

Evolution or Revolution? Are You Innovative?

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Would you rather lead a project to improve your product by 5% over 6 years, or revolutionize your industry with a game-changing new product?

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“Welcome to the revolution”. This was my first statement to the new young team on the Global 7000 interior development. I was so tired of doing things the way they have always been done. It was 2010 and we were a newly formed team of engineers, manufacturing experts and for the first time industrial designers. We could have done the usual thing of creating TRDs with detailed engineering requirements, checking the latest releases of the regulations, splitting up the weight budget, taking the drawings and “lessons learned” from the previous program, and making incremental improvements. But I have never been about keeping the status quo and I really strongly believed there was a serious gap in interiors in the industry.

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My mind is like a bag of squirrels fighting for a nut, so imagining 6 years of tracking compliance and drawing releases and productivity KPIs was filling me with dread. I wanted to do something drastic and different. I saw for years before that we delivered nice jets but fundamentally missed the mark on some real basics of customer experience. And it wasn't because the design was “bad” or non-compliant or even worse than anything else in the market. It was because the aerospace industry as a whole lacked a real awareness of great customer experience and product design.

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I saw in other industries like consumer electronics, cars, etc a different approach. There was something missing in aviation; there wasn't a focus on prioritizing the user. Engineering, specifications, weight, reliability all came before. so you had a functional product that if you were lucky did what you wanted it to. But it pissed me off that such a luxury product had such irritating design flaws in how it worked for customers. Windows didn't line up with seats, entertainment controls were confusing and slow, seats were rattly and loose. “But we've always done it this way” people would say, or “engineering says it has to be this way”. Uh, hell no!

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Great products deliver not only their function but an excitement, an emotional connection. Performing your function flawlessly is the foundation, not the end state. The dream is making your product so emotional that people are tattooing your company's name on their butts.

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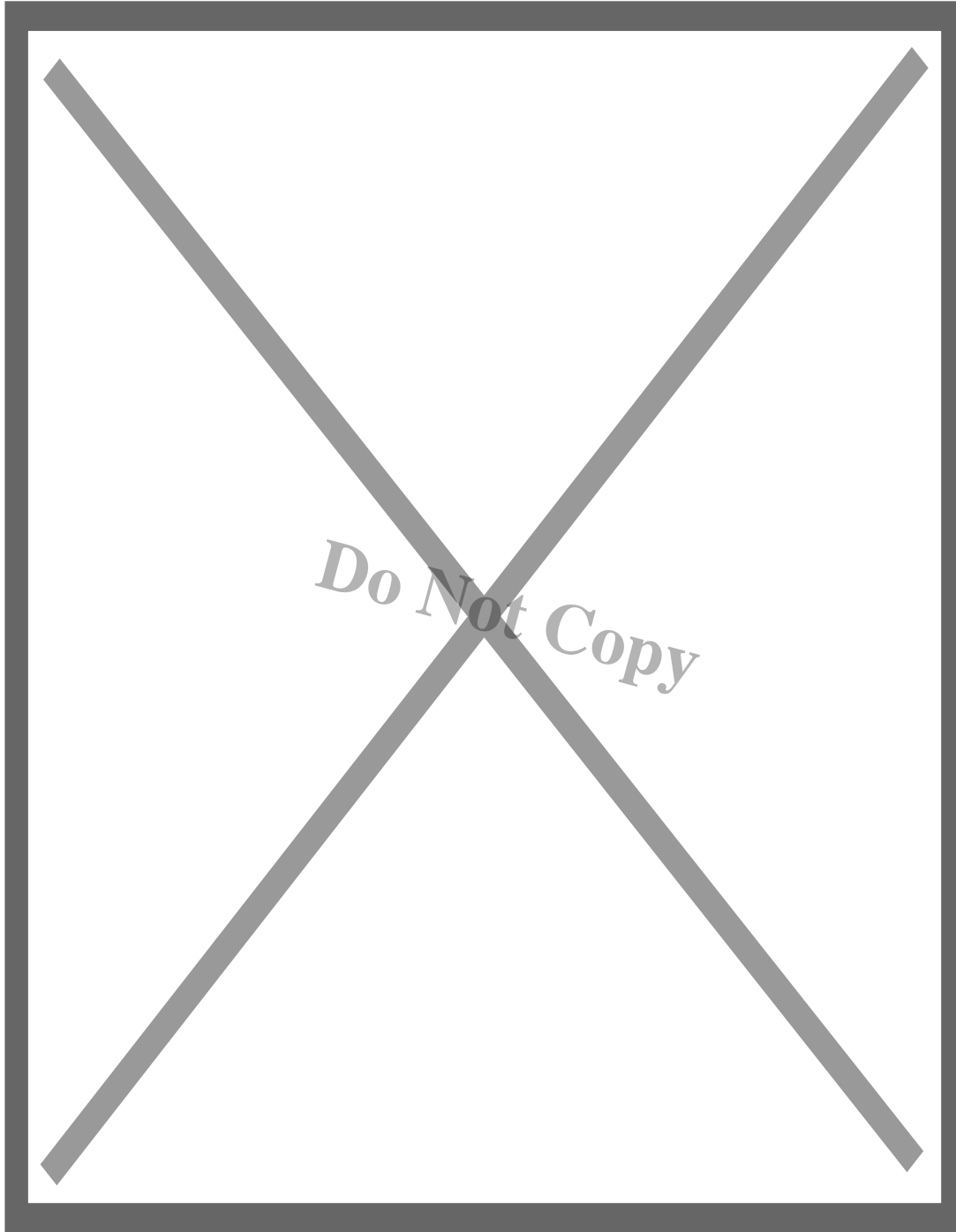
Back then, I learned from recent experiences visiting the Mercedes design center in Stuttgart and also meeting IDEO (great innovative design firm) for a different project that great design came from a very different approach. That approach is Human-Centered Design, which is the prioritization of the end-users experience above all other factors.

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As a life-long career aerospace engineer, this was heresy! Surely the safety and certification regulations come first! Well, you can't not comply with those, but if you start with that you will basically wind up with everything that has done before; products that fly but don't soar.

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This is what happens when you leave it up to engineersâ€¦!

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We began by creating a great team made up of industrial designers, engineers and manufacturing experts. You canâ€™t make a great product without an equal mix of these three critical elements. It has to be in balance always, which was by far the biggest challenge. Great ideas came from everyone and it was critical to establish trust among everyone and allow a lot of room for creativity.

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Then we had to know what the end-user really wanted! Easier said than done. Apple famously doesn't do focus groups because they consider their employees (who use Apple products every day) as the best focus group. Can't do that with a \$50+M business jet! At the same time, we did attempt to define the experience by what would we want if we were an owner of these jets. We also engaged with a small group of owners to understand their biggest pain points. I even managed to get a small team to fly on some dead legs of our demo aircraft to get the first-hand experience.

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Then, before any engineering or manufacturing limits were placed, we created the perfect experience. How things feel to the touch, how things operate, how they look, how the aircraft interacts with the user, in all different types of use (eating, sleeping, entertaining, working, etc).

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We created prototypes in foam core, built a mechanically accurate monster of a seat to test the kinematics, tested window sizes in mock-ups, and tested the perfect water flow rate for washing your hands (hint: it's not the slow trickle on my flight to Denver yesterday).

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Only then did we start to analyze how to make it happen and start to make the difficult trade-offs between experience, engineering certification, reliability and manufacturability. This was the really hard part. I had to be the conscience of the entire team to not give up on the revolution of the customer experience when really big real problems with engineering and manufacturing were found. Holding the line on the priority in the face of a lot of resistance to change (including my bosses) was the key to making it all happen. There were so many days where I believed it was all going to fall apart and we would slip back into the status quo. Resistance to change is normal, and the bigger the idea the bigger the resistance. Plan for it, expect it and be ready to fight for what you believe are the game-changing ideas.

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We did concede some ideas when the rubber hit the road to make everything work together, but overall we did create an experience that revolutionizes the way customers experience the product!

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When you want to inspire greatness and revolutionize the product you own, follow these steps:

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1. Make a great team – balance it with industrial design, engineering, and manufacturing
2. Start and end with the customer – get a deep knowledge of how the product is used; use it yourself with a critical eye
3. Design the perfect experience, set the bar as high as you can go – before designing the product, design the ideal experience!
4. Only then start to create solutions for the technical side of the product

5. Never take no for an answer â€“ hold the line as hard as you can on the ideals in the face of all the difficult challenges of making it work.

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Viva la Revolution!!

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Category

1. Uncategorized

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