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KANBAN HELPS SOFTWARE SERVICES COMPANY

Adapt to Market Change, Expand Offerings

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"What is your end-to-end flow for creating value to your customers?" Klaus asked Christoph once again.

It was proving harder to answer than Christoph had expected. He had already explained what he did on a daily basis as a project manager. But how to determine precisely which part of it was valuable and what was the specific flow to generate it? That's what Klaus was insisting on exploring.

The project manager was puzzled. His task had been to just take the necessary steps to steer work assignments. Why should there be any particular flow and how would that help anyway? The year was 2011.

Since then, Christoph has learned to define a project as a concept that would eventually bring revenue to the company and an improvement to the client. To learn what is going on with each project, all he has to do is enter the Kanbanraum - the Kanban room (Fig. 1).

Five Kanban boards, one resource allocation board and two dozen plastic tubes filled with colored plastic balls to track time spent on all company activities – the Kanbanraum paints the full picture that Christoph would need as Head of Project Management at Austrian company Visotech.

For the past two years the Kanban Method has spread like a virus through the company. This is the story of a business that found its true form to suit function through the visibility of kanban systems and the questions raised along the way.

Background

Visotech was established in the outskirts of Vienna in 1999 as a software shop by Johannes Puller and Wolfgang Eichberger. In the first few years of its existence, the small company created software products for various industries. One of the first developers on board was Stefan and one of the industries Visotech aimed at was the energy market.

By the beginning of the 21st century, the European energy market had started undergoing a lot of changes. In the decades before, coming out the Second World War, local energy markets had been established as natural monopolies. Producers of electricity had been responsible for the entire energy value chain all the way to the end consumers.

This model had been believed to be the most efficient way to allocate electricity production. But the natural monopolies had created what the European Union institutions came to see as collusive behaviour – the result of vertical bundling. Now millions of EU citizens were paying too high a price for the commodity.

So in the early 2000s, the EU passed legislation aimed at liberalizing the market and creating conditions for competition. The big energy companies would no longer be allowed to be producer, seller and owner. The processes of electricity generation, trading, transmission, distribution, and supply/sales were finally broken up and separated.

The immediate effect of this unbundling meant that in order to perform essential activities such as scheduling, switching, enabling and disabling of energy as well as exchange of meter readings, billing and invoicing, sophisticated ways for data transmission and handling had to be invented.

The stakeholders would have to constantly transmit data to one another in order to reach equilibrium, working with a commodity, which by its nature is difficult to store and has to be available on demand. With various producers, using both coal and natural gas as input resources, with multiple energy trades happening all the time, a lot of data would need to be at hand to make critical decisions and to avoid mismatches between the output and the necessary input.

The need for software systems to operate such a complex market was evident. Visotech just happened to be at the right place in the right time. Its product Periotheus had been designed with the goal to communicate, organise and visualize all the data exchanges happening on a daily basis in the energy value chain, including energy trading. With the legislative changes creating an exciting new opportunity, Visotech decided to drop all other products it had been working on and focus purely on the energy market.

The Development Problem

By 2008 the development team had grown to six people and the level of sophistication of the product had helped Visotech acquire a substantial number of clients. The bigger the product got, the larger its scope became.

"We had hundreds of cases in the tracking tool at the time," Stefan says.

Deciding which tasks to pick up next was frustrating for the developers. Tracking down what people are working on was very difficult and time-consuming for Johannes. Knowing when they would be ready – virtually impossible.

The tasks were ambitious in scope and sometimes took months for completion. Struggling to cope with the many parallel tasks and without a clear prioritisation, the developers ended up doing what was universally thought of as a solution: they multitasked.

"I think we did it also because we got bored by working on the same thing for extended periods of time," Stefan says.

But as it is well understood by now, constant task switching was in no way productive. Assignments, in fact, took a lot more time and the quality also suffered as a result. In the context of the energy market, each feature has to be of utmost quality. The off-chance of a defect escaping into production has to be avoided at all cost since any error can result in millions of lost revenue or wasted energy and natural gas supplies. To mitigate this risk, the Visotech developers and management were spending ever more time on complicated and relentless testing and reviewing.

A Resolution

In 2009, Christoph Rissner, the Head of Development, heard about the Kanban Method from his friend Klaus Leopold.

"Everyone was wondering how we could improve our situation and when Christoph came back inspired by Kanban, it was not hard to convince us," Stefan says.

The method, Christoph explained, was based on visualizing explicitly the current process of work through its steps and individual tasks with the facilitation of a Kanban board. The transparency creates conditions to not simply follow the progress of tasks but also to see the big picture in order to make necessary changes to the process and improve delivery. In addition, the method parses the work into smaller tasks, which are easier to monitor as they progress.

Christoph also thought that smaller tasks would help creating the diversity the developers craved. As smaller tasks are completed faster, task switching would decrease and as a result the quality would increase. It seemed just what the developers needed.

Johannes liked the idea of a visible board. Physically moving pieces of paper that represent individual tasks as they get a step closer to being completed sounded to him like a nice way to know what's going on.

"Having a to-do list on a digital document somewhere was never his thing," Christoph Walch says.

Christoph Rissner, Stefan and the rest of the developers sat down and designed the board with five columns. They took all of their tasks from the bug tracking system and created tickets for them. The big ones

Figure 1 - The Kanbanraum.

they broke up into smaller pieces, which was meant to ensure that no one would get bored. Little by little, delivery time improved and the team decided to start releasing with a set frequency - every three months.

It was a commitment. The effects became evident soon after. The company began acquiring more and more newcomer clients into the developing energy market. The need for project managers to oversee those clients and for technical support engineers to help them with issues was becoming obvious. So the two departments were created.

The clients of Visotech were positioned at all the various points of the energy market. In those specific roles as producers, traders, operators and sellers they had their own specific needs.

"Periotheus was always built on the notion that it must allow for a lot of adaptations and integrations without running the risk of breaking," Christoph Walch elaborates.

Visotech had made a clear promise it would serve its users fully and provide for any need that may have arisen in the complex energy business. Encouraged to give suggestions, more of the clients made individual requests. Some could sensibly be added to the general product and used by everyone, but others were too special and context driven. They required a lot of additional information and back and forth communication. Yet, regardless of the nature of the requests, a promise was a promise and had to be kept.

The Integration Problem

Eventually providing the desired features turned out to not be enough. The clients wanted to also know when they could expect what they had asked for. Providing this information proved difficult for Johannes. Even though he had the visibility of the development Kanban board, the task completion rate varied tremendously as it depended on the very communication with the clients involved. The client driven integration was no longer just development work, but also involved a lot of coordination and negotiation over the phone and in person.

"It might be done next week, or next month, or maybe next quarter," Johannes would tell his clients.

With more clients, the amount of client-specific work increased and chaos began creeping in again. Johannes decided to assign one person from Development entirely for the integration with the hope that would improve the situation.

"I think it quickly became unbearable for him," Stefan says.

So Johannes assigned two more people to the task, prompting the formation of what is now the Integration Department.

"We began working within our own group, separate from Development," Murat Gürol says.

But still the problem wasn't resolved. Since there was no visibility for Johannes on what people were working on, it was difficult to say when something would be ready. It was difficult for the project managers to steer the process. In the end it was proving impossible to know whether the most important features for the clients are being worked on and whether the deadlines would be met.

So it was quite natural to then turn to what people knew had helped the first time around - Kanban.

"We tried to outline the steps, but because of the back and forth communication it was more difficult," Murat says.

Incorporating all the scenarios that external communication necessitated was not as clear cut as it had been with the internal development. After a couple attempts, it became evident that the team would not be able to design the system by themselves. Christoph Rissner knew exactly who to call.

"Everyone was wondering how we could improve our situation and when Christoph came back inspired by Kanban, it was not hard to convince us."

"We have been visualizing our work with the aid of the Kanban Method principles you told me about, but I think we need your help now, Klaus."

The Kanban Coach

"Why are we all here?" Klaus asked the four people that sat in front of him. He had arranged with Johannes and Wolfgang to come for a two-day workshop to help them create a kanban system for the Integration Department. But before he could help them do that, he needed to understand why they wanted that Kanban board in the first place.

By 2011, when he got the call from Christoph, Klaus had been involved with Kanban, teaching classes and coaching teams throughout Austria, South Germany and Switzerland via his small consulting company LEANability. The change management method was already helping many teams, but for the method to work, it needed a very clear understanding about its purpose from those who wanted to come onboard with Kanban.

"They were pretty open to me and very determined to succeed, is it was a nice difference from the usual skeptical looks that I get as an external coach," Klaus says.

He gave the participants, including Wolfgang and Christoph Walch, some theory about the Kanban Method and then moved to what he believed was

the essence of any business and where Kanban held its true potential - determining the most valuable thing that the company does.

"We had a long discussion about the difference between working on tasks and generating value for the customer. I wanted them to understand there is a big distinction between the two," Klaus says.

It took them a while to define value. It took them even more time to come to an agreement on the end-to-end flow of creating that value to their clients. What they came up with was that it's not about the individual efforts of boxed departments. It is about making one common effort to create well-functioning systems, which serve the demanding needs of the complex energy market.

Next they moved onto designing a kanban system for the integration. Murat and his two other colleagues had been tackling their tasks day in and day out for many months and assumed it should be easy to make the work process explicit. But the various scenarios still confused them.

They assumed everything was important until Klaus stopped them and questioned those assumptions. In a way, he was preparing them to start seeing the Kanban board not simply as a status report of the way things are, but as a vision how they can be done better.

After the first day the board was a mess. But they did not give up. On the second day they picked up from where they had left off the day before. By the end of the second day they came to a common understanding and agreement about the flow that constituted valuable working. The first ever Kanban board of the integration department was ready with twelve columns, a backlog and an input queue (Fig. 2).

In retrospect, those two days were tedious and difficult. "It took us almost two days to talk about how work works," Murat says. But going through the process had set in motion a company-wide understanding.

The most important thing was to make work explicit for everyone to see. Seeing the workflow and how it went through the system allowed for conclusions if it was performed in the smartest and most efficient way or not. Seeing the work and the policies that surround them was a starting point to initiate conversations about the importance of each task and how it contributed to what was considered of value.

Above all, the employees of Visotech understood that value was not created efficiently when work is passed on from one department to another blindly. It is a common effort and a failure to understand that created unclear specifications that impeded efficiency.

"My purpose as a coach was to get them out of the habit of just working without paying too much attention and get them into a conscious and mindful state where they could differentiate what was meaningful," Klaus says.

Figure 2 - The first ever Kanban board.

The Journey Continues

The idea of value puzzled Christoph Walch in particular. How could project management contribute more purposefully to it?

"I think initially we had seen Kanban as a board on the wall that helps us monitor how tasks progress in general, but after the workshop I started looking for more concrete proof we were doing a good job," he says.

It elevated bottlenecks that when addressed could improve how fast Visotech delivered and how well it met its deadlines.

Christoph Walch was not the only one whose mind was restless after Klaus had left. The developers quickly came to the conclusion that the way their board was designed did not give a clear view of the valuable pieces of work.

"We do not just develop features for our product, but we also have support cases, quality improvements, and others. We figured that when you have a multitude in the same column, it is very difficult to get an idea of the distribution of effort towards quality," Stefan says.

Soon the development team changed their board and their mindset. The first was the introduction of horizontal swim lanes, which would differentiate between that variety. They introduced an Expedite, Dedicated, Support, Regular product development, Important quality improvement and Cosmetic improvements. They kept the columns as they were: Ready for taking; Development; Waiting for review; Review; Waiting for acceptance; Acceptance, but also added an additional one, Documented. It was the first time documentation appeared as an obvious value creating activity that deserved to be on the board.

"A detailed description how our product is used is of the essence for our clients," Stefan says.

Periotheus was getting complex and more subsystems such as Risk management were being added to it. Each new version brought new features and fixed defects. But the clients of Visotech were worried that each new version of the product could affect something else in the system.

"We could not make them switch to the new version and we wanted them to feel comfortable and confident," Stefan says.

That comfort had a price though - each version that a client was using had to be constantly and fully maintained. Massaging older versions of the product had become just as important for Visotech's clients as innovating it. Visualizing and managing that complexity became of the essence. That meant even more projects between the teams.

That was not the only external complication the company experienced.

"We figured out that we switch between tasks all the time in the Care and Roll out columns because tickets got stuck for approval by external figures," Murat describes.

The problem appeared throughout the swim lanes that the team had outlined: Support; Short term; Mid term and Long term development of new features.

Christoph Walch wanted to better manage the multitude of projects and resolve all impediments. The integration department was in constant contact with the clients but could not deal with the delays. Clearly the role of a project manager had become more critical. To deal with it, Christoph and Johannes decided it was time for the next Kanban board in the Kanbanaraum.

"I did not see a point in outlining the steps I took, but rather the steps a project went through, from the moment it was first conceived all the way to being delivered and paid for by our client. That was the end-to-end flow Klaus had been relentlessly asking about," Christoph explains about the first Project Management board.

"My purpose as a coach was to get them out of the habit of just working without paying too much attention and get them into a conscious and mindful state where they could differentiate what was meaningful."

In the Kanban community that sort of board is known as a Portfolio level one, which is particularly helpful for executives who need an overview of all the company's activities.

To design the board took a few iterations. Yet, this time it was easier, because the project managers had learned to look for the steps that create actual value.

"We decided to indicate the effective development or integration work that is performed just in one column - Doing. There was no need to copy the steps that were already present on the other boards," Christoph says.

The board of the project managers was designed to have an Upcoming column, which was for the preparation of all necessary information. When all that was compiled, the ticket would move along to Ready for propose, Propose, Waiting for acceptance and Ordered. The Doing column came next where the big project ticket would stay, while either development or integration would break it down to smaller tasks and transfer them to their boards. After completion, the ticket would bemoved to Done, Roll out and Go live. There was a check list on top of each column, which helped determine if a ticket was ready to get to the next step.

Among the Kanban boards in the Kanbanraum something else was born. The mastermind of planning - the Resource Planning Wall (Fig. 3).

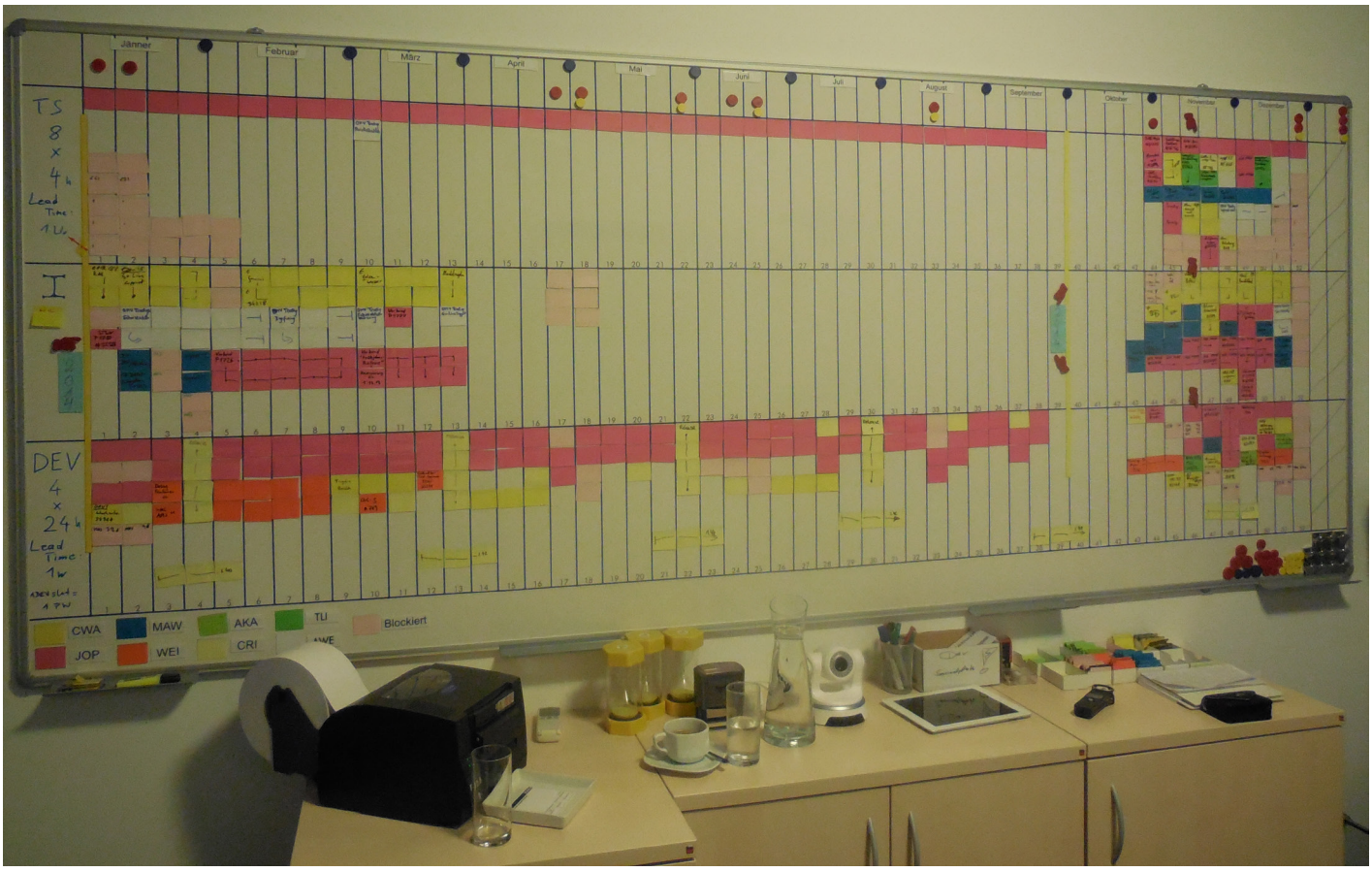

Figure 3 - The Resource Planning Wall divided in columns for each month and swim lanes for Development, Integration and Technical Support.

"The reason for this board was that we needed a visual tool to get the longterm view of our resources, which we did not have with our Kanban boards," Christoph Walch says.

The planning board felt at home in the Kanbanraum. Christoph would allocate time slots for each project based on the estimations he received. Christoph and Johannes could finally give a very clear and precise ETA to their clients.

With a new big picture view as well as a zoom in on the specific effort, steering the multitude of concurrent projects became much easier for Johannes, Christoph and the rest of the project managers. Whenever a task would bump into some impediment, especially delayed feedback from the client, a project manager would put a black magnet on the project ticket and do everything necessary to resolve it.

Christoph learned to always include some slack in his planning. But it was not just to forecast for something taking longer than expected.

"We have this rule that resources can be planned for a maximum of 80 percent. The rest of their time is for meetings and collaboration as well as learning and improvement opportunities," Christoph continues.

Serving their clients was important, but constant learning was as important. On the integration board, Murat and his colleagues decided to make an indication for when a particular person will not take a task. It would be because they know the domain all too well and it would a good idea to have someone else experiment and investigate it.

Room For One More

To represent the entire value stream in the Kanbanraum, there was just one more board missing, that of the Technical Support team. It had always been the source of most suggestions for improvements. Up to this point, the support group had used a simple digital tool to organise all the cases that came their way.

"Within our team we knew well what was going on but the others had no visibility," Robert, one of the technical support engineers says. The order of taking support cases and dealing with them was not established as a set policy.

"In the digital tool, which no one could see, I could easily rearrange the tasks and not take the next in line," Robert says.

The backlog also included support cases, which originated from inside the company. Colleagues would drop by the room of the tech support, give Robert a case and leave. Robert would make a note of that and put it in the backlog eventually. But in the mind of the tech support team what mattered the most were the external support cases. Value, after all, was directly serving the clients.

"Why do you think a request that came from your colleagues is automatically of less value," Klaus asked Robert and his colleagues.

The coach had come once again to help with the creation of the technical support board. With a complicated workflow, a lot of communication with the clients and varying tasks such as the weekly update of the servers in addition to support, designing the board would obviously be difficult.

As Robert explained how the backlog was fed and who the stakeholders were, Klaus noticed the obvious discrimination. He wanted to help Robert and the others understand that the only distinction should be between lack of and presence of value. It was important for all cases to be treated equally and judged upon the content not the sender.

Once the board was put up, they decided to have the backlog accessible for everyone to see when their case would be taken. "It was our desire to be open about our work so no misunderstandings would occur," Robert says.

With a more sophisticated explicit process and definitions of "done" for each column, tech support began tackling cases more efficiently. They figured out how to deal with the less important and non-urgent improvement cases that they had been ignoring before.

"Even though our clients do not get an immediate gain from these minor improvements, in the long run those tasks prevent problems from eventually occurring, such as the preventable crash of an unstable server," Robert says.

One of the new practices that tech support initiated was a dailt fifteen minute stand-up meeting. "The other colleagues had been doing those for a while. Once we started having them, I immediately began enjoying the chance to spread knowledge and get at least a little involved with each task. It gives a wider view and a feeling of belonging," Robert says.

What Robert did not know is that the daily stand-up meetings of his colleagues had transformed and were helpful now because everyone always looked at the same direction - the upper right corner of the board.

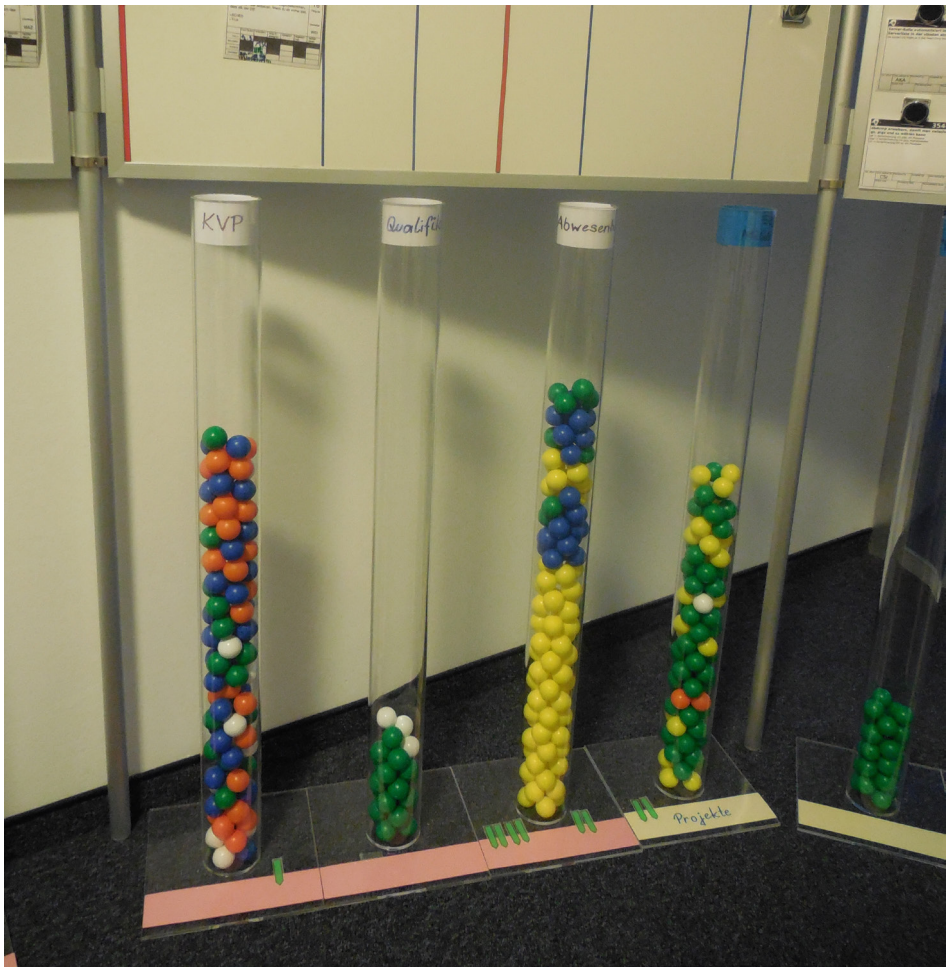

Figure 4 - Tubes with balls in colours corresponding to each department. Each ball indicates two hours labour. KVP stands for continuous improvement and is part of the red segment, which indicates internal work. Other groups of tubes are split in Projects and Client Support. These tubes provide a quick and clear view of each department's effort in each designation.

Conclusion

While overall the energy market is a very stressful place to operate, on the premises of Visotech, life is calm. After years of constant thinking about what is value to their customers and how to change and improve their processes to generate that value, the creators and maintainers of Periotheus feel more confident they are serving their clients well.

"We meet the deadlines much much better, we are better at projects," Christoph says.

Project managers have become very good at prioritising, while development, integration and support enjoy doing their work, striving to improve it. When a decision daunts Johannes, as he sits with a client, he no longer has to give vague ETAs or make decisions on a gut feeling. He has all the information he needs.

The only thing he has to wonder about is how the energy market would evolve once household appliances become smart and start making the energy supplier decisions. When that happens, Visotech will have a new kind of value chain stakeholder to serve – artificial intelligence.

But until then the same Kanban boards will keep changing, always aligned with new discoveries of what constitutes value.

About Kanban University

Kanban University works to assure the highest quality coaching and certified training in Kanban for knowledge work and service work worldwide. Our Accredited Kanban Trainers™ and Kanban Coaching Professionals™ follow the Kanban Method for evolutionary organizational change.

Kanban University offers accreditation for Kanban trainers, a professional designation for Kanban coaches, and certification for Kanban practitioners.

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