly home or institution. These statistics imply that the number of homes in the EU with elderly residents as a percentage of total population is 10.0%, or 49.3 million homes (based on an EU population of 493 million). This staggering number represents the total target market in the EU for a home solution as described in the GiraffPlus project proposal. Including the U.S. market nearly doubles this number and the global market for the world’s developed country population increases it nearly 4 times.

The addressable market can be extrapolated from statistics in countries that are known to be representative of the EU as a whole. There, 10% of people >65 receive some level of formal/professional home care, and another 12% some level of home care assistance by

friends/family. This implies that 22% of the estimated elderly homes or 10.9 million homes in the EU is the current addressable market for a home care and social connectivity solution. Again, inclusion of the U.S. and global markets nearly double and double again this number.

To provide some idea of scope in terms of costs: Telehealth, as this solution space has come to be called, is already a huge market. Within the EU it was 7.6 billion € in 2010, growing to 13B € by 2016 (Berg Insight). The main providers in this market are state-supported social and health care organizations. The U.S. market was over 5B USD in 2009 and has doubled in the past 4 years to 10B USD, and is projected to double yet again in the next 4 years to 20B USD. The main providers here are private social and health care organizations funded by insurance and individuals. There is also an emerging Accountable Care Organization (described below) that will be a major force in this space in the U.S. over the coming years.

This merging of the home as both a social and health care environment will challenge the disparate organizations described above to work together. They share the following common challenges in the home (also summarized from the GiraffPlus original proposal):

- Early detection of possible health problems for elderly living at home, that can be remediated faster and more cost effectively
- Timely involvement of caregivers, both formal/professional and informal/family and friends, that is not bound by physical distance and travel time
- Adaptive support in the home that can grow and adjust according to the resident's age-related needs
- Preventive medicine practices in the home that contributes to a healthy lifestyle and delayed onset of age-related illness.

This is a concise description of the elderly home care problem that faces our world today, and the problem that GiraffPlus is attempting to address. It also very possibly represents the evolution of the AAL market as we know it today.

3.2 Stakeholder Analysis

This market and the GiraffPlus value proposition, as with nearly all AAL solutions addresses a diverse and interconnected set of stakeholders; therefore a stakeholder-specific analysis is required to develop the right value proposition(s). A stakeholder is any person associated with the market and solution that cares (or should care) about the problem and solution, and the analysis examines what they care about and why, and therefore how they respond to the proposed solution.

Based on the Giraff experience from the AAL ExCITE project, early commercial experience and discussions with stakeholders involved in the GiraffPlus solution space we conclude that there are five main stakeholder categories as described below. It is interesting to note that this analysis turns out significantly different than the classic AAL analysis, even though it derives from the same solution space.

1. Elderly – those living at home whose lives can benefit from the GiraffPlus solution. We refer to elderly in this analysis as the main users who actually reside with the GiraffPlus solution, but it also can include younger people with a chronic illness or a mental or physical handicap. Elderly care about their needs and just as importantly, their fears, which (according to the AAL charter and other studies and experience) are:
 - a. Isolation and loneliness
 - b. Decreased quality of life due to health conditions
 - c. Loss of independence
 - d. Becoming a burden to family and friends
 - e. Maintaining financial security
 - f. In some cases, fear of being required to adopt technology they are not comfortable with, particularly with regard to usability and invasion of privacy

The needs that follow from these fears revolve around assistance with their daily lives and health conditions such that they maintain as much independence as possible; i.e. *preserved quality of life*. At a practical level this generally equates with a desire to live at home as long as possible.

2. Informal caregivers – family and friends, who have the deepest emotional interest in the wellbeing of the elderly person and who are often already caring for them. This is especially true in markets (geographically speaking, countries or regions) that have less institutional systems for elderly care (or health care), or where otherwise the larger part of the financial burden is placed on the informal caregiver. This market distinction will be critical in the target market analysis.

The classic AAL view of their primary needs driver is *concern for the wellbeing of their loved ones*. However, it is clear that in the case of the GiraffPlus space we must augment this with an *economic* concern (especially in markets as just described) that the AAL market typically uses to describe care organizations (see below). Specifically, if an informal caregiver (or group) is largely responsible for the cost of both home care and nursing home care (when the elderly person is no longer able to live independently) there is an exceedingly strong economic incentive to extend the time that person can live at home.

This driver is even stronger than the classic AAL care organization driver because: 1. It is a personal rather than an institutional responsibility, and 2. The relative financial burden of the transition to nursing home care is far greater for a family – even if responsible for only one elderly person – than for a state organization who is managing these costs across many people and across a vastly broader budget with many more trade-off possibilities.

With this crucial variance to the classic AAL view in mind, the informal caregivers' concerns can be summarized as:

- a. Diminishing health and safety of their loved ones
- b. Deteriorating quality of life of their loved ones

- c. Guilt about not providing more assistance or attention, especially when the caregivers do not live within easy visiting distance (and sometimes even more so when they do).
- d. Fear and uncertainty regarding how they will deal with both present and future financial burdens associated with care.
- e. Fear of making compromised decisions regarding their loved ones because they must balance a, b, and c against d.

This last point is equally important and is a fundamental driver for this market. For informal caregivers living in a state with no institutional system for elderly care (or where otherwise they carry the greater part of the financial burden) there are often stressful, terrible decisions they must make as they are forced to balance opposing needs – their loved ones (most often, their parents), financial reality and the future financial needs of their own children.

In extreme cases such as the U.S. market one can literally be forced to choose between prolonging the viable life span of one's parent and providing for the future education of one's children – and this all against the backdrop of potentially wiping out lifelong savings in a matter of a few years. It is difficult for many people who live in regions with a strong culture of state elderly care (e.g. much of Europe) to understand how such a situation could exist in such a highly developed country as the U.S. but indeed it does.

In conclusion, informal caregivers' needs can be summarized in two words – *confidence* that their loved ones are safe and content (the emotional need) and *economic viability* of the proposed solution (the practical need). They also want to personally participate in the care process as much as they are able.

3. Formal caregivers – professional social workers and special services providers who visit elderly in their homes and perform both physical and monitoring tasks. The concerns driving their needs are:
 - a. Not being able to provide quality care in the face of mounting financial pressures from the care organization (which most often translates to time pressure for caregivers). This concern is especially deep when the caregivers have developed a bond and true caring affection for their clients, something most care models encourage them to do but do not provide the tools for them to do it.
 - b. Having to work with technology they are not comfortable with.
 - c. Being replaced by technology.

Their needs are primarily about *efficiency* and *reducing stress* (mostly related to time pressure) in their work. This stress comes in two forms: 1. Concern about not spending enough social and nurturing time with their client and 2. The quality of their work when performing monitoring tasks, especially related to health procedures such as biometric measurements. Where solutions involve technology, formal caregivers also need it be exceedingly simple to use and maintain – this includes the need for excellent support from the technology provider.

4. Social care organizations – the institutions that deliver elderly care at home. In northern Europe this tends to be the municipality, and on other parts of central Europe it is a private care organization that receives state funding either directly or via mandated insurance programs. In the U.S. it is private businesses and even individuals who are paid mostly by the elderly person or their family. In all cases their needs are also driven by concerns and fears:
- Need to maintain quality of care in the face of mounting financial pressure.
 - The growing gap between elderly needing care and available caregivers, and how they will deal with it.
 - Finding viable solutions with proven cost effectiveness.
 - Being “politically correct” in the public eye with respect to balancing the delicate issues of elderly care.
 - Being “left behind” by care innovation.
 - And for state institutions, the opposite fear of being left behind; becoming “bleeding edge” adopters by attempting to implement solutions that either are not market-ready or that they do not have the infrastructure to properly support. (This is also true, but less so of private care organizations).

These concerns can be summed up as a need for *cost savings*, but while maintaining *political correctness* because they are so much in the public and media eye. Care organizations want to avoid this by finding ways to make their business more efficient while maintaining the level of their services. They need technology solutions that:

- Truly improve care and/or efficiency, based on a solid use model and experience
 - Will be accepted by elderly and all caregivers
 - Are manageable by existing staff
 - Have a cost model that provides fast, if not immediate payback
5. Health care organizations – institutions that provide medical care to elderly. Including this stakeholder in the business plan is another fundamental departure from the classic AAL model, which is typically focused on social care. We define this as a separate stakeholder from the social care organization because their drivers are quite different, even though in some cases it is the same organization.

We summarize their needs as follows:

- Maintaining quality of care in the face of mounting financial pressure (just as with social care organizations).
- Dealing with a rapidly aging population with increased medical needs (people are living longer, generally considered a result of better health care, but older people also have more health problems).
- Adapting to new technologies and trends while adhering to rigid regulatory constraints that govern health care within each country.
- Similarly, changing a high-inertia culture that has adapted to these regulatory constraints.
- Finding viable solutions with proven cost effectiveness.

- f. Fear of becoming “bleeding edge” adopters by implement solutions that are not market-ready (as with social care organizations).

As technology (such as GiraffPlus) offers the ability to monitor and treat medical conditions in the home that were previously confined to clinical environments, the home begins to look like a third care delivery environment (in addition to the hospital and the doctor’s office) as we described above. As a result the home begins to blur the line between social care (almost always delivered in the home) and medical care (traditionally delivered mostly in clinical settings). This trend strains existing organizational structures.

In most European countries there is a sharp organizational line between social care (typically provided at the local or municipality level) and health/medical care (typically provided at the country, regional or national level). For example, in Sweden social care is organized via the 290 municipalities (*kommun*) while health care is organized via the 21 counties (*län*). There is constant financial friction between the two as they debate what is social and what is health care (and therefore, who pays) and coordination between the two entities is challenged by the introduction of solutions like GiraffPlus. As we will see in the next section, GiraffPlus-like solutions are emerging in the EU but they are quite challenged by this institutional barrier.

In the U.S. the situation is even more complex. Social care is nearly always provided by private organizations and funded by the individual (or their family), while health care is nearly always provided by a private health care practice and funded by a combination of the individual and private insurance (but that is not mandated as it is in some EU countries – although the current Obama administration is trying vigorously to change that). This “system” (or lack of a system, as many describe it) has the effect of dealing only with “fixing what is broken” in an individual (i.e. acute, and secondarily chronic medical conditions) while ignoring their “overall wellness.” Of course, this is an economically inefficient system and is a main reason why health care costs in the U.S. are amongst the highest in the world.

Ironically the private sector in the U.S. may end up implementing the needed reform that the government has not been able to. A new trend (that is critical to the business plan for GiraffPlus) is the emergence of the Accountable Care Organization (ACO). An ACO is a payment and care delivery model that ties reimbursements to quality metrics and reductions in the total cost of care. A group of coordinated health care providers forms an ACO which then provides care to a group of patients. This focus on “total cost of care” dramatically changes the priority between “overall wellness” and “fixing what is broken.” Because ACOs are accountable for end-to-end care they are keenly interested in home care solutions like GiraffPlus. Indeed, as we will see in the next section an entire suite of GiraffPlus-like solutions has already emerged in the U.S. and has the close attention of the new ACO industry.

3.3 Current Solutions

There are many, many solutions that contain one or more components of the GiraffPlus solution already in the market in Europe and the U.S., and are a clear sign that the market is already here

even if we have not fully understood or defined it yet. Some solutions are emerging in Europe but are hampered by different economic forces and the sharp line between social and health care. Most of these solutions have emerged in the U.S. because of the dramatically different view the typical elderly person (and their family) has of the cost implications of growing old.

Rather than attempt a comprehensive list we will select representative examples that highlight the key features of today's solutions and point toward what is missing. We present these in roughly "ascending" order from the most basic to the most comprehensive:

Phoniro Systems (Sweden)

<http://www.phoniro.se/en/>

Phoniro makes and markets devices that support home care and independent living, and they are a good example of a basic device provider. Their flagship product is a keyless entry system for social workers who visit elderly in their home. They also offer alarm devices and a secure telephone but no monitoring services. Their customer base is mostly municipalities in Sweden, and the monitoring organizations that support them. They are not a competitor to GiraffPlus and in fact could offer components for the GiraffPlus solution.

OnCaring (Portugal)

<http://www.oncaring.com>

OnCaring combines alarm and sensor devices with some basic biometric devices (including heart rate and blood pressure) into an integrated system with personalized user interfaces. They use a "cloud" approach to collect and store data and are compliant with most EU laws regarding privacy and protection of personal information. They also do not provide monitoring services and can be seen as a potential component provider to GiraffPlus.

SOS International (Norway)

<https://www.sos.eu/en/private/>

SOS is a very large international monitoring service whose core business is medical support for travellers. However, they are now focused on home monitoring and the AAL market, and in fact are a consortium member of the new AAL project VictoryaHome. They do not provide any components and so are a pure monitoring service, and a potential service delivery organization for GiraffPlus.

Caretech (Sweden)

<http://www.caretech.se/en-home.html>

Caretech is a good example of a combined basic alarm supplier and monitoring service. Their core product is the Carephone, which is essentially a communications hub that integrates accessories for various alarms and sensors – smoke detectors, door alarms, motion sensors, etc. Carephone is also a telephone that connects the resident to the monitoring center. Caretech focuses on independent living and their customers include municipalities (primarily in Sweden), private care organizations and even individuals. They also provide the monitoring service itself via an acquisition in 2011.

Caretech (Norway)

<http://www.caretech.no/?lang=no>

Unrelated to the Swedish company, Caretech is essentially a system integrator. They do not make any components themselves but rather choose from what is available on the market including alarms, sensor, biometrics and communications (including surveillance and fixed videoconferencing) and provide integrated solutions to their customers (primarily Norwegian municipalities). They do not provide monitoring services themselves but do offer a sophisticated web interface that provides a single view into the home. As a systems integrator Caretech is a potential distributor for GiraffPlus.

Care Technology Systems (USA)

<http://www.caretechsys.com/>

Care Technology is a good example of a truly integrated home monitoring solution and begins to look more like a competitor to GiraffPlus than a component provider. The system also offers biometric devices including a blood pressure cuff, weight scales, glucometer and pulse oximeter. The entire system is integrated with a personalized interface and monitoring service. They also offer a nurse call system that allows a resident to simply pull a cord on a device to receive assistance. Perhaps most importantly, Care Technology offers a complete Software-as-a-Service (SaaS) solution for care organizations.

GrandCare Systems (USA)

<http://www.grandcare.com/>

GrandCare is perhaps the closest direct competitor to GiraffPlus and serves as a good reference point for identifying the key solution gaps and advantages of the GiraffPlus solution. The system integrates wireless sensors and alarms as well as biometric devices and dose management, and provides personalized interfaces for activity monitoring and health information. GrandCare also provides some very basic context inference capabilities such as “IF (door is open) AND (it is after 21:00) THEN (send SMS text to neighbour). The system also provides a “socialization” feature that allow caregivers to add photos, messages, music, video etc. to the resident’s online portal. It also offers videoconferencing via Skype.

Other European-based organizations that we have examined and/or corresponded with, that provide one or components of the envisioned GiraffPlus solution (by no means a comprehensive list):

Alleato (Sweden)

<http://www.alleato.se/>

Sonotel (Germany)

<http://sonotel-hausnotruf.de/>

Aperir (Sweden)

<http://www.aperir.se/>

Handicare (Norway and around the world)

<http://www.handicare.com/Welcome/>

Other U.S.-based organizations that we have examined and/or corresponded with, that provide one or components of the envisioned GiraffPlus solution (by no means a comprehensive list):

Healthsense

<http://healthsense.com/>

Added Care Services (now defunct)

<http://www.addedcareservices.com>

Caregiver Technologies/AttentiveCare

<http://www.caregivertech.com/>

Ideal Life

www.ideallifeonline.com

BeClose

<http://beclose.com/>

CloseBy Network

<http://www.closebynetwork.com/>

Oakwood Services

<http://www.oakwood.org/>

SaferAging

<http://www.saferaging.com/>

Carematix

<http://www.carematix.com/>

QuietCare Systems (an Intel / GE company)

<https://www.quietcaresystems.com/cp/login>

3.4 Solution Gaps

Several things become immediately clear in assessing the current solution space:

- There are many solutions that provide components of what stakeholders are looking for
- There are many “point” solutions that focus on a specific activity, medical condition or component of a full service

- There is confusion in the market about what constitutes a “complete” solution – something many claim but for which there is no clear reference point
- There is no standardization
- Each platform is vertically integrated; there is little or no plug-and-play capability
- Real-time communication is limited to telephone and fixed videoconferencing technology; there is no concept of “instant presence”
- Most solutions/organizations grew from specific needs and circumstances with no top-down view of the required solutions

We have had extensive discussions with care organizations in Europe and the U.S. and can summarize their assessment of the current solution space as follows:

- Solutions are not complete and it is left to the care organization to put the pieces together themselves
- They require extensive integration and configuration work which must be performed by the care organization or a system integrator
- They are not flexible in that adding any device or capability to the solution requires much custom work (and therefore expense)
- They often do not adhere to all required standards and regulations for security, privacy and information access
- There is not a clear economic model showing cost savings
- These systems provide “much data, but not much insight.” That is, they provide raw information that must be interpreted by caregivers who are often untrained to do so. This leads to confusing or conflicting information (see below).
- There is not a consultative approach that allows the care organization to implement and integrate the platform into their own business
- While these solutions are clearly intended to save money by making care more efficient or prolonging life at home, they still require intensive staff support. False alarms and/or confusing or conflicting information require in-person visits that could have been avoided if the system were more robust (this also speaks to the lack of “instant presence”).

Stating these findings in the context of the GiraffPlus solution, and using GrandCare systems as our reference point we can summarize the stakeholder requirements and show the current solution gaps:

<u>Feature</u>	<u>GrandCare</u>	<u>GiraffPlus (proposed)</u>
Alarm monitoring	●	●
Sensor monitoring	●	●
Biometric support	●	●
Wireless device support	●	●
Personalized interfaces	●	●
Real-time communication	●	●
Consultative support	●	●
Standards-based platform	●	●
Plug-and-play support	●	●
Regulatory adherence	●	●
High-level reasoning	●	●
Instant presence	●	●

● Provides feature

● Provides partly

● Does not provide

1 Solution Gap Analysis

It becomes immediately clear from this comparison matrix that the GiraffPlus project has great market potential, but also that it must deliver on its unique capabilities to be competitive in that market.

4 Value Proposition

4.1 Proposed Solution

Based on the solution gap as described above we propose as the basic value proposition an integrated home care solution that:

- Provides unobtrusive support in the home for independent living
- Allows for flexible integration of many different devices according to the resident's needs

- Provides easy-to-use instant presence for social inclusion, instruction and feedback on care processes (such as use of a biometric device) and to respond to potential emergency situations
- Provides intelligent reasoning to remove some of the burden of information interpretation and analysis by caregivers
- Includes consultative support for the care organization and other organizations involved in implementing the solution
- Provides easy and personalized caregiver access to information

The value propositions are specific to the stakeholders as described below, but in general we can summarize the GiraffPlus value proposition as *confidence* and *cost effectiveness*.

4.2 Stakeholder messages

With the established foundation of the stakeholder analysis above and the proposed solution, we can now translate the value proposition into the key messages and create the “ready to execute” content of all outward representations of the solution including sales strategy, branding, the web site, presentations and marketing materials. The value proposition and messages for each stakeholder are:

1. Elderly

1. GiraffPlus keeps you socially connected on your terms; you can have visitors when you want them and control and privacy when you don't
2. It maintains quality of life by providing home and health care support as you need it. GiraffPlus gracefully expands with your needs.
3. It enables continued independent life at home
4. Increases financial security and reduces fear of become a burden to family by providing an economical solution to home care
5. The technology is transparent and requires nothing of you. All communications place the burden on the caregiver, not you.

2. Informal caregivers

1. GiraffPlus helps maintain health and safety of your loved one, and can maintain or improve quality of life
2. It eases the burden of guilt by allowing you to participate in the care process no matter where you live or what time demands are placed on your life. It allows you to be instantly present in the home whenever you or they want.
3. Better control of your financial planning by keeping your loved on living longer at home
4. Avoids forcing compromising decisions

3. Formal caregivers

1. GiraffPlus makes you more efficient and increases the quality of care you deliver by leveraging technology while allowing you to focus more on the personal relationship.
2. It does so without undue technology burden on you. The system is easy to work with and the visits can even be fun.
3. It does not threaten or replace you but rather extends your presence; you are more, not less valuable than before (job security fear).

4. Social care organizations

1. GiraffPlus gives you a way to maintain quality of care in the face of mounting financial pressure.
2. It does so without requiring additional staffing and the challenges that go with that
3. You will not be left behind by innovation; GiraffPlus is state of the art.
4. At the same time you will not be a “bleeding edge” adopter; from its first day in service the system will have already had at least 1.5 years of field experience.
5. It does not replace people but rather extends them. It does not de-personalize because the system emphasizes personal communications.

5. Health care organizations

1. GiraffPlus gives you a way to maintain quality of care in the face of mounting financial pressure (just as with social care organizations).
2. It provides a way to scale the increased demand for health needs of an aging population
3. It meets the required regulations and standards for security and confidentiality
4. You will not be a “bleeding edge” adopter; from its first day in service the system will have already had at least 1.5 years of field experience.
5. already had 2 years of field experience (same as social care organizations)

A note regarding stakeholder messages: *The messages are significantly different for each group and could even be in conflict in certain venues.* For example, a key message for care organizations is cost savings, which they interpret in the positive light of efficiency and political advantage. However, a family member may interpret the same message in the negative light of diminished services and quality of care for their loved one. A major challenge in the GiraffPlus business plan is to manage and balance these messages, including controlling their exposure to each stakeholder group.

5 Market Discipline

With the value proposition in hand we now turn to the nature of the commercial entity. “Value discipline” marketing theory maintains that any commercialization strategy must start with an analysis of the organization and its market for the purpose of selecting a “dimension of excellence.”¹ This is especially true for a new entity in a new market, and the GiraffPlus business

plan is based upon this theory. Value discipline is also the strategic embodiment of the value proposition – i.e., it is the culture and philosophy that allows the commercial entity to deliver the described value.

The theory describes 3 possibilities and maintains that an organization must choose one *and only one* of these dimensions to focus on and excel at, targeting its customers and narrowing its focus until it can dominate the chosen market through the chosen market discipline. The organization must maintain threshold standards in the other dimensions of course, but must focus on only one in order to be a market leader.

This choice is fundamental to the business and impacts every decision not only in marketing and sales but in all aspects of operations, financial planning, product/service development, production, customer support and even fund raising. Selecting a value discipline is often regarded as the single most important decision a company can make (assuming it is conscious of the need to select one).

We describe the three dimensions here and analyse them from the perspective of the GiraffPlus value proposition market.

1. Operational Excellence – also known as “best total cost,” for GiraffPlus means a company that is known in the market as the consistent, no hassle proposition with great prices and quality. In this strategy the company is not necessarily an innovator; the customer just expects it to deliver the product and the customer already knows what to do with it – implement it in the home, improve care and save money. One might refer to this discipline as “the McDonald's of AAL solutions.”

This discipline has some appeal for the GiraffPlus market given that numerous solutions already exist and because cost and ease-of-use are still significant barriers to adoption. A “no hassle,” “plug and play” proposition would be well accepted especially in a consumer-driven market such as the U.S.

Operational Excellence may be a good choice in the future, especially if GiraffPlus aspires to address a consumer market. For now, though, there is not enough of a baseline in this market to contrast solutions, nor are they viewed as commodities where a no-hassle approach can distinguish one solution from its competitors.

2. Customer Intimacy – also known as “best total solution,” for the GiraffPlus this means that a company understands the customer's requirements, processes and business better than anybody. It would mean that GiraffPlus is not necessarily the cheapest or even the most complete from a product feature perspective, but has the best total solution because it fits into the customer's business better than the rest. One could call this approach “the Airborne Express of AAL solutions.”⁵

There is a clear argument for Customer Intimacy and indeed it is the best choice for most of today's AAL solutions including the current Giraff service. It has been quoted that solutions like Giraff are only 20% of the total effort required, the rest being implementation challenges within the care organization.⁶ These early AAL commercial efforts are a high-

value niche play that require significant investment in understanding customers' needs, and are the classic traits of a customer-intimate value discipline.

3. Product Leadership – also known as “best product,” this means a company has the best product with all the right features, and that customers are willing to pay for those features. It would mean that GiraffPlus constantly innovates and delivers leading-edge products to the market. In Product Leadership the product is often premium priced but considered worth it and “asked for by name.” This strategy implies that customers believe GiraffPlus works better than other solutions and will always be a step ahead. One might refer to this strategy as “the iPhone of AAL solutions.”

For the market addressed by solutions such as GiraffPlus the choice between Customer Intimacy and Product Leadership is a difficult one. We are clearly still in a fledgling industry that requires customer “hand holding” and even the GiraffPlus concept itself is still not widely understood; these traits point toward a Customer Intimacy market discipline. There are two problems in the GiraffPlus market with this approach, however:

- i. It requires developing customer relationships one at a time, and this may not be consistent with the emerging value chain between GiraffPlus and the ultimate customer (more discussion on this in the Business Canvas section). It may be difficult to scale such a service or even directly reach the organization that actually delivers the GiraffPlus solution.
- ii. Many of the individual components of the GiraffPlus solution – specifically alarms, sensors and biometric devices – are already well established in the market and serve as an inevitable reference and comparison point. Furthermore, in the U.S. even total solutions like GiraffPlus are becoming much more known and understood even at the consumer level. Therefore a Customer Intimacy approach may not be required or even desirable.

As we saw in the solution gap analysis above, GiraffPlus offers key innovations that will be valued in the market if properly executed and customers will likely measure the solution by these innovations. Furthermore, it is likely that implementation of the GiraffPlus solution in the home will be the task of system integrators rather than the GiraffPlus organization itself, and therefore these “middle men” will likely benefit more from a Customer Intimacy approach than our new commercial entity. In fact, these may be our primary customers rather than the care organizations themselves. Therefore, we choose a Product Leadership market discipline for GiraffPlus.

As stated above, this choice has fundamental implications for the core values and culture of the company, as well as its relationship to its customers. The main attributes of a Product Leadership approach can be described as follows:

- A focus on the core processes of invention, product development, and market exploitation
- A business structure that is ever-changing to adjust to the entrepreneurial initiatives that characterize working in unexplored territories

- Management systems that are results-driven, that measure and reward new products success and don't punish the experimentation needed to get there
- A culture that encourages out-of-the-box thinking and a mind-set driven by the desire to create

It should be noted that this approach does not mean the company will not need a "consultancy" relationship with its customers as the Giraff solution does today. The difference is that in a Customer Intimate approach the purpose of the consultancy is to understand the customer's business and adapt the solution to it. In this Product Leadership approach the purpose of that consultancy is to explain the benefits of the superior GiraffPlus solution and how it makes the customer's business more effective. We believe that this consultancy relationship will be a significant component of the GiraffPlus service.

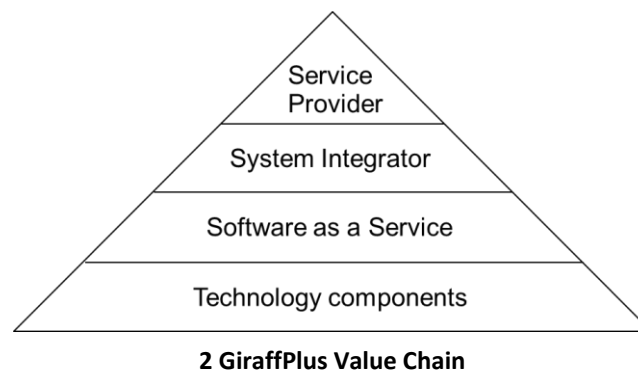
6 Service Definition

In discussing service definition we must refer to the entity that will deliver the GiraffPlus solution; since we do not know who this is yet, we will refer to it simply as "Newco."

The first question we must address in defining the GiraffPlus solution is whether it is a service or product. If we want to focus on the home devices themselves (alarms, sensors, mobile telepresence, biometrics, hub, etc) then it is conceivable Newco could sell this as a product or a product suite. However, we also know from the emerging architecture that software makes up the major portion of the solution, and specifically that there is significant processing and storage outside the home, or in the "cloud." Therefore it seems clear that GiraffPlus is a service. This is a critical decision because it affects everything from the financial structure of Newco to the kinds of investors that will most likely be interested in the business.

The second question to address is where in the value chain the service fits. This is also a critical decision because it drives not only the technology focus and staffing requirements, it also determines to a large extent the customer segmentation, customer relationship and channel strategy of Newco. We assume here that the customer (the economic buyer) is the care organization who provides service directly to the resident (and there family, where applicable). As we will see in the customer segmentation section the customer could also be the individual and family themselves – i.e. a consumer market. However, for purposes of service definition we can define the family as the care organization without loss of generality.

Based on market analysis we conclude there are four levels in this value chain as shown in the diagram below:



We examine each level in the value chain here:

Service Provider

This is the organization that provides the actual monitoring and attendant service to the resident. In some cases this is also the care organization – e.g. Oakwood Services (USA). In most cases, however, the service provider is a separate layer in the value chain – e.g. Caretech (Sweden) or GrandCare (USA). Since we have access to monitoring service providers in the consortium it is natural to consider this as the right level. However, the characteristics of these organizations are that they are highly dependent upon geographical considerations. They must deal with the details of different legal and regulatory requirements in each country, and the organization of elderly care in each country largely determines the role they play and what kind of customer relationship is required.

Therefore the service delivery model itself varies from country to country – e.g. Caretech (Sweden) and GrandCare (USA) have vastly different delivery models. Therefore, these service providers require deep relationships with the care organizations and even end users in some cases. It would be very difficult for one organization to take the GiraffPlus solution beyond a single market even if they had only one national center in each country. There are such multi-national organizations – e.g. SOS International – but their services tend to be highly specialized and not nearly as complex as the anticipated GiraffPlus service.

System Integrator

In this market a system integrator is responsible for implementation of the system in the home. They can also be the service provider – e.g. Care Technologies (USA) is an integrator that also provides the service. Because we already know that home implementation is a complex task inherently connected to the solution itself it is also natural to consider this as the right level in the value chain. However, system integrators face many of the same challenges as the service provider. Their approach is also highly dependent upon the organization of elderly care in the specific region or country, and of course they must also deal with language and local culture – e.g. how one interacts with an elderly person in their home. They must also deal with local logistics and support – e.g. coordinating delivery and installation of devices.

Most service providers rely on local system integrators to perform this task, and these organizations often provide other services not related to elderly care – e.g. basic home alarm installation and even home media installations such as sound systems. To play at the system integrator level Newco would have to partner with many such organizations and it seems much easier to simply view them as customers instead.

An important sub-layer in the value chain addresses the question of who provides the physical devices. It is reasonable to assume that Newco would provide the devices as part of its service; therefore it could configure and verify them as part of the whole solution. Newco may have to do this in the beginning simply because of the complexity. Taking on this task requires Newco to become more deeply involved with the care organization and possibly even the end user whose needs drive which devices are required. However, because we are striving to make the solution plug-and-play and easy to configure (and because we believe this is mandatory for success), achieving this goal should make it unnecessary for Newco to take on the task of providing devices.

Furthermore, we hope that the GiraffPlus solution is general enough that many, many such devices can be integrated in the future, and that we should leave it to the higher levels of the value chain (systems integrators, service providers and care organizations) to make these decisions as they are closer to the end user. Therefore we conclude that (initial customers aside) Newco will not be a device provider itself but rather will focus on certifying such devices as compatible with the GiraffPlus solution. Early trial experience with the GiraffPlus project, and perhaps early Newco commercial experience will validate and/or adjust this decision.

Software as a Service

Given the device decision above, we can conclude that the inherent value of the GiraffPlus solution lies in the methods, algorithms and architecture, and in the software implementation of those elements. We also know that the software resides in many places – the home hub, various network servers, client PCs and other devices that access the system, etc. This software (and the underlying algorithms and methods it represents) is the “glue” that holds the entire solution together as implemented and supported by the care organization. It is also the essence of the innovation delivered by the GiraffPlus team, and as shown in the gap analysis it is the essence of what is missing in the market today. Therefore the software – and specifically the software as a service (SaaS) seems to be the best level in the value chain to focus.

As a SaaS provider we also avoid dealing with the entanglement of the upper value chain layers – systems integrators that are also service providers, service providers that are also care organizations, etc. In the SaaS model they are all potential Newco customers depending upon what they themselves provide. It allows Newco to:

- Address customers at different levels
- Focus on the unique strengths of the GiraffPlus solution
- More easily focus on the chosen market discipline (Product Leadership)
- Leverage the infrastructure already in place in each country (e.g. systems integrators who know how to procure and configure devices)
- Address a global market from the beginning

- Greatly simplify Newco's startup requirements
- Attract a broader array of investors who prefer software plays

Even at this level we still must implement differently in the U.S. and elsewhere than in the EU, but at least these differences can be addressed an architectural level and not at the service delivery level.

Technology components

It is also possible to consider a lower level in the value chain, where Newco provides the components of the system (personalized interfaces, intelligent reasoning algorithms, middleware, communications protocol, etc) and let other providers integrate them into the solutions. This has the advantage that Newco does not necessarily have to be a company at all and may require little if any funding. Newco could in fact simply be a continuation of a subset of the GiraffPlus consortium with a commercial focus, each member providing their component of the overall solution.

The problem with this level in the value chain though is that the market is still under development and most service providers don't understand what they need to meet user requirements. It will be difficult to convey the value of the GiraffPlus advantages as technology components without a complete architecture to connect them to. It is likely that the SaaS level delivers the most value; therefore playing at the technology level simply enables somebody else's success.

Of course, it is still possible to deliver specific components as a SaaS provider if circumstances dictate it – e.g. delivering the intelligent reasoning component to another SaaS provider who deals with a specific market niche like dementia care. This can also be a fallback position if the full architecture is not ready commercially at the project conclusion, or if we are not successful attracting investor funding quickly enough. But it seems that the SaaS level is the right choice for Newco.

Direct Consumer Play?

Finally, we address a question posed by several U.S.-based consultants and investors: could Newco be a direct consumer play? Specifically, could it bypass the other value chain players and sell directly to the individual and their family in a "do it yourself" approach? This proposition may not make sense in Europe where most countries have at least some systematic form of social and elderly care (therefore, the individual has little motivation to implement their own solution). However, in the U.S. where there is an exceedingly high motivation to do exactly that (see stakeholder analysis above) it could open a massive direct market for families desperately seeking a way to keep their loved one at home. Local system integrators and even retailers could become distributors for the devices and the SaaS platform.

There are precedents for such an approach. Biometric devices are now available in retail pharmacies, and many people install their own alarm systems, especially with wireless technology now affordable and widely available. Even home networking systems that 10-plus years ago required professional help are now easily installed by non-technical people because the technology has become robust enough to be nearly "self-installing." If such an approach were

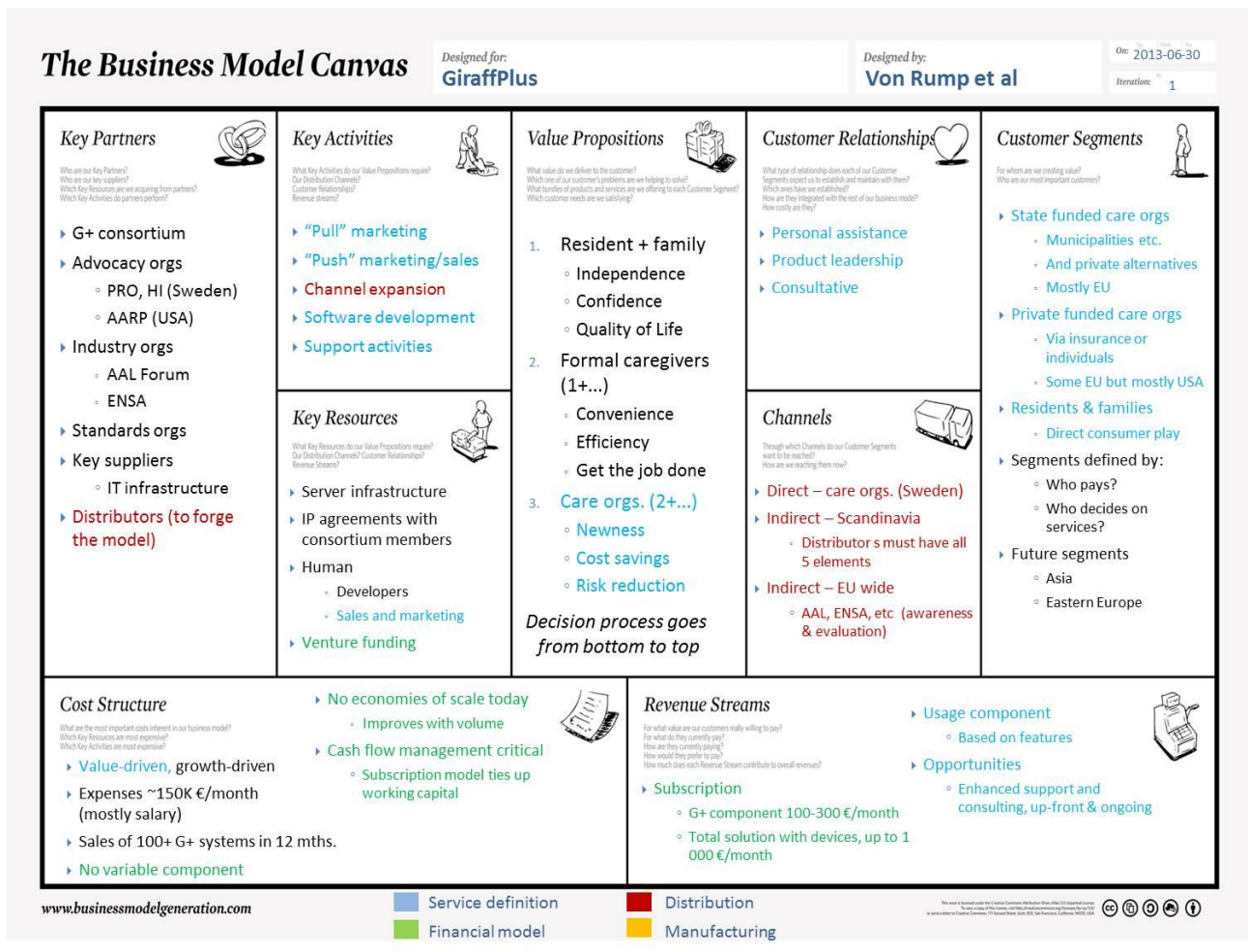
possible it would almost certainly be the most profitable because it bypasses the middle players and takes its gross margin directly from the consumer (this is why U.S. investors are so intrigued with the idea).

We don't know the answer to this question yet and will continue to consider it as we gain field experience in the GiraffPlus project. However, it seems like that, at least for now, the complexity of the GiraffPlus solution – particular with regard to device configuration, operating a device like Giraff, etc. – will require professional support. This is a direction Newco should perhaps aspire to but it seems difficult to execute in the beginning.

7 Business Canvas

The Business Canvas represents the core of the GiraffPlus business plan and is the overall guide to the creation and organization of Newco. The development of this plan is a separate exercise; we summarize the results here.

The Business Canvas describes the business in a snapshot in time in 9 areas that are summarized on a single page of “canvas.” The model contains a specific Q&A process for defining the key components of each business area which we have followed in conjunction with discussions with participants in all areas of the industry. There is significant detail in separate documents that complete the content of the Business Canvas, but we present the one page summary here:



3 GiraffPlus Business Canvas

It is difficult to get any insight from the canvas itself without understanding the specific terms used or without going through the development process, so we highlight the key conclusions for each component of the canvas here:

- **Value propositions**
 - Early detection of possible health problems
 - Timely involvement of caregivers
 - Adaptive support in the home
 - Preventive medicine practices in the home
- **Customer relationships**
 - The focus will be "personal" with a strong customer support element both pre- and post-sales.
 - However, this does not imply a customer intimate market discipline; the purpose of support is to educate customers on the value of industry leading capabilities.

- **Customer segments**
 - The top priority will be on private care organizations that are funded through private means (typically by the individuals and/or insurance plans). These for-profit organizations are more highly motivated to try innovations that can improve their business and are willing and able to move faster. This means the geographical focus will likely be on the U.S. in the beginning.
 - The second priority will be on public and private care organizations that are funded by the state. This geographical focus will clearly be in Europe.
- **Channels**
 - Newco will use system integrators and other organizations who are in the business of supporting care organizations with technology. This also tends to drive geographical focus toward the U.S.
 - In some cases the integrators are themselves monitoring service providers, using the GiraffPlus platform to deliver that service.
- **Key partners**
 - The most important partners are the GiraffPlus consortium members, especially those who will participate in actual service delivery and device supply.
 - Otherwise they are the elderly care advocacy organizations in each country, as well as the industry organizations that bind together the care organizations.
- **Key activities**
 - These are the key day-to-day Newco activities that drive the business forward. Obviously continued software development and expansion of the supported device portfolio are key.
 - Otherwise key activities include marketing and sales, support and channel management and expansion.
- **Key resources**
 - The key resources are primarily personnel, especially technical personnel
 - Other key resources include consortium IP agreements, IT infrastructure and investor funding.
- **Cost structure**
 - Newco is a most fixed cost structure with significant up-front capital needs because of its subscription-based service offering (i.e. costs are incurred well in advance of revenue since revenue is stretched out over the subscription period).

- **Revenue streams**

- The GiraffPlus offering will be subscription based and will not include devices (they are supplied by the system integrator or directly by the care organization).
- The subscription will also have a usage component, i.e. it will vary by what features are subscribed.

8 Operational Considerations

The strategic choices made in the business plan dictate much of the practical operational considerations:

- Choosing SaaS as the service definition simplifies Newco's focus, organization and capital needs.
 - No production facilities are required, and the development team can even be distributed to some extent, so office space is not a major concern.
 - At the same time it dictates a strong device testing and integration resource, as Newco will be constantly adding new devices to its architecture.
 - Given the immaturity of the market this also dictates a strong resource (possibly even a dedicated person) on standards monitoring, development and industry contribution.
- Choosing Product Leadership as the market discipline dictates a number of organizational requirements:
 - Staffing must be focused on developers, and also the development process must enable rapid releases.
 - Given the critical nature of the home care application and the strong requirement to protect the production environment, processes must have a strong firewall (technically and culturally) between the development and production environment.
 - Development and testing must be organizationally separated from the beginning even if it is less efficient to do so.
 - Marketing resources must focus on preparing the market by educating customers to accept capabilities that have never existed. This also includes being able to position premium price points.
 - Early adoption programs and major new service launches are also a part of the marketing activity.
 - Management must have the commitment, time and ability to spend a significant portion of its time on recruiting, training and retaining top technical talent.
- Choosing a personal assistance customer relationship dictates a strong customer support organization
 - It also means that there will be at least two dimensions of customer support: pre-sales (consultative) and post sales (traditional support).

Initial staffing requirements are difficult to predict at this stage but we can at least put boundaries on them:

- Administration including CEO, finance and office management (2-3)
- Development including new device integration (3-5)
- Testing and quality assurance (1-2)
- Infrastructure management (0-1)
- Customer support including pre- and post-sale (1-2)
- Marketing and sales including channel management (2-3)

Total initial staffing (9-16; budgeting will be developed around a staffing number of 12)

Finally, it is worth a brief mention here about what Newco might be. As discussed below the organization will require significant funding, which means one of three scenarios will likely unfold:

1. Newco will be a new EU entity that is funded by venture capital. Founders of the company would presumably be granted some founders' shares by the investors and newly formed Board of Directors.
2. Newco will be an organizational unit (department, subsidiary, joint venture, etc.) of an existing company that is large enough and with enough resources to fund the new venture itself. Several of the strategic partners listed in the next section could fulfill this scenario.
3. Newco will be an existing company that takes on the required venture capital to execute the new venture, transforming itself as need to take on the necessary operational structure, etc. Assuming this is an SME the valuation would likely be such that the new investors would take a large percentage of ownership, obviously greatly changing the company's existing ownership/capitalization. The consortium member Giraff Technologies has indicated interest in taking on this role, and is exploring the idea as they take the lead in talking to investors about GiraffPlus. Also Tunstall, Xlab and Intellicare could be interested in continuing to play an active role in the commercialization of the GiraffPlus results after the end of the project. We expect a discussion in the consortium about which role each company is interested in assuming in the second half of the project.

9 Financing

The business plan is now sufficiently developed to begin the process of budget and financing. The business model we are adopting makes the budget process a relatively simple process. This is detailed in a separate spreadsheet but assuming 12 employees in EU countries with 18 months of runway it is easy to show that the company needs roughly 3 million € in funding to begin, a typical number for a software startup. Valuation depends very much on the nature of Newco; if it is a

pure startup it will certainly be lower, but if it brings with it other commercial assets (for example, if it were to subsume Giraff Technologies) then the valuation will certainly be higher.

Valuation also depends very much on the investor. We are approaching several kinds of investors in both the EU and U.S. markets. EU venture capital investors do not show a strong preference for the initial geographical focus (EU or U.S.) as long as Newco is an EU company. Their opinion is that Newco should focus wherever the best opportunity is. Some U.S. venture capital investors are willing to invest in an EU company but only if the initial focus were on the U.S. market. Strategic investors tend to think the way except for multi-national corporations who have no strong preference.

We are at various stages of discussion with a number of investors; most are quite early or even at the initial contact stage, but this will change quickly now that we have a first phase business plan, and the list will certainly greatly expand. It would not be surprising or unusual if we have to make contact with 50 or more investors before finding the right match.

European Venture Capital

- Robolution Capital (France)
- Verdane Capital (Scandinavia)
- Industrifonden (Sweden)

European Strategic

- Siemens Medical

U.S. Venture Capital

- Accel
- US Venture Partners
- Water Street Partners
- Elevate Ventures

U.S. Strategic

- Philips Medical
- GE Healthcare
- Intel Capital
- Ascension Healthcare

10 Next Steps

The most important next step of course is to get the GiraffPlus field trials up and running as quickly as possible. It is a quite powerful statement to tell investors we have the basic platform up and running in real homes even if just at a trial level. It gives the entire venture a level of credibility well beyond what most startups are able to achieve and is a major asset to Newco. The

direct trial involvement of care organizations in this consortium – potential future customers of GiraffPlus – is also a big advantage.

The following activities will be executed between now and the end of 2013 – leaving us just one year to assemble and launch the new business:

- Begin GiraffPlus field trials
- Complete an investor perspective, a relatively short (5-page) document that describes the “deal,” and vet this document with a “friendly” investor. This will happen before the end of the summer.
- Complete an investor presentation in the same time frame as above.
- Finalize the GiraffPlus system architecture so that we can create a definitive system description. This includes confirmation of the unique features identified in the value proposition.
- Complete a COGS analysis of the system so that we can begin to create a revenue model. As discussed in this document cost savings is a major value proposition for several stakeholders, so it is also critical to understand the solution COGS so that we can develop an economic model to demonstrate cost savings.
- Assess the development effort estimated between the project end and commercial launch. This is critical for investors to understand what funding is needed and the cash runway.
- Select a target investor list and make the initial approaches.
- Decide on the initial target market; this will be significantly influenced by the investors who finally finance Newco. This decision will probably not be made before the end of the year but we should have a good sense of the direction by then.

The consortium is serious about creating a commercial result at the end of the GiraffPlus project. There is a rapidly emerging market in this space and we believe GiraffPlus can fill key gaps in the current solutions. We clearly understand the innovations we must deliver on to make this possible and are committed to achieving them.

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Airborne became a reference model for “customer intimacy,” particularly interesting because it competed in an industry general considered to require an “operational excellence” approach.
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