



**$OFDs = 3N + P + C + T + 2$**   
**It might look  
complex, but it's  
the key to reducing  
product complexity.**

# You can't control what you can't measure. And you can't measure if you don't know what you're looking for.



Most companies still don't understand the importance of complexity says Sal Puaar, Head of Celerant Consulting Germany. That's why he helped devise the OFDs Formula to measure and control it and has been passionately involved in the theme for over 20 years.

**E**veryone agrees that complexity is a major factor in terms of profitability and how healthy an organisation is. At Celerant Consulting though, we go further. We believe that whether an organisation succeeds or fails is determined by the amount of complexity it has - and how that complexity is managed.

It's always a surprise therefore that knowing how key this issue is most companies still don't really understand complexity or how to measure and control it. They know when things take too long or are too costly. They say: 'OK this is complex, but just how complex?' Celerant believe that you can only control what you can measure. If you can't measure it, you can't control it and you're left at the mercy of chance and in this respect, most organisations are left at the mercy of chance because if they do nothing complexity simply grows by default.

Complexity isn't bad. Some complexity is unavoidable and some is even desirable. The key is measuring and managing it. Organisations that learn how to manage their complexity - of products, processes, organisational systems and customer service - reducing it where it is unnecessary and increasing it where it is necessary, will be the leaders in the future.

### Start with the Voice of The Customer

Most companies offer things that customers don't really need or value and that's a waste. So find out what's important to them. Once you know that you can develop the simplest way of giving it to them. You obviously have to offer all the features your customers require, but people don't really care about what's inside a product. They don't care whether it's got 86 components or 247. The Japanese were the first companies to really understand this. In 1978 for example, when Canon brought out its first copier, it had around 1/3 of the components that a Xerox copier had. So they could make it cheaper and more reliable, while still meeting all the customer requirements. That was perfect for smaller companies and that's how they eventually took the market from Xerox.

### How do you simplify your product complexity?

Celerant Consulting has a very successful way of measuring product complexity. We use the formula  $OFDs = 3N + P + C + T + 2$ . It means we can put a Complexity Number on every product, whether it's a chair, an insurance policy or a car. It also means that we can compare the levels of complexity between products. If you have 2 phones for example, we can tell you which phone is more complex. So complexity can actually help you do benchmarking.

Product complexity goes hand in hand with process complexity. You can't determine a product's complexity just by looking at it. So Celerant Consulting 'walks the process.' We imagine that we're the product and we measure what it takes to build us. The key determining factor is the number of process steps it takes to make a product and here you have to be aware of all the technology that is available. If you make better use of technology you can make quantum leaps in process efficiency. The next factor is the number of parts in a product. If you can reduce the number of parts, you can reduce the complexity and therefore the cost.

Once we've followed the process from start to finish, we produce a Complexity Number, which might be 852, for example. When you see what that number is made up of, you can then enlist the help of the people running the processes to reduce it. You can say to them 'We want to reduce that number down to 520 - still meeting every customer requirements.' And then they will start thinking of new ways of doing things, which is not always the case if you simply tell them to reduce the cost. All the time though you have to make absolutely sure that you're meeting customer requirements. You can't reduce product complexity if it means you don't meet customer requirements. The customer requirement is always a given.

Opportunities for Defects

$$OFDs = 3N + P + C + T + 2$$

Product & Processes

- N** = number of major process steps
- P** = number of parts
- C** = number of connections
- T** = number of transfers
- +2** = input and output (transport)

Transaction

- major process steps
- or pieces of paper/masks
- or line items, entries
- or duplicate entries
- receive + submit



**You get a win-win number**

We have comprehensive data that shows that reducing a Complexity Number by 10% means you will reduce your cycle time by 10%, your product costs by 10% and your inventory levels by 10%. You will also increase your quality and reliability by 10%, so your products will go wrong less often and you'll get 10% less customer complaints. Sometimes it's more than 10%, but there's always a direct correlation between reducing the Complexity Number and all these factors. It's never proportionate to just one thing, its proportionate to cost, time, reliability and so on. The lever is 4 times.

A prime example of this was when a major manufacturer of heating boilers asked Celerant to help them develop a pan-European product. Using the methodology on their leading boiler we dramatically reduced the OFDs and that reduced the cost by 30%. We did the same for one of the world's leading turbine manufacturers. We reduced their product cost by 25%. These companies didn't come to us saying: We need to make our product simpler. They came to us saying: Our products are too expensive, how do we make them less expensive? Our reply was that In order to reduce your costs, we're going to have to make your products and processes simpler. We use technology to

simplify a lot of things and most of the time the right technology is there, but in a different industry, so Celerant can bring that over from our extensive experience of other sectors.

How many different products you offer also plays a role within product complexity. Sometimes these products are so similar that customers think 'This is confusing, why don't they just make one product? If your customers definitely want 5 different products, then it's vital that you increase your product complexity near the end of the production process and not at the beginning. Most of the time though, people don't want complex product options or complex products. They want simple to use products that can do complex things - just like the iPad.

The question must always be: What does the customer want and how can you meet that in the simplest possible way? The answer is by achieving the lowest Complexity Number. Celerant Consulting can help you do that - and if you do it better than your competitors for the same product, you will always win.

For a presentation of Celerant Consulting's success in reducing product complexity, call us or visit [celerantconsulting.com](http://celerantconsulting.com)

*'Reducing a Complexity Number by 10% means that you reduce your cycle time, product costs and inventory levels by 10%. You also increase quality and reliability by 10%.'*

*For over 20 years, Celerant Consulting has delivered successful, sustainable change for world leading companies. Our expertise covers the entire spectrum of the Operations Management ecosystem, with a core focus on Performance Improvement and Behavioural Change Management. Every project is a strategic partnership where we get down on the ground to identify and analyse a Client's most significant business challenges, then work with them to drive up results. We implement customised solutions that capitalise on existing systems, processes and people - and deliver substantial benefits. We change business for good and over 90% of our Clients say they would work with us again.*

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