

# Fortu powercell gmbh case



**ASSIGN  
BUSTER**

Nowadays, it is critical for the companies of many industries to pay a lot of attention and efforts on the management of technology and innovation. Indeed, the development of new technologies is a potential source of competitive advantage and the ability of the companies to innovate and/or to respond to competitors' innovation determine their survival in a long-term basis. This ability is more or less developed in companies, regarding their maturity and their structure.

Most of the start-ups, which usually function as adhocracies, have a good ability to innovate but struggle to bring these innovations to the market. fortu Powercell GmbH represents a typical example of a start-up with a promising technology offering a lot of possibilities, a new type of battery, but which does not know what strategic direction to take in order to achieve long-term profitability.

Studying its situation would be the occasion for us to present several concepts that managers in fields where technology and innovation matter need to embrace if they want to take relevant strategic decisions. We are going to start our analysis with a quick reminder of the case, what are the critical points to keep in mind before to present some considerations relative to the work of several experts, researchers in the management of technology and innovation. Finally, we will conclude with some suggestions for the executive team of fortu Powercell.

It would help us to answer adequately to the questions of fortu Powercell's executive team. Another work we would like to quote is the work of Christensen on disruptive innovation. To summarize, we can differentiate two

type of innovation: sustaining and disruptive. A sustaining innovation targets demanding, high-end customers with better performance than what was previously available. A disruptive innovation consists in the introduction of a product, a service which is not as good as currently available products but compensates thanks to its simplicity, its convenience, its low cost which would appeal new or less-demanding clients.

Thus we distinguish two types of disruptive innovations, the new-market disruption and the low-end disruption. The first one is competing with non-consumption, at the beginning, before pulling out customers out of the mainstream market into the one because of the convenience of the product/service. The second one is focusing at the low-end of the original mainstream value network, on the customers whose expectations regarding the product are lower than what is actually proposed on the market.

It is quite critical to define what kind of innovation is the fortu Powercell because the way people should manage sustaining and disruptive innovations are totally different. A sustaining technology strategy is not a viable way to build new-growth businesses for instance and usually once they have developed and established the viability of their superior product, entrepreneurs who have entered on a sustaining trajectory should turn around and sell out to one of the industry leaders behind them.

Also, an idea that is disruptive to one business way be sustaining to another. If this is the case, it is better to redefine the product or the service in a way that it would be an opportunity which is disruptive relative to all the established players in the targeted market space or another solution is to not

invest at all. Otherwise, it could be extremely difficult to beat the established companies which would defend their positions. Burgerlman and Siegel would also contribute to our analysis with their work on the minimum winning game.

This is the “ first major market opportunity that is limited enough to provide a clear target for technology and product development efforts in the short-to-medium term, and sufficiently large that successfully pursuing it provides a foundation for long-term corporate development”. When the MWG has been defined, the top management can set relevant milestones against which meaningful progress can be measured. The risk of an undefined MWG is a focus on a set of feasible but fairly limited and unconnected milestones along a road that leads nowhere or the elaboration of a series of vague visions.

The first MWG is influenced by 3 drivers, the technology development, the product development and the business strategy. The management team should put a lot of efforts to balance their influence in order to prevent one of them to dominate the interplay, because of the potential negative effects related to each one of these driver. Nevertheless, one of them should be the main driver but not all the time the company is trying to achieve its MWG. Shifting the balance of drivers in due time is necessary to achieve this goal.

We mention this work because we would like to determine if one of the options considered by the Fortu Powercell management team is a correct MWG, if they have developed a correct thinking about the options they defined. Considering the nature of the product Fortu Powercell wish to sell, we must consider the work of Henderson and Clark on architectural

innovation or the technology S-curve for components of Christensen. About the first named, it raises a distinction between several innovations as they could be incremental, modular, architectural or radical.

Incremental innovation basically refines and extends an established design whereas radical innovation establish a new dominant design. A modular innovation is an innovation that changes a core design concept without changing the product's architecture and finally a architectural innovation change a product's architecture but leaves the components and the core design concepts that they embody unchanged. Qualify the fortu Powercell innovation would give us some clues about how established firms would react if the product is commercialized.

The input of the S-curve theory in our thinking is that it forces us to not forget that the other technologies are maybe not mature and still have some potential that could lead to a fierce competition between them and the fortu Powercell technology. Finally, we would like to mention the work of Christensen, Musso and Anthony about capturing the returns from research, which talk about when, where and why integration is needed and introduce the notion of decoupling point.

Basically, it illustrates the fact that a product with proprietary, interdependent architecture is subject to an interdependence of its components. The way one component is designed and made depends on the way the other components are being designed and made. In this case, the control of the design and manufacturing of every critical component of the system by a process of integration allows companies to develop a

competitive advantage. A product with a modular architecture means that individual sub-systems can be upgraded without redesigning everything.

In this case, being specialized, not-integrated, is the best solution. We think it is important to keep in mind these notions as Fortu Powercell is looking to enter the market of batteries for defined products. If the product has an interdependent architecture or a modular architecture, that makes a difference on how Fortu Power should define its strategy. As a conclusion for this part, we want to remind that these theories and works presented are what we mainly used to mold our thinking about this case, to evaluate the situation of Fortu PowerCell and its possibilities.

### III. Suggestions

In this part, we are going to present a few suggestions for the Fortu Powercell executive team regarding what we presented before. They should give them enough indications to help them find satisfying answers to their questions. If we look at the theories we mentioned, it seems that we can just start by defining a set of questions related to them and to other constraints and see if the first option, the plant in Leipzig, is such a good solution. We could also try to see if there is another solution, another market segment which appears to be better to the point it overcomes the loss of a potential market segment.

First option: The plant in Leipzig (Market segment: Power Tools) -How well the Fortu battery responds to the four sets of questions of the management criteria theory, in the case of the power tools market? Quite well actually. It appears at first sight that the Fortu battery technology would be a profitable technology for the power tools market as it lifts a fundamental prior

constraint, provide enhanced effectiveness... -Is the fortu battery a disruptive innovation or a sustaining innovation for the power tools battery market ?

This question is subject to debate but as we see it, the fortu battery system is in part a disruptive innovation for the power tools battery market. Indeed, it would allow the creation of more powerful cordless tools which lead us to think that this is a new-market kind of disruptive innovation. On the other hand, if we only consider only the less powerful tools such as the screwdrivers, we can see the fortu battery technology as only a sustainable technology.

It represents a battery with better characteristics compared to nickel based batteries and that is all. -Is the conquest of the power tools battery market a suitable MWG ? What are their following milestones ? We do not think that the power tools battery market is a suitable MWG because this is only a sustaining innovation for the single largest product category, which means that established players in the market would try to defend their market shares and, in a long-term perspective, we can imagine they would have to sell the business.

Second option: fortu Powercell gives up the power tools battery market and license its technology Another way to formulate the relevance of this option is to ask the question: is there a better MWG that fortu Powercell could choose ? A MWG that will compensate the loss of the power tools battery market segment ? After what we said in the previous argument, that the power tools battery market segment was not a very good MWG, and

considering all the other opportunities offered by this technology, it would be surprising not to find a better one.

The advantage with this option is that the first entrant with this technology in the global market won't be fortu Powercell. They would have the chance to have a concrete feedback about what their technology is really capable of when it comes to mass production, what would be the reactions of major players in the business. Quick reminder: the first entrant is rarely the one that would capture the value of the technology.

Also, it would give them some funds to be relatively independent from external capital, to keep doing some research or for a potential new venture. They will not have to use such a complicated financial operation to gather the funds and maybe they would not have to deal with conditions defined by their partners or at least it would be less constraining. Finally, they will have some time to think about everything we mentioned and there will maximize their chances to define what could be the perfect MWG for them and what milestones it could imply.

But they have to keep in mind that is possible that this technology is not a disruptive technology for any market and consequently that long-term development would be difficult. So we think that there must be a better MWG for fortu Powercell and its technology but what would that be Final suggestions In this final part, now that we have defined that the second option is the best, as we see it, we are going to present what we think is a proposition of better MWG for fortu Powercell and we will conclude with a few recommendations.



It is important to precise that this is only a proposition, we are not going to develop this thought too further as we think that the question of the fortu Powercell management team is answered and that they consequently have time to evaluate their different options. We think that the pedelecs (bicycle with electric assistance) would be a good MWG for fortu Powercell as it is limited enough to provide a clear target for technology and product development efforts in the short-to-medium term, and sufficiently large that successfully pursuing it provides a foundation for long-term corporate development.

Indeed, the prices and margins are high in this market segment and most of the price depends of the battery. The segment size is important, around 100 million, which is big but not too much. It would be a low-end disruptive innovation compared to the NiCD and Li-on cells in the sense where the bicycles would be simpler, with a smaller battery that won't need to be recharged too often, which is much more convenient. Indeed, we think that the technological advantage of the fortu Powercell would lead to these improvements, these enhancements for the product.

The bicycles could also be cheaper as the price per Wh would be lower which could drive new customers, previously repelled by the high price. The important market of Netherlands will not be far from Karlsruhe, so a plant could be build over there. If this MWG would be a success, it would be possible to move to a sequence of MWG: electrical scooters (Italy is also not that far from Karlsruhe) - electrical cars (which can be considered as the ultimate target, the maximum winning game).

Beyond the choice of the MWG, and as a conclusion, we would like to recommend Fortu Powercell to pay attention to develop its absorptive capacity, in order to remain at the peak of the battery technology and then be able to respond with energy to the responses and attacks of other players, and in a long-term perspective, in the case they would be successful, to put a lot of efforts to define clearly its strategic intent.