




**GOODYEAR**  
TECHNICAL CENTER

# The Alchemy of Processes

 You can't re-invent the wheel every day, but it's a different story with tyres. That is, if you know a bit about black magic, because in the trial laboratory more than 200 different ingredients go into the final round unit: Resins, oils, carbons—and of course rubber. At Goodyear's Technical Center, experts are constantly working to find the best composition, employing a large measure of creativity. Their sense of organisation needed some honing, and so Porsche Consulting's help was enlisted to introduce a Continuous Improvement Process (CIP) into the development system. Goodyear has been maintaining the CIP itself for a long time now.

 Elmar Brümmer,  John Ashley

At Goodyear's world headquarters in Akron, Ohio, many things look like they did back in the good old days. This was where Frank and Charles Seiberling, two brothers of German ancestry, founded in 1898 what has become North America's largest tyre manufacturer. Well-kept brick facades signal the company is proud of its tradition. On the way to the executive offices, we walk down wood-paneled corridors on thick carpets reminiscent more of the Plaza Hotel than a modern business enterprise. We pass a large room labeled simply "The World of Goodyear". It contains a model of every one of the company's 100 factories around the world, and the tables holding the models seem to stretch out to the horizon. It's here we start to realise tyres really cover the world—or, depending on your perspective, that the world revolves around tyres. But, one shouldn't be deceived by the apparent tranquility. The escalators carrying employees from the entrance hall to the floors above are called "speed ramps"—and are made of rubber, of course. Fast-paced individuals feel right at home with Joseph M. Gingo, the Chief Technical Officer (CTO) of

Goodyear. As an indication of the importance the company attaches to development, just one door separates Gingo's office from that of CEO Robert J. Keegan. This is the home not only of tradition, but also of innovation.

When Goodyear started its—now successful—turn-around program four years ago, it embarked on a fair amount of intercontinental traveling together with Porsche Consulting. For the consultants from Bietigheim, this was a chance to demonstrate their Continuous Improvement Process (CIP) is not only successful for production departments, but also for development, where processes are a little more difficult to see at first. Above all, this was the first contract coming directly from the United States. But, it wasn't so much a contract as a cry for help. Joe Gingo compares the situation for his developers back then with that of ambulance drivers. As he puts it, "They turn on their sirens, push everyone else to the side of the road, and arrive at the site on time. The problem, however, is that everyone else then arrives at their destinations too late. That's what was happening ▶



Tradition behind a well-kept brick facade: Goodyear's head office in Akron, Ohio

with our projects too, but that's not the right way for a company to operate. It might work once, or maybe twice, but by the third year at the latest we would have been mired in chaos.”

The consultants from Germany were hired because they represent expertise and sound systems. In other words, they started with an advance in terms of confidence. Ulrich Guddat and his colleagues Simone Cigada, Arne Petersen, and Darius Khodawandi worked to improve the “grip” of Goodyear's Development Centers in Akron and in Luxembourg, by analysing processes from

a comprehensive perspective, describing them, optimising them, and then establishing them on a CIP foundation. Before the optimisation phase got started, they provided a crystal-clear explanation of the lean development system and its renowned map as the core element of the lean Product Creation Process (PCP). There was nothing gradual about it—the project was completed in a mere 19 weeks. And the results are impressive. The first step of the optimisation phase consisted of holding four CIP workshops focusing on the new Product Creation Process, in order to ensure the map would undergo continuous improvement right after it was drawn up. One of the ▶



## “A Living System”

*Joseph M. Gingo (62) has worked at Goodyear for over 40 years. Appointed Chief Technical Officer (CTO) in 2003, he is responsible for all development and quality activities.*

*What led you to Porsche Consulting?*

**Joseph M. Gingo:** “I got a call from our Technical Center in Luxembourg—‘Joe, we’ve finally found the people you need’. I wasn’t just looking for a consulting service, but rather a complete lean development system that would help us take better command of our new products. In order to meet Goodyear’s financial turnaround, we had to bring a new tyre onto the market within twelve months – whereas the normal period for this level of complexity would be 18 to 36 months.”

*Did you manage to do that?*

**Gingo:** “We did, but we had to tear apart our whole platform and neglect everything else.”

*What made you look for a solution from Porsche Consulting?*

**Gingo:** “I had also spoken with other consulting firms, but Porsche Consulting simply offered us the best option. That’s easy to explain, actually. Porsche promised a lean development system that my organisation can really use. A lot of consultants come and say they can help you solve your problems—but they don’t give you a system you can use on your own when they’re gone. That was the unique selling proposition with Porsche Consulting: ‘We’ll come, we’ll take a look, we’ll take care of the problem, we’ll give you a system, and we’ll go.’ I didn’t want just any system, though; I wanted a Goodyear system—and that’s what we now have.”

*Didn’t you have one before?*

**Gingo:** “I asked the Porsche consultants to take a look at our previous development process in Europe and North America. They told me that Goodyear didn’t really have a global system as such. But together we set one up. And we’re enhancing and expanding it on an ongoing basis, until it becomes the ultimate system for the whole company. We are currently working on expanding the processes to Asia and then to Latin America.”

*How hard was it to set off on this new course?*

**Gingo:** “To take a company from virtually no process to a lean development system is like staging a cultural revolution. We weren’t used to the level of discipline it required. But we accepted it and got used to it. When our people started seeing results, it was easy to convince them. And that’s why we’ll continue to be successful with it. It’s a living system, not a static one.” ▶

*What role do the tools play for you in this new approach?*

**Gingo:** “Goodyear has a long history of using Six Sigma. Let me put it this way: The lean development system concentrates on processes, and Six Sigma concentrates on problems. If I did it again, I’d definitely start with the lean development system...”

*What do you find special about the Porsche Consulting’s approach?*

**Gingo:** “I’m impressed by how Porsche has westernized the Kaizen principles. I’m familiar with Japanese theories, and I’ve seen how they’re used by companies in Japan. But a lot of companies around the world haven’t managed to use them. One cultural difference lies in the fact that you don’t even need to explain lean processes to the Japanese anymore, because they’ve anchored them in their corporate cultures. It’s different here. Porsche Consulting has created a systems approach that everyone can understand; and what’s more, we can also document and teach this system.”

*Was it hard for you to give them full access to everything?*

**Gingo:** “If you hire someone for the purpose of achieving certain results, but only show them half the data, then you’re only going to get half the results. Transparency is crucial. I enjoyed working together with Porsche Consulting. The people are very open, so our discussions were also open, and consequently very constructive. Neither side concealed anything from the other side. Everyone presented their views of the problems. As a result, we were able to work together to find solutions.”

*What support did you have to give them?*

**Gingo:** “If you want to introduce a system like this one, you’ve got to do it from very high up. It has to be

clear to everyone from the start that anyone who tries to oppose it will lose. So no one tried to work against it, and no one missed the meetings. The fact that I was present at every meeting set the tone. If Joe thinks this project is important, then it must be important for the whole company. If decision makers don’t take the time to follow through, they shouldn’t launch their projects in the first place—they’ll just end up wasting money.”

*Has this lean way of thinking established itself at Goodyear?*

**Gingo:** “We’re much better at it than we were in the beginning. It’s easier for the production department to think along lean lines, but it’s completely new for the Research & Development (R&D) community. In the meantime, however, I’ve got a leadership team that thinks only in lean terms. It has become a part of their vocabulary, in a very natural way—not because they think I want to hear it. Once you taste the success of this development system, you don’t want to do anything else. You start looking around to see what other excess baggage you can get rid of. And that was exactly what I wanted, namely processes that increase our efficiency.”

*If you look back at the project, how would you sum it up?*

**Gingo:** “In all honesty, without Porsche we wouldn’t be where we are today. Porsche took us further than our organisation actually wanted to go. Their consultants have experience with other companies; they can do comparisons that show exactly where we stand. We weren’t even in a position to do that. And the numbers show that we’re on the right track.” ◀

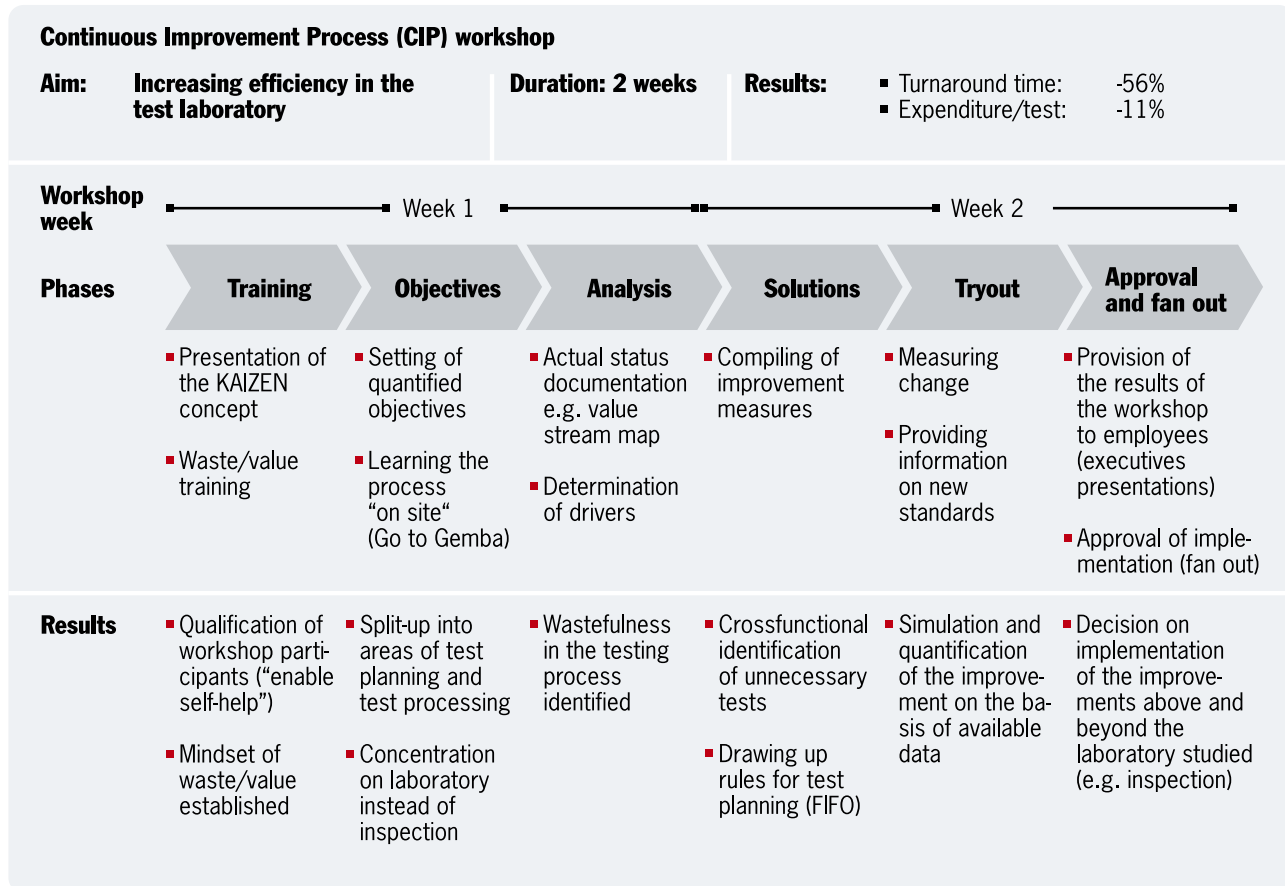


Good momentum on the road to turnaround (from left): Consultant Darius Khodawandi, “Champion” Jim Weissert, Project Manager Ulrich Guddat

four, the testing workshop reduced turnaround times at the development lab by a hefty 56 percent. Expenses dropped by a total of 11 percent. Just one thing, namely the elimination of duplicate test runs in different departments—which hadn’t been realised before—brought considerable gains in terms of time and money. For Joseph Gingo, PCP now stands simply for the “Porsche Process”. It was not only important to generate clear lines of responsibility, but also to determine who does what in the office, on the test track, and in the plant—and why. A very simple question getting lost in the rush is: What results are the internal customers actually interested in? With a clear sense of values, nothing is important except the essential content of the tests. Whereas the aim used to be to perform as many measurements as possible and as rapidly as possible, the sole objective now is to perform measurements efficiently. This meant doing a full conceptual break by setting priorities again from the

ground up. And, with a standardised throughput time, the process chain becomes more stable. People saw it’s better to finish all the test series in an average of three days, than to push through a rush job in a single day while the other jobs that had to be delayed then extend over ten days.

After the value flow was analysed, the lean Product Creation Process was set up and a project management structure was introduced consisting of trans-departmental teams. The 22 designated coaches for the Continuous Improvement Process (CIP) were trained at the Porsche Academy. Then, the first two 14-day CIP workshops focused on integration and further development for the European and American tyre development personnel. Wasteful elements were quickly identified and subsequently eliminated. For example, many variations of tyre components had accumulated over the years, and too ▶



Tasks and objectives: CIP workshop put down on paper

many prototypes were being built, some of which didn't function in the plant because they were manufactured there on different equipment than in the prototype shop. The decision to stick with the standardised two-week workshop format despite the investment in time it entailed paid off in the long run—because this period also covers how to implement the new process, not to mention the momentum the project gathered on its own. As consultant Ulrich Guddat noted with satisfaction, "Goodyear didn't just follow our systems advice, but continued on its own after the project was over to keep on improving the process". Joseph Gingo intends to introduce additional improvement measures to related de-

partments, such as marketing and production, and he wants to extend the lean system to the company's financial sector as well.

No hint of cultural differences between Germany and the USA were found in terms of work. Anyone taking a look at the business card of Jim Weissert, who is one of the two people at Goodyear responsible for the whole process, knows the message has come home. Weissert, who was there at the Technical Center in Akron from the beginning, has cards listing him as a "champion" in Lean, Six Sigma, and PCP. "Champion" doesn't really describe him, though. He prefers the word "godfa-

ther”—a term which has nothing to do with its original religious associations, but rather with the screen godfather Vito Corleone who had deep convictions on what was right for the business. It’s clear the term is an excellent fit for Jim. What “business as usual” may be for other companies, “PCP as usual” is for him and his coaches. His constant approach might be described as follows: “We’re already pretty good, but where can we be just a little bit better?” And off we go again. What a great coincidence that “process” rhymes with “success”.

It was also a success for the consultants. As Simone Cigada and Arne Petersen explain, “It’s harder to delineate the areas we’re working on in a R&D context than in production. You don’t have these clear lines in the R&D domain, so we always had to start from the very beginning when we wanted to install processes.” For engineers who otherwise concentrate on thinking ahead, it’s quite a conceptual challenge to take a step back at first. But, because they are designing the processes themselves, this makes it easier for them to stick to them afterwards and to develop them further. Creativity is not a hurdle here, but rather quite a help. Just the fact that the documentation was standardised opened up new capacities. Previously, new documents had to be drawn up for every new development contract, which wasted a lot of time, energy, and potential. As Jim Weissert reports, “PCP shows everyone what to expect. Everyone started asking themselves why everything had to start from scratch. This realisation was a real breakthrough!”

The production experience at Porsche Consulting also was helpful in restructuring the tyre development department. “Among other things,” says Guddat, “We applied the Takt principle from production. If a team discusses its project on a regular and systematic basis, this is also the best form of quality assurance. When the members of a team have close ties to each other, that encourages understanding and transparency. All of these are important

parts of a lean organisation. Individuals can’t be faster than their teams, especially when it comes to evaluating a project’s irregularities. Our job is to shape the processes in as clear and simple a way as possible, and thus to give everyone the opportunity to understand the entire system. Also, the map is extremely helpful in keeping everyone focused on essentials. Otherwise especially the creative people start floating off into their own worlds.”

Just like tyres themselves, lean development systems place a high premium on speed and stability. And they have to retain their grip when the going gets rough. Now, Goodyear knows how to help itself. ◀



The home of new tyres: Goodyear’s Technical Center