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heard the slogan in the heading when I was out grouse shooting in the forest - spending a whole day

tiring myself out, without bagging anything. The idea behind it is, I think, very relevant to the economic situation today. The struggle towards recovery has taken a surprisingly long time, although this must surely come in the next few years. There's no going back to the time before the recession, but the structural changes that have taken place also open up new opportunities. Growth depends on us, as growth company entrepreneurs keep saying.

At present Finland's economy is suffering from several problems. Industry is in a period of transition, business conditions are unfavourable, and public sector finances are in deficit and are too high in relation to GNP. Events in the main market areas and the domestic sustainability gap cast further shadows over the economy. We have to reform our welfare state and at the same time recognize and admit that the future is going to contain more uncertainty. Too often at the moment we just expect someone else to do something, and in our selfishness we do not think of the common good. This applies to political decision makers, trade unions, investors, and the public sector such as the tax authorities or education etc. Now that we are gradually moving from an economic crisis into a structural crisis, success in this situation as well is still partly up to us. This will require not only hard work but also knowhow, an understanding of the situation, and control of costs.

If we examine a successful subcontracting business, one feature that stands out is an in-depth understanding of the behaviour of its customers. The purchasing behaviour of major client companies, if their contract and payment terms start to be unreasonable, imposes extra pressure. A successful company is one that anticipates and plans for the future, has a customer-orientated strategy, is flexible and nimble, looks after its personnel and has an effective, tactically intelligent organisation. International expansion, networking and continuous learning already form part of its normal ways of working. Looking at the requirements for success, we realise that we are talking

Editorial Have a good day -

and a better tomorrow

about the commitment and competence of the entire organisation. This requires effective ownership steering as well.

The owners of Comatec Group have given the company's Board of Directors, and through this the whole organisation, the so familiar target of profitable growth. This is also where our slogan – "Our goal to grow profitably, our challenge – to maintain control in the future" comes from. Fortunately these are not the only instructions given by the owners; they have also given a more detailed definition of the strategic goal. The goal is for the company to be an international engineering office that serves technology companies and is continuously developing. By Finnish standards it is a large company that has the long-term goal of being one of the most highly skilled companies in its field. The company is at the same time gradually shifting towards the project and solution business. To achieve this goal the Board launched a process of change that is currently being implemented. The changes are being carried out through development projects and focus on management of the customer interface, on developing knowhow and capabilities, on internal systems and processes, on management and the organisational structure. The Group is looking for growth and profitability through both acquisitions and internal growth, not forgetting cost management. A new skills-based and customer-oriented organisation has been in operation since the beginning of 2013. In the current difficult business climate, customer feedback has been encouraging, since the company is able to manage more complex assignments and take on greater responsibility.

Since it is harder to grow and see the business as it develops over the next five or ten years than it is to talk about this, we need the participation of all stakeholders - customers, management, personnel and various bodies in the public sector. Comatec's customer relations personnel and management are happy to give more detailed information about the goals and development projects. At the same time, through joint discussion we wish to adjust our operations so that they meet genuine customer needs and generate added value for all parties.

Let's move on together towards success - it's up to us!

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Tuomo Nevalainen Vice chairman of the Board of Directors Comatec Group

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Mechanical, automation and electrical design are core competences at Comatec. In the design of mobile machinery, special vehicles and rail rolling stock these are inseparably linked. No mobile machine or train can move without careful electrical and automation design. Janne Hirvonen has worked at Comatec for six years now and started his new duties as business unit manager at the **Electricity and Automation unit** in the middle of September. Chief design engineer Juha Siekkinen and special design engineer Kai Aarikka work in his department. Comatec Group has 70 electrical and automation engineers and 25 of these work with mobile machinery.

AUTHOR: TAINA SYRJÄNEN

Expertise in the design of mobile machinery, special vehicles and rail rolling stock has become a real strongpoint for Comatec. Comatec designs all aspects of mobile machinery, such as steel structures, transmissions, actuators, hydraulics, cabins, electrification, automation and software. In the Mobile Machinery and Special Vehicles business segment, electricity and automation are smoothly integrated with in-depth knowhow in mechanical design. "Electrical engineering involves designing equipment and its wiring. On top of this we work on automation and programming. It is difficult to draw a clear line between these," says business unit manager **Janne Hirvonen**.

Customer is number one

"In my department we carry out electrical and automation design, programming and testing for many different customers," says Janne Hirvonen.

"Special design engineer **Kai Aarikka**, who designs automation software, and chief design engineer **Juha Siekkinen**, who mainly designs electrical systems, have carried out a wide range of different projects for many customers," states Janne.

"The starting point for what we design and the way we design it is always the customer's specifications. Some customers give very precise specifications for the design, others just give an idea of how the end product should function. On the basis of the source information, we start to design a system, we choose components, make circuit diagrams and in many cases wiring set drawings, and production drawings for a machine.

"For an automation system we design the necessary functions and the cabling between the actuators on mobile machinery and the automation system. Systems can vary in size from just a few signals to several thousand signals.

"We design electrical and control systems for mobile machinery, which

typically include hydraulics, electric drives and a diesel engine. For control systems we design the display screens, the programmable logic, the buses and peripheral devices," says Janne.

"We also take part in project and installation supervision as well as in choosing components and equipment, in competitive tendering, and in purchasing activities," adds Janne.

"We carry out design work in different areas, such as remote access and production test equipment, according to customer requirements. If a customer wants this, we can add a risk analysis of machine safety to the design. We work with Comatec experts in different fields," says Janne.

Kai Aarikka has most recently worked with the Rolling Stock unit on automation design for a VR (Finnish Railways) locomotive.

"This VR project is for a wagon gritter. Pipes run from the locomotive to the bogie wheels. The equipment we are designing heats the pipes and measures the temperature. It stops the grit from freezing in winter," says Janne.

Kai Aarikka has also taken part in designing the automation system for the prototype machine for installing Posiva's bentonite buffer blocks. Juha Siekkinen carried out the electrical design for the machine. Altogether some 30 Comatec experts participated in the design of the prototype. All areas of Comatec knowhow were required in the design, such as mechanics, hydraulics, electrical and automation knowhow and expert services. The hydraulics in the machine were replaced with electrical actuators and it will be remotely operated.

"The Posiva project has been the biggest project that I have been involved in at Comatec," states Juha Siekkinen.

"I have also done some electrical design work for Sandvik, mainly for test equipment and prototype projects. I have designed raise borers and mobile drilling equipment for TRB-Raise Borers. I have also designed electrical systems for AW-Energy, working with our motion control team."

"I have also produced some safety reports," says Juha.

Machine safety

Machine safety is an integral element in the design of mobile machinery. The EU's Machinery Directive affects every aspect of their design – including electrical and automation design.

"The standards and risk analysis set certain performance requirements for control systems. The performance calculations that I have carried out are one part of this work," says Juha.

Design programs

"We have a wide range of design programs in use. The program we use depends on the format of the material that we receive from the customer, which has often been saved in a specific program. So the customer has a big say in the choice of the program we use," says Janne. "All our designers are not experts in all the programs. Designers are chosen for a project on the basis of who has the appropriate skills and knowhow for a particular job.

Testing

Kai Aarikka designs automation systems. Most of his work takes place at his desk, but some of it is in the field. Machines are tested in operation and modifications are made to them during testing.

"Testing always involves complete mobile machines. We carry out two forms of testing, either testing software code against a simulator or testing the operation of a finished machine," explains Janne.

"In simulator testing we test different parts of the software and check if they function as specified. In a test the simulator models the machine and uses real controllers and control units.

"If there are faults in the way a system operates, we find out where they are. Anything is possible. The fault can be in many places, in the software, in components, in the drawings or in the manufacturing of the machine. If the fault is not in the software, it is probably in a component or in the wiring," states Janne.

Commissioning support

"Commissioning takes place when all the equipment is ready for the first start up. Every now and then problems and new issues come to light during the first start up, and we can then give immediate assistance on the spot," says Janne.

"We offer our expertise for the commissioning. If we have programmed a piece of equipment, the programmer goes to the site to provide commissioning support. He can make any necessary corrections and ramp ups on site".

Many different projects

Juha, Kai and Janne like being able to work on many kinds of projects at Comatec.

"Almost every project involves something new. Nothing similar has been done before. It is interesting to examine the source data for a project and then plan how to get the best end result for what the customer wants," says Janne.

"In my previous job I made slightly different variations on the same theme and in five years I had learnt what I was doing by heart. Here there is no fear of learning everything about the machines by heart. In the long run that is a good thing," states Juha.

"Comatec's flexibility concerning working hours and holidays is something that we appreciate highly," say Juha and Kai.

"Flexibility does also depend on the customer. But I have managed to come to flexible arrangements with customers as well concerning holidays," says Kai.

From left: chief design engineer Juha Siekkinen, business unit manager Janne Hirvonen and special design engineer Kai Aarikka.



London Gateway aims to be key global player

At the beginning of 2010, construction began of a new container port on the north bank of the River Thames east of London. The enormous project, called the London Gateway, aims to be one of the main hubs for freight traffic in the world. It is being developed in phases, and the first ships docked and unloaded towards the end of 2013. The precise date has not been fixed yet, but it is expected to take 10 – 15 years to complete the entire project.

AUTHOR: HEIKKI HARRI

The role of the port takes on greater significance because it can handle the world's largest container ships. The development also comprises a major 300 hectare logistics park which is being built in stages. It is located close to motorways and will have rail access. The idea behind the logistics park is to provide smooth access in particular to the UK consumer market.

London Gateway is located some 40 kilometres from the centre of London, close to the towns of Thurrock, Basildon and Southend-onSea. Almost 50 per cent of the UK's consumers live in London and the south-eastern part of the British Isles.

The new port and logistics park will considerably reduce the need for transport by road and rail, since goods can be delivered direct to the London Gateway logistics area and from there to shops and homes.

The port will make a major contribution to employment in the region. The port and logistics park will together create directly up to 12 000 jobs. It is estimated that indirectly the project will result in a further 20 000 new jobs.

The port project has a cost estimate of almost two billion euros. The project

is being undertaken by Dubai-owned DP World. One indication of the scale of the port is that it has altogether 2.7 kilometres of container quays. When completed, the port will have an annual capacity of 3.5 million TEU container units. It will have six deepsea quays for large ships, with a depth of 17 metres.

The port and logistics park are fitted with the latest port automation technology. Containers are handled automatically at the main gate, in the container storage area and in the railway terminal. Identification of road vehicles and drivers is also automated.



Esa Puhakka in England

Esa Puhakka, a project manager in Comatec's Material Handling Systems business line, spent nine months on secondment in London. The project was to install 40 automated port cranes, and the delivery also included straddle carriers. Esa Puhakka's job title was planner and he was responsible for resources and scheduling.

AUTHOR: TAINA SYRJÄNEN

"Our customer is participating in London Gateway and asked my boss for a suitable person for their project team," says Esa Puhakka, explaining how he ended up on the project.

"I contacted the customer and went to meet the project team in London. In a project it is extremely important for the team to have good personal chemistry and to function effectively together. Since both parties felt that we got along very well, I was offered the job.

"The secondment began in April 2013 and I came back in January 2014. I spent two or three weeks on location and at least one week at a time at home," says Esa.

"My main work involved resources and scheduling. I also made unloading plans for ships so that the goods were in convenient places for stacking. I worked closely with the crane builders in connection with the stacking.

"This project was just the first phase. Ultimately, there will be about 160 automated cranes, if I remember rightly," says Esa.

"So this was just the very beginning. Some of the port is now in operation. After all, it's necessary to keep the containers moving and also to make some money to be able to continue the expansion of operations," states Esa.

Weather complicates scheduling

"As far as scheduling was concerned, it was specifically natural forces that posed a challenge on this job. You can't do anything about the wind and the rain, and they disrupt schedules. The fitters naturally have to work at a great height. Rain makes iron girders slippery, and wind is dangerous when working high up.

"England has stricter work safety regulations

than Finland. The work stops even for quite low winds. On stormy days it is not possible to erect and install equipment in the wind and rain," states Esa.

Hectic building site

"Many different people are working on the building site. According to the figures announced by DP Worlds, the highest number of contract personnel there at any one time was probably 2500. That means lots of people, and they are of different nationalities. Our project team alone contained a German, an Indian, British, Finnish and Polish fitters, and we had also some Swedish suppliers. You have somehow to make allowance for cultural differences and customs," says Esa.

"Even before we were able to get into the area, the infrastructure construction team built the tracks for the cranes and the container storage areas, and asphalted the area. We made the schedule for installing the magnets, for example, very quickly, once we got into the area.

"Life on the site is very hectic. Lots of things can happen during one day and there are many variable factors. Problems may occur due to weather conditions, and goods may have been damaged in transport. So things happen that require a quick response and quick decisions," says Esa.



Accommodation and leisure

"I stayed at a hotel all the time. It took 25 minutes by train from where I lived to get to London and 15 – 20 minutes by car to the site. In fact I only visited London a couple of times, even though there would have been much to see there. But I often went jogging in the nearby parks and got to know a few families, and spent my leisure time with them.

"My family spent one holiday with me in Brighton. We spent the days shopping and sunbathing. We also paid a quick visit to London. Our children, a daughter of 17 and son of 20, took part in the Rock workshop in Brighton, which was arranged by Herbie Flowers, one of the most famous bass players in the world. My son stayed with him.

"I liked Brighton more than London. It had the same shops but fewer people."



IPMA-C certification at Comatec

Project managers today manage their projects in a rapidly changing environment together with numerous stakeholders and external parties. Projects have become more complex, more demanding and more variable in nature. At Comatec project managers can take part in a training programme with the goal of obtaining internationally accredited IPMA individual certification. Esa Puhakka, project manager in the Material Handling Systems business line, has obtained the IPMA-C certificate.

AUTHOR: TAINA SYRJÄNEN

Developing the project business is part of Comatec Group's strategy. Comatec Group project managers are qualified skilled professionals, and each of them has undergone an aptitude test. In addition, Comatec Group has its own training programme, Comatec PM Professional, which aims to safeguard the professional skills and qualifications of project managers and to strengthen the project culture within the company. The Finnish Project Institute is Comatec's partner in this programme.

The training takes into account Comatec's ERP system and the tools for managing and running projects. The examples used in the training are the participants' own projects. Applying the matters that have been gone through in between the training sessions is an integral part of the programme. One absolute requirement for the success of the training is an active attitude on behalf of the participants and motivation to learn.

At the end of the training course a project manager who has sufficient experience may apply for the IPMA certificate, which in Finland is run by Project Management Association Finland (www.pry.fi). Individual IPMA certification is an internationally accredited certification system with four levels (A, B, C and D). Details of all certificates awarded are published four times a year on the IPMA website (www.ipma.ch).

The certification programme is designed as a continuous competence development process. IPMA certification is unique in that it also assesses personal characteristics. It assesses aspects relating to the knowledge, experience and individual attitudes of project personnel.

In developing and implementing effective project plans and achieving good results, the personal characteristics, motivation and people management skills of project managers are a vital factor in addition to their technical competence. A project manager must succeed in dealing with the organisational, financial and social aspects of implementing a project.

Certified project manager Esa Puhakka

"I took part in the Comatec PM Professional training programme, and then passed the certification process on 16 May 2014," says Esa Puhakka.

"Comatec made the initial suggestion for me to take part in the certification process.

"Comatec is constantly developing its project management and the tools for this. We have had changes in our quality management system and in our organisation, and in line with our strategy we have increased our involvement in project operations," says Esa, explaining Comatec's firm commitment to training.

"I even flew from London for one day just to take part in a classroom day for the course.

"The course lasted about a year – from April to April. Some of the training was given by the Project Institute, but we also had internal training at Comatec.

"The opinions of the participants in this training were taken into account when deciding which elements concerning project activities should be included in the quality management system. We also formed a sort of test group in testing business methods and in assessing how effective they were," says Esa.

"Internal training was to a large extent related to the company's ERP (enterprise resource planning) system. It also dealt with contract practices and the methods and tools we use at Comatec to manage projects.

"The Project Institute also offered

Behavioural Technical competences

Contextual competences

The eye of competence given in the Project Association's publication Project Management Competence 3.0 represents the integration of all the elements of project management as seen through the eyes of the project manager when evaluating a specific situation. other tools and techniques for project administration that are applied in managing projects.

"I myself have more than ten years' experience as a project manager in material handling. I gained some of this experience in a company in which I had a holding before I came to work at Comatec. There my work involved developing project management and the tools for this. I am very familiar with the entire supply chain, from the initial sales event right through to the final handover of equipment," says Esa.

"In my opinion the title of project manager was already suffering inflation a couple of years ago, since anyone could work as a project manager and there was no register of qualified professionals.

"Certification is important because it is proof of professional competence. Clients and partners know that they are working with someone with professional competence if a project manager is certified," says Esa.

"The application process itself showed that that this isn't any old rubber stamp certificate. You really had to demonstrate your competence. "For me personally, the benefit from the certificate is that I now actually do have the right to use the title of project manager. There is an international register of those who have obtained IPMA certification.

"The certificate is also proof for me of my own competence. Preparing for the exam and the exam itself reminded me of many matters, even though I had worked as a project manager for years," says Esa.

"But the company benefits from this as well. Otherwise Comatec would not invest so much in this. The proven competence of project personnel assists the company in its sales and marketing.

"It places the company in a better position to win international orders. After all, this is a well-known certificate, and sometimes it can be a requirement for obtaining an order," stresses Esa.

"Within the company the certificate is of benefit because it raises the effectiveness, motivation and commitment of an individual. Those who have obtained the certificate bring new lessons and ideas for developing the company's work procedures. The more project managers have been certified, the easier it is to standardize procedures. All in all it helps in creating the company's project culture.

"In the long term the training costs will go down, since certified personnel can act as internal trainers in different areas of project management.

"All types of projects do not suit people of a certain nature. For example people who are extremely placid may not be able to react sufficiently quickly in very hectic projects," states Esa.

"It is very important for the whole project that the people in the project team get on well together. If people do not get on well together, it makes communication more difficult. Ineffective communication is the most dangerous thing for a project. Passing on the wrong information can sometimes turn out to be extremely expensive," states Esa.

"A project manager should by nature be open with everyone and treat them equally. They should also find the strong points of each project worker.

"I unreservedly recommend certification to all project managers. My next target is the IPMA B certificate."



Comatec news

Comatec at Subcontracting Trade Fair

Comatec Group took part in the international Subcontracting Trade Fair 16-18 September 2014.

The Subcontracting Trade Fair is held once a year in Tampere for industrial subcontracting professionals. Machine building was the main theme for this year's fair. Comatec Group is the leading Finnish company providing design, project management and expert services for technology companies and in particular for machine building, so it was natural for the Group to be there. Unlike previous years at the Subcontracting Trade Fair, this year Comatec Group's stand was in hall A.

As before we met our customers and partners and built new customer relations. Over the three days a total of almost 17 000 people visited the Fair.



Exports to Germany network at FMB fair in Germany

Comatec Group and three other companies belong to an export network to Germany called Semic Group. The four companies have joined forces with the aim of working together to break into the challenging German market. The activities of the network also include holding joint marketing events. One of these was the FMB Fair in Bad Salzuflen on 5 – 7 November 2014. Comatec and the other companies in the network - Creanex Oy, Remion Oy and Wapice Oy - had a joint stand at the fair.

The FMB fair is an important platform for exchanging information between mechanical engineering companies and their suppliers in the East Westphalia-Lippe (OWL) region, which contains a major concentration of mechanical engineering companies in Germany., For example it's OWL, a leading edge cluster in the mechanical engineering sector, operates in the region (see: http://www.its-owl.de/technologie-netzwerk/).

The fair was the most successful to date in terms of exhibitors (485) and visitors (6000).

The main attraction on the Semic Group stand was Creanex's excavator simulator, which drew much attention. It was presented as a genuine tool for virtual product development that is meant for operator training.

Wapice was strongly represented with its remote management systems and Industrie 4.0 solutions, and it made an impact with its in-depth knowhow in Industrie 4.0 contents. The Remion and Tomra AB intelligent rubbish bin project was a very effective, concrete demonstration of Remion's expertise in remote monitoring.



For its part Comatec highlighted its

capabilities in integrating turnkey projects and as an expert and coordinator for hydraulics and technical calculations and for EU projects.

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Comatec news

Insinööritoimisto Kisto Oy in Kankaanpää reinforces Oucons' knowhow

Comatec Group company Oucons Oy purchased the entire share stock of Insinööritoimisto Kisto Oy on 18 September 2014.

Insinööritoimisto Kisto Oy will now function in Kankaanpää as part of Oucons Oy, which belongs to Comatec Group.

Insinööritoimisto Kisto Oy was established in 1986 and has specialised in machine and equipment design. The company's customers are companies that specialise in turnkey deliveries, and in particular manufacturers of various conveyors.

Kisto expands Oucons's knowhow and provides additional resources in the design of conveyor and material handling systems and in project management throughout the customer base, and especially for customer companies with operations in south-western Finland. The company's operations are being developed in Comatec Group as a provider of design and project services especially for bulk goods conveyor systems and steel structures.

Toni Hämäläinen is the managing director of Insinööritoimisto Kisto Oy and he can be contacted on 040 588 9348.





Reinforcements in Lappeenranta

Lappeenranta-based Meka-Suunnittelu Oy was established in 1989 and is an engineering office specialising in machine and equipment design. The transaction reinforces Comatec's service capabilities in the region and the design knowhow of Comatec Group's Industrial Production Systems business segment.



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Merry Christmas and prosperous New Year

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