



IntelligentLIFE: Elder Care Technology

Interview with Bo Iversen



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Elder and Long Term Care

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Background

As part of a series of case studies on excellence in dementia care, Sofia Widén visited Denmark to study Danish companies and organizations. This study is part of a larger research effort in dementia care in Northern Europe.

In this interview, Bo Iversen, Sales Manager at Life-Partners, discusses the new software and planning tool, IntelligentLIFE, which Life-Partners recently introduced ([Link](#)). IntelligentLIFE was developed jointly by ANYgroup and Life-Partners. Life-Partners previously developed a software system called Life Managers. ANYgroup is a producer of smart sensor technology. These companies work together to provide services to the Rise Care Home, a technologically advanced elder care home in the south of Denmark.

In 2013, the mayor of Aabenraa City, Tove Larsen, invited Life-Partners to provide an innovative solution for the care home. The innovation that Bo Iversen presents in this interview focuses on communication with relatives, the needs of the user, and the care planning structure used by professional care workers. By using big data and algorithms, the IntelligentLIFE design can prevent falls, set passive and active alarms, and help care providers develop nonmedicinal interventions instead of relying on medications. This type of software can also help reduce loneliness since it provides a means for users to connect with family members and friends. This service is a way for relatives and members of staff to structure care routines, and for individuals to engage in more diverse activities.

About Bo Iversen



Bo Iversen is a partner at Life-Partners. Mr. Iversen is also the Sales and Marketing Manager at IntelligentLIFE. Prior to this, Mr. Iversen worked as Sales and Export Manager at B&C Textiler Aktiebolag. Earlier, he founded and served as the Chief Operating Officer at Cost:bart. Mr. Iversen also owned the largest sports store in Aabenraa, Denmark, SportMaster.

Interview

Sofia Widén (SW): Please describe IntelligentLIFE.

Bo Iversen (BI): IntelligentLIFE is a new product developed by two Danish companies: Life-Partners, which I represent, and a company called ANYgroup. ANYgroup specializes in sensor technology.

SW: How does the system function?

BI: Intelligent sensor technology can generate alarms and detect early risks. Life-Partners created a communication and planning design around intelligent sensors for people and their relatives, for caregivers, or for the municipality.

SW: Who buys the design, the person who lives at home or the care home?

BI: Both. We started in nursing homes. Now we are also serving those who live at home. People like staying in their own homes, plus the municipalities do not have space for all their elderly. We found a way to help people stay longer in their own homes.

SW: How long have you worked with the municipality?

BI: Three years now. We have nine employees.

SW: Who founded Life-Partners?

BI: My partner, Lars Jessen. Life-Partners was founded in 2009. The company was looking into the health and fitness world, making communications systems

between fitness centers and their members. When Aabenraa built Rise Care Home, our mayor at that time, Tove Larsen, asked if there were companies in the area who could help the municipality. Lars, my colleague, contacted her. The mayor asked about improving communication within the nursing home and with the relatives outside the nursing home. That is how the collaboration began.

SW: Did you have prior relevant experience?

BI: We had a little experience in fitness, but not in elder care. In a fitness club you have employees and you have members. Then we added relatives.

SW: Please describe your services.

BI: We place the person in need of care at the center on the design. That is very important. A lot of other solutions say they do, but they do not. Other companies develop planning tools for staff. It is important for us to put the people who live in the home at the center. The important thing for people in need of care are their social and professional relationships. We have combined these relationships into one solution to offer higher life quality and safety to the resident. This applies to falls and other dangerous situations, but it also means simply feeling safe. Security means everything.

The intelligent sensors are installed in different places in the home or nursing home. A person can just push a button and say, "I need help." Once the alarm goes off, caregivers come and help the user. You can set the alarm to alert relatives or municipal officials or caregivers. You can send alerts first to relatives and then to the caregivers if you prefer.

We also have bed and wall sensors. Some elderly people are not comfortable leaving their beds when their lights are off. The sensors detect you leaving your bed. We can put the light on in the hall or in the bathroom immediately. When you return to bed, we turn off the light.

We have a kitchen sensor for the stove. We can detect the difference between smoke and steam. We have a heat sensor. If the heat sensor gets too warm, we can turn off the stove remotely. The technology is smart. It knows if a person is at home cooking or if someone has left their stove turned on.

SW: What is the origin of the sensor technology?

BI: The sensor technology relies on algorithms. If you are sitting up in bed, we can detect this. If you are not in one of two places, sitting or lying down, then we know you are not in bed anymore. The sensor only registers movement. We have a software algorithm with all the data that comes from the sensors. This helps us detect falls early. The algorithm generates the alarms.

A person can leave his or her bed without triggering an alert. If that person is not back again within ten minutes or fifteen minutes, we will send an alert to the nursing staff or to relatives. We can also send the alert immediately when you leave bed; but if you leave bed and we detect you in the bathroom then we can start the timer again. It is all customizable. The sensor itself is not intelligent. The algorithm behind the sensor is intelligent. That is also how we use it for early detection. We help prevent falls. If you leave your building at night, we can send an alert.

If you are not in the kitchen at all during the day, you might become dehydrated, you might not eat or drink. We can send a warning to staff or to relatives. If we have a sensor in the room, we do not see if you are moving over here or over there, but we can see that you are moving. For early detection, maybe for sleep, that is the best way to see how you are doing. The algorithm learns your sleeping pattern.

SW: Does the algorithm recognize deviations from routine?

BI: Exactly. The sensor can tell us if you sleep well, given your normal sleep pattern. We can see if you are starting to become sick, if you are anxious. If your behaviors deviate thirty percent from what is normal for you, then we send an alert. We can use the design as a dialogue tool. We understand what is happening in your life. Maybe you typically go to the bathroom once a night. Now you do it four times a night. Are you getting an infection? Is something wrong?

Once the system has been in your house for twenty four hours we have data. After we have been there for two weeks we have more data. We can personalize a care routine for you. Our doctoral student analyzes our system to produce a quantitative study. We can change medicines or care based on your needs and your data. Any devices with a ZigBee specification can be plugged in, such as a blood measurement device or a wearable device. ZigBee is a way of making two things talk together. We can use other formats as well, but ZigBee is very standard. I think there are about two thousand compatible products now.

There is no person who looks in on your behavior. No one sees what is happening in your daily life. The software only follows it. You can tell us that you would like us to alert someone if your behavior changes by thirty percent.

SW: Do you have user feedback?

BI: Yes. We receive a lot of feedback on the use of our platform. Users are very happy with it, especially the alerts. The system develops better care routines. One lady was in pain every day. The care workers stopped listening to her. Our system found out she was in pain. She never slept more than forty minutes at a time. We alerted the care workers, who brought in the doctor. The doctor administered new medication and the lady started sleeping again.

The important thing for us is the algorithm and the application that handles all the communication and care planning. The advantage is that Intelligent-Life is not only an alert system. It is not only an early detection system. It is a communication planning system. It is a social medium. It is a holistic solution.

SW: Please describe the social element in more detail.

BI: You need to manage all your appointments. You also need to order food through whatever system as well as with the municipality. That is a lot of things to handle for an elderly person. You as a relative like to help your mom or dad, but it can be very difficult because of the distance. You call them and you take them to appointments.

We give them a program with a single login. Then they have the whole plan in one place. They can start with the app. Now we can plan. We can communicate with the municipality. We can communicate with the relatives. The person has a way to see the relatives—a daughter or son, family nearby, even the neighbors. This also includes friends, old colleagues, and volunteers. There are a lot of organizations that want to help. It is very difficult to get them in contact with elderly people who are starting to have issues leaving the house. Once they start having symptoms of dementia they do not leave the house much. All kinds of relatives want to help the person in need of care. They just do not know how to help or how to plan. Maybe you as a daughter want to visit your father this week. With our system, you can see that the neighbor is coming on Monday and another friend is coming on Tuesday. Then you know that it might be better if you came on Wednesday or Thursday.

SW: Is coordination important?

BI: Yes. Coordination is very important. If you are not living with your father, you become anxious. Is he falling? Is he getting up in the morning? How is he doing? It might be good for you if he receives a small sensor package so you can know if he has fallen. You would receive an alert. Is he going outside at night? You would like to know.

Living with a person with dementia can be a very hard. Now they cannot tie their own shoes anymore. The relative living with the person in need of care is taking on new care jobs all the time. It can be very stressful. We install the system for them and they can let the person with dementia stay at home alone. They can turn on the system and go away for social events, activities, and other things and come home fresh to help take care of the person with dementia again. If they fall or leave the house, we alert the neighbor or caregivers or whoever. That really helps the family.

SW: Does your system work for a person who has mild dementia, or is it designed specifically for people with severe illness?

BI: I think you need to see it in two ways. The earlier you start using the app, the better the elderly learn to use it themselves. I think the most important people to learn it are the caregivers and the relatives. Sometimes the people with dementia do not use the system. Sometimes they can use it and other times they cannot. Maybe they can use it with the caregiver or with the relative.

We have people with dementia who are using it. It will be much easier for younger people because they use technology and apps all the time. My dad is sixty seven. When he stopped working two years ago the first thing we went out to buy together was a smart phone and a tablet phone. Now he uses them all the time. We have started talking about whether he should give the system a try so that we can know what is happening in his life. Should we help him learn now, while he still does everything himself? When should we start using it? We want to be able to help, especially when he is living one and a half hours away from us. It is important that we know what is happening in his life. Not to monitor him, just to help him and support him.

If you go through the system briefly you can see how intuitive it is. The contact people all have different colors. Pink represents caregivers. Blue stands for

relatives. Yellow will be other people. When you select one of them, you can write a message or send a video request so you can talk about the issue at hand.

SW: Can you chat and talk using your system?

BI: Yes. With solutions like this, when you are using video and communication, you gain a certain level of security. More than just the person and the relatives use these things. The municipality and the caregivers are also involved. Your security increases a lot. It is easy to understand what is written. It is easy to create new messages. You just choose whom you want to send messages to from your contacts. Then you write your message. You can speak and receive your messages from a tablet or a smart phone as well.

SW: Can you dictate messages?

BI: Absolutely. Then we have the pin board. This is sometimes called the elderly Facebook. In many homes in Denmark we have homecare. When caregivers are in the home or in an apartment in a nursing home there is a book in which the employees can write to relatives. For example, the person may need shampoo or something else, whatever happened that day. But you need to be in the room to read it as a relative. We have created this pin board. It is like Facebook. You write a message and when you post it all the people can comment on it, like a thread. This is instant communication with all of this person's contacts at one time. All his contacts go in and see what is happening on the pin board. He can write on it himself. Relatives and employees can write together. Some use it mnemonically, as a shopping list. We have some elderly who are really into it. They write ten posts a day. This allows the family to follow what is happening. It also gives them better contact with their grandchildren because they are much more mobile.

SW: Can one user connect with another user? Can an individual who lives at Rise Care Home add another individual who lives at Rise Care Home?

BI: Yes. Another thing that is really popular at the care homes is the menu. They can check the breakfast, lunch, and dinner menus. They post what they are going to eat for lunch, for instance. They take pictures of it. So if it is carrots, there is a picture of carrots with meat and potatoes. I know one woman who does this very well. Every morning she goes in and she says, "What is for lunch today?" They also include a description of the food.

If you are going to take your dad for a visit, or you go out into the city on a trip, you can go into the system and say, “I am unsubscribing my dad for lunch on Saturday.” Now you do not need to call the nursing home and say, “On Saturday you do not need to make lunch for my dad.” You’ll see that the box is unchecked and you receive a confirmation message that he is not expected for lunch. Also, as a relative you can buy your own meal for the day or coffee or something else. You can say, “I will come and eat with my dad.” You can come eat and buy your own stuff. There is also a personal gallery where users can have their training program or family pictures.

SW: Could your father who lives at home call his nurse or his doctor through the system?

BI: Not his doctor. The municipality buys the system, and the municipality only employs nurses. If they are in the system, you can communicate with them.

SW: Might a general practitioner buy your system and log in?

BI: Yes. There are two parts to our business strategy. One is to sell our system for use in municipalities and small private care facilities. Our second strategy is to sell the system to consumers directly. Individuals as well as care systems would like to be able to monitor and assess their people remotely. Our system also allows individuals who live far away to involve neighbors in the care.

We are using the system on my street. An elderly woman recently became a widow. Her two sons live a two hour drive away. She has Parkinson’s disease and also a little dementia. She has friends in the neighborhood. We are all connected to the system. We use the system to see how she is doing. Her sons can track her progression and decide when and if she might need more help. Eventually we hope our municipality will purchase the system so that she will have access to nursing and homecare when needed.

SW: Do you think hospitals and general practitioners will be connected in this way in the future?

BI: I think that is in the future. Maybe the person will use our system, and the hospital or the general practitioners will use another more suited to their needs. Then we will need to coordinate communication. That may be a solution. I have a friend who is a doctor. He says, “I am paid for everything I do. If I need to go to

the nurses and do it another way, then I do it in two different systems. It takes longer. In the end, I receive more money for it.” The technology is not integrated.

SW: Would doctors need to be paid to answer an email or take a phone call?

BI: Yes. We have initiated a program for family welfare, to allow the system to assist a family who are caring for a sick child, for example. The mom and dad will be contacted by many different professionals. Physiotherapists or nurses want to make appointments with the family. The family needs to arrange all the visits. They could use help.

SW: Will they use the system as a planner?

BI: Yes, as a planner. Twenty different people want to contact the family. They have just learned that their child is sick. The family is grieving. Now they need to handle all this. In these three months, you are not only meeting with someone one time, but many times. Then you need to learn how to take medicine, when the nurses are coming, and everything else. The system can help the family plan everything.

SW: Do you deliver services abroad?

BI: Yes. In Germany and in Norway. We have our own development strategy. We have customers in Denmark, Germany, Norway, and Greenland. In March we won an innovation prize in Germany called Altenpflege. It is the biggest fair for elder care in Europe.

SW: Thank you for your time.

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