

# The Stand of *SolidWorks*: “The nature of our success is that *SolidWorks* understands the mind of an engineer!”

Exclusive interview with Jeff Ray, *SolidWorks* Chief Operating Officer

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*This is not the first time SolidWorks representatives have met with us nor the company's first interview published in the Observer. In the past, we have had the pleasure to meet and to talk personally with Vic Leventhal, Ilya Mirman, John McEleney, Jon Hirschtick and Tobias Andersson. Every time we have had very interesting and frank conversations. We tend not to ask more general and standard questions about the company because we are not meeting for the first time and hopefully not the last, and we respect SolidWorks' tim. That is why, practically without "warming-up" we offer SolidWorks the opportunity to concentrate on the questions that are important and interesting to our readers. Obviously, SolidWorks might not like some of these questions, which could seem a bit harsh. But, please remember that we highly respect SolidWorks, otherwise we would not be here.*

*There is another reason why we counting very much on SolidWorks' openness, it's because thanks to the great initiatives of your colleagues SolidWorks is now an honoured participant in the historical VIP project "CAD/CAM/PLM Portraits Gallery", which was started by our magazine last year. To be included in the limited number of participants, the person has to have made a great contribution to the industry development from our point of view. Your portrait will be placed on the Observer's first cover and your interview will open its content. We congratulate you, because participation in our Portraits Gallery is the highest award we have. Before you, only four people became participants of that project. So, let's start!*

*– Mr. Ray, for a long time SolidWorks has been a leader in the 3D CAD market, but the Autodesk Inventor package was forced to catch up with you. Today based on the financial reports we have obtained, Inventor is the most widely sold 3D package in the world, overcoming SolidWorks by the number of seats sold in a year, and by the overall volume of its user base. Autodesk's Manufacturing Solutions Division earns more money in a year's time than SolidWorks. Can you comment on this, please?*

In terms of revenue, you must understand how the numbers are calculated. For example, Autodesk groups the sales and revenue from several of its software products that cannot be considered 3D mechanical tools, into its reported revenue. In other words, Autodesk will lump the revenue from AutoCAD (a 2D product) into the numbers that it reports to the public for its overall 3D software sales. The numbers reported by Autodesk are very misleading.



Jeff Ray brings more than 25 years of experience in global technology sales, management, and operations to *SolidWorks*. As Chief Operating Officer, Jeff is responsible for developing the sales, distribution, and marketing infrastructure of the company. Previously, Jeff served as vice president of worldwide field operations at business software vendor *Progress Software Corp.*, where he was responsible for all customer-facing field operations in dozens of countries. Prior to that, he was the vice president of global solutions at *Compuware Corp.*, where he launched the company's integrated software/services practices and grew their annual sales from zero to \$100 million. Jeff began his career at *IBM*, where he held numerous management positions over a seventeen year period. Jeff earned a bachelor's degree in economics from *Texas A&M University*.

Also, you must keep in mind that what you are seeing is the result of a very carefully crafted advertising and PR campaign courtesy of Autodesk. The fact is – every day, every hour, at least four Autodesk customers will stop using their products and start using SolidWorks — and they will never go back. This fact is very disturbing for Autodesk as you can imagine. Every day, SolidWorks takes customers away from Autodesk, introduces them to SolidWorks and they embrace our products and never look back. So, what you are witnessing from Autodesk is the behaviour of a company that is very concerned about its future. Now, why does Autodesk feel that stating its #1 status is so important? It is important for one reason – if you, as a vendor, believe that your customers will only purchase software based on market leadership. However, we know that our customers are smarter than that, and they want to analyse and assess the claims that the 3D CAD vendors are making before making a purchasing decision. We know that our customers want to buy the best CAD tools on the market that will help them design better products and ultimately make them successful. Customers do not care if a company is #1 – they simply want to get their jobs done in the best way possible.

When SolidWorks first opened its doors, we operated out of a garage in Winchester, Massachusetts. There were five people in the company and we struggled to pay the bills. We knew in order to lead the market and succeed that we had to have a superior product. How did we achieve this goal? By focusing 100% on making mechanical engineers and designers successful. SolidWorks does not try to be “all things to all people.” In other words, we are not focused on architects or Hollywood artists. Instead, we focus on **our core mission – to help engineers and designers develop the best products in the world.** We are not interested in claiming that we are #1. **The only thing that matters is – can I as an engineer or designer get my job done, can I get my product to market in less time and with higher quality?** Every time an engineer asks that question, he/she will ultimately choose SolidWorks because he/she will look beyond marketing and PR campaigns and really investigate the 3D CAD product and its daily use. That is why every hour, four Autodesk customers join the SolidWorks user base.

In terms of customer satisfaction, last year an independent customer satisfaction blind survey rated

SolidWorks as the leader in the 3D CAD market. In terms of production usage, you can do a search on Google, Monster.com, or other job sites, and see the postings for employment and skills requested. You will see, that 10 –12 times the number of searches is for people with SolidWorks skills or SolidWorks experience. **SolidWorks dominates the market when it comes to production usage.** Essentially, SolidWorks is not interested in wasting the engineering community’s time talking about revenue or leadership rankings in the market. We prefer to spend time developing the best product to help engineers and designers succeed and develop the best products possible.

*– We cannot say, that the current situation in the 3D CAD market was unexpected for you. Autodesk was openly stating that it would do anything to become #1. During the last few years, our editorial department thought that if Autodesk were so brave as to reduce Inventor’s price by two thousand dollars, that even a difference in the functionality between SolidWorks and Inventor would become obsolete. It looks like Autodesk was reading our minds! In Russia, the prices of the Inventor Series and Inventor Professional have been reduced by 2,600 and 3,900 dollars respectively. This is in comparison to six thousand euros for one license of SolidWorks in Europe! And, even a special price for the Baltic States, like 5,000 euros per license, does not make much of an impression when Autodesk is slashing prices so low. Can you comment on this, please?*

First of all, if The Baltic States are that concerned about the price, I would suggest that they spend some more time investigating 3D CAD tools because Inventor is certainly not the cheapest product in Russia.

I will give you an example of how Autodesk reduces the price of its products in other regions as well. In Brazil, Autodesk typically discounts each license of Inventor by more than \$1,000 per license. And the result? The two largest Autodesk resellers in Brazil have terminated their relationships with Autodesk and become SolidWorks resellers. Why? Because Autodesk misunderstood the market. They thought that by simply reducing the product’s price that they could gain market share. The fact is that 3D technology requires good training and support. And, if you don’t have a reseller network that is



financially stable and can attract, recruit and train the best minds to help engineers use the product, the market will fail. And that is what happened in Brazil to *Autodesk* when they tried this pricing experiment last year. They misunderstood the fact that customers expect high quality, support, ongoing training and help. As a result, they lost their two largest resellers, one of whom has been with *Autodesk* for around 20 years. They simply misunderstand the mind of the engineer and designer. They don't understand that people want to know how to use the product well. *SolidWorks* software is easy to use, but the fact is, there may be five or six different ways to design a product, because of the rich features that we offer. **So, the value of our reseller network is that they are financially stable; they are led by high quality, brilliant engineers who provide very good training and support.** We have over 300 resellers around the world who have been with us for years. Why is that? Because our model really works. **We understand the mind of the engineer!**

You mentioned 100 *Autodesk* dealers in Russia – get the list and in a few years we will see how many of them are still in business, supporting their customers. *Autodesk* will always say that its dealers are growing rapidly, but it is just because they are selling a lot of *AutoCAD* (not *Inventor*) and force their customers to upgrade. What is really offensive is that *Autodesk* has put encryption in *AutoCAD 2007*! Have you asked them about, why they have done so? To serve the needs of the engineer...?

If it was only about market share, *SolidWorks* could drop its prices dramatically and we could get a lot of sales and claim, that we are dominating the market. But it is superficial; it doesn't solve the fundamental issue. The reason why we opened our business ten years ago and why we are so successful today is because we listen to the engineers.

Take a look at the *General Motors (GM)* Corporation, for example. *GM* was the largest and most successful car manufacturer in the world. They had one goal – to grow their market share. Once they started doing that, it stopped paying attention to the needs of its customers, and it stopped supporting them. Today, *GM* is a second-class automobile manufacturer.

– *Following our Editorial opinion, big and great developing Russia deserves that SolidWorks would open there its representative office, which main task and duty would be expanding of the existing dealer channel. And certainly – the close and consequent work with the Media and advertising agencies. Can you comment?*

We know that we have a long way to go in Russia and we are willing to make the investments. That is why I was in Moscow yesterday! However, I cannot comment on when we will open an office in Russia. All I can say is that our fundamental model is to have a *SolidWorks* local office with the employees managing the operations very soon. We opened an office in Latin America two years ago and our business there doubled every six months. So, when the time is right, when we know that we will do the right job in supporting the needs of our customers, we will make that investment.

I will share with you, what analysts are telling me after they actually sit down and try to use *SolidWorks* and its competitors' products. When they stop looking at demos and presentations and actually start to use *SolidWorks* and our competitors' products, they realized there is a big difference between what has been shown to the user and the actual everyday use of the software. In order for us to engage in the market, we have to do a better job in supporting our channel in Russia. Because the engineers and designers who are competing in the world market understand that they have to have the best tools. The price of a 3D CAD product is a tiny fraction of what it costs for them to do business. If that product cannot support what a customer needs to do, if it is not open, if it doesn't allow easy exchange of data and collaboration, if there isn't a large community of users around the world that he can network with, what is the value of the product? It can be free and the customer wouldn't take it. **So, SolidWorks is going to do things based on what our customers want — not what our competitors do!**

– *What are your plans to offset Autodesk's pricing policy?*

We are not going to do anything. *Autodesk* is not listening to its customer. It is making reactive decisions that aren't serving the best interests of the customers, and obviously not serving the best interests of their channel.



– The scalability of PTC's solutions allow the company to compete with products in the various CAD/CAM/PLM market segments, including midrange packages, where SolidWorks traditionally dominates. Taking in mind the fact that today in Russia, Pro/ENGINEER Foundation Advantage is sold for less than six thousand dollars, why would people choose to pay more for SolidWorks?

Think about why PTC had to lower its price. Did PTC do this to gain more market share? No. They did it because a few years ago it cost 30,000 for the same product, but customers were choosing SolidWorks! Why was that? It wasn't because SolidWorks software was the cheapest. They picked SolidWorks, because it helped them get their work done better.

PTC in Russia has been around for a long time and I respect them, because they created this market. It was the first company to understand the power of 3D solid modelling. PTC has lowered its prices all over the world; it is not unique to Russia. I can get Pro/ENGINEER bundled with a lot of designing and sketching products in many cases for less than the SolidWorks price, if I am willing to commit to a three or five year subscription offering.

– Don't you think, that because PTC currently is regaining its position in the market that it becomes a very dangerous competitor? Especially taking into account the fact that PTC is willing to reduce its product pricing at any time. Your comments, please.

No, it is not dangerous for us at all, because at the end of the day, designers buy what they like and helps them get their jobs done. I would suggest you research PTC's license growth over the last five years. Not the revenue growth, but just core CAD license growth and how the market is responding to PTC's actions. Data can tell you a lot. It's one thing to have a great marketing message and great PR machine, and another thing to look at the real numbers and understand what the customers are spending their money on. Of course, time will show if such a policy will pay off. What is interesting is that all we have talked about in this interview is pricing, but not about helping engineers get their jobs done.

– And nevertheless, pricing still remains a very important criterion for the countries with emerging economies...

We understand that very well. A bright example of that is China, where minimum wages for the worker are 80 dollars per month. I visit China three times a year, and every time I am there, I have customers telling me how much they love SolidWorks, how fast their companies are growing, how they are winning new customers and are able to collaborate due to the software. But, they never complain that the product is too expensive. What we would like to strengthen even more is our dealer channel worldwide to help them assist even more customers.

– How do you evaluate Solid Edge's competitiveness? When and in what conditions do you lose a deal to SE?

We just don't see much of Solid Edge in competitive situations. I think it is a very good product and I respect what UGS has done with the product. But, UGS has to figure out what the real strategy is for the product in terms of Solid Edge versus NX. I think they have some big challenges ahead. We've solved those problems with Dassault Systemes: we have two fundamental channels and two fundamental businesses that serve our two fundamental markets. It means we don't have a channel conflict nor internal competition, and this is what UGS customers are complaining about now.

– I just returned from Moscow where I participated in a round table with UGS Vice-Presidents and general specialists. Until the Autumn, Solid Edge will have its own CAM modules developed on the basis of the famous CAM solutions from UGS, now – NX. In your mind, will this strengthen Solid Edge's position in the market? Does SolidWorks have any plans to acquire a company/developer of a CAM system?

No, SolidWorks does not plan to acquire a CAM company. 95% of the world's CAM manufacturers have integrated SolidWorks into their core geometry. That means, when a company buys a CAM product, it is very easy for them to know that SolidWorks is able to collaborate, and "talk" with this CAM product. **We are years ahead of SE in this direction. They are just thinking about the problems now, that we solved years ago.**

In SolidWorks 2007 we offer the "feature editor" and "the dimension expert" – the reason why we put "the dimension expert" into SWIFT technology (SolidWorks Intelligent Feature Technology) is because we understand that it is necessary to capture all of the dimensions, but not required to have a CAM module within SolidWorks. If that were the case, we would have done that years ago because we work with all the CAM vendors very well. The main concern is to have tight dimensions and tight tolerances to help actually manufacture the product. We are not going to acquire a CAM vendor because our partners are doing



*SolidWorks press conference in Copenhagen*

great work in this area and we work very closely with them to ensure that the designs can actually be built correctly the first time.

– *Exactly like SolidWorks got COSMOS some years ago, Solid Edge recently also got its own CAE system – Femap. What is your comment, please?*

Again three or four years ago, everyone thought that only a handful of people in a company could do analysis. Typically, in a company there would be one guy, who is the *Finite Element Analysis (FEA)* expert. Someone else is designing something and then sending it to him to be tested. There was a myth that FEA was a dark room or black box that nobody understood. We didn't believe that - we thought that the best time to analyse something is upfront as you are designing the product. And, our competitors laughed at us. They said: "Oh, that is not true and it will never work!" So, we bought *COSMOS* and have integrated it into *SolidWorks* software. Now, anybody using *SolidWorks Premium* has the ability to analyze their products as they design them upfront with *COSMOS*. And, everyone in the *3D CAD* market now realizes that *SolidWorks* was right first and now analysis is being added to all *CAD* solutions available on the market. The things we are working on and solving today are things that are years ahead of what our competitors do. Why? **Because our competitors wait to see what *SolidWorks* does and then copies it.** So, if you are an engineer or designer and are worried about building great products, do you want a product, that was designed for the market three years ago, or one that is designed for today? This is a fundamental question engineers and designers must ask. I personally salute what our competitors are doing by trying to integrate analysis.

– *Do you know that Autodesk's Russian office became a member of the Business Software Alliance (BSA) Russian committee? Is SolidWorks ready to undertake something similar in Russia?*

*SolidWorks* is an active member of the *BSA* as well. At the moment, we are not 100% focused on Russia, because we believe that there is an urgent need for the *BSA* in other parts of the world as well. Certainly in China the piracy situation is the worst. In fact, I just spent a week in Beijing with the *BSA*. I will tell you about our policy on piracy, because it is unique. I am often asked how I feel about the fact that **for every license of *SolidWorks* we sell in China that 12 licenses are pirated.** I've been told that in China we are the most pirated *CAD* product (The same in Latvia. – *Editor's note*). Well, it's nice to know, that we are so popular! In fact, when I was there, I bought a copy of our product for two dollars from an electronic supply store. It is very troubling, but there are two ways to handle piracy. One is to work closely with the government agencies. The second is to try to attack a customer base, hire lawyers, and send out frightening letters. We have chosen not to do that, because we don't think that sending frightening letters about piracy to our customers is serving the needs of our customers. We don't think that option can



*Speaking Jeff Ray, SolidWorks COO*

build long-term, healthy relationships. Instead, we are working at the grass roots level with the government and international agencies to make sure that *Intellectual Property Rights (IPR)* law is enforced.

I will give you an example. *Microsoft* implemented a strong policy in the late 1990's in China. They hired a lot of lawyers and started aggressively enforcing the licensing policy, and they had all the rights to do that. Then they started to send frightening letters to companies across China. At the same time, *Oracle* just made people aware in a respectful way and asked that they simply pay for the licenses that they had illegally purchased. *Oracle* spent their money on educating people to be aware. To date, *Microsoft* is still not making a profit in China. China is now focused on developing an operating system, but *Oracle* is increasing its penetration in China. Why is that? Because if you treat your market with respect and dignity, then over time you will win. But if you treat your marketplace with disrespect, you may win today, but it is going to be very difficult in the future. We just take a more long-term view of this problem. But don't get us wrong, we feel very strongly about piracy and the *IPR*.

– *Obviously, every release of SolidWorks software is a significant addition to the company's history. The newest (and very much awaited) product SolidWorks 2007 — what are your expectations for the product?*

Our expectations are very positive because so many customers participated in the *Beta* program. Our *Beta* program consists of thousands of customers and resellers who work closely together with *SolidWorks* to build a tight community. Our customers loved the *beta* version. In fact, the number of participants of the

*SolidWorks 2007 beta* version testing was 40% larger than last year. So, we are very optimistic about this year just based on *beta* customers' feedback. They told us that they are thrilled with the quality, performance, and reliability. They liked the fact that we cut the file size in half for storing large files.

In terms of the new features, we are helping so many different industries that it is overwhelming. The stamping industry is thrilled with what we have done with stamping. The consumer products industry and the medical industry love what we've done with surfacing. We really blurred the line between *SolidWorks* and some of the high-end sketching and surfacing tools. We still have a long way to go, but the customers were really amazed by what we have done and how easy it is to use.

The most attention getting feature in *SolidWorks 2007* is *SWIFT*. Basically, *SWIFT* allow our customers, using the power of the computer, to solve very mundane problems. Because 3D CAD is history-based, there is certain logic - when you make a change it affects something that was done in the history tree. We decided that the computer should be smarter than that and automatically go back and adjust for the changes. And, there is additional functionality in *SWIFT* that we will bring out over the life of *SolidWorks 2007*. So, if a customer buys *SolidWorks* or upgrades to *SolidWorks 2007* we will put more features in *SWIFT* and certainly will not wait until the next *SolidWorks 2008* product announcement. Customers are going to be very excited about what we deliver and in a short period of time.



*Jeremy Hines, SolidWorks European Technical Manager*

*– From your point of view what are the key advantages of SolidWorks 2007 versus Inventor 11? Maybe we can go through the main subsections: Part Modelling, Sheet Metal, Assembly Modelling, and Drafting. And, we can review other aspects such as interoperability, associativity, etc.*

The best example is that over the last year, five very large *Autodesk* resellers have stopped selling *Inventor* and are now *SolidWorks* resellers. As I mentioned before, two of them are in Brazil, another one in Latin America, one in Switzerland and one in Sweden. These resellers told us that there was a dramatic difference in the performance and productivity between the superficial demo, where *Autodesk* has invested a lot in flashy things to make it look good, and the real everyday usage of the product. It is like getting into a car that has air conditioning, automatic windows, a nice radio and a beautiful dash, but it won't go over 30 km/h. It is hard to describe the feeling. If you look at the feature list for the car, you wonder how good it is. But if you have to live with that car every day, if you need that car for your life and work, then which one will you choose? That is the best way of describing the difference. However *Inventor 11* is the best version they have released. But I also think, that the problems they are trying to solve now, *SolidWorks* solved three or four years ago.

*– I think the biggest Autodesk advantage over SolidWorks is that almost all 2D customers, which you both are trying to convert to 3D, are AutoCAD users. Do you think they will have as easy of a transition converting to SolidWorks?*

Of course, and our challenge is to make the *AutoCAD* user base aware of *SolidWorks*. I will give an example. Think of it as a war and you are inside the fortress. I lived like this, when I worked for *IBM*. *IBM* had 80% of the global *IT* market. Everybody was saying they wanted to be like them. Books were written about *IBM*, and it was telling customers how to do business. But *IBM* itself was a fortress with big and thick stone walls and tried to keep its customers inside that castle. Outside of that castle, all the people were thinking about how to storm that castle. And over time, being inside *IBM* became very depressing because every day people were leaving the company because when they saw what was outside *IBM*, they never came back. *Autodesk* has the same challenge trying to protect what is inside of its castle – the *AutoCAD* base. If the transition is supposedly smooth, then why did they make it so hard for their own customers to open up existing *AutoCAD DWG* files? Is it really smooth when *Autodesk* encrypted the newest version of *AutoCAD*? The really smooth way is what *SolidWorks* has done for over 500,000 customers – make it easy and fast to use both 2D and 3D data. I applaud *Autodesk* for recognizing that the marketplace is using both 2D and 3D. Even five years ago it was much harder, 10 years ago – it was almost impossible. What this means is that it has never been a better time for 2D customers! Now they have lots of choices.

– Can you please name clear industry segments and niches where SolidWorks feels it is strongest? If such segments and niches do exist, is this due to software functionality or the reseller community, or other reasons?

The industry segments actually reflect the strengths of our market, and our mission was to serve the 3D CAD market. Certainly, machinery and the companies that design and develop machinery – is our largest market and it continues to be our best source of growth. The people who are working on leading-edge technologies have told us that because of SolidWorks they can present photo-realistic images, models and analyses of their products to government regulators even before they have actually made them. And, they can get government approval before they heavily invest in manufacturing.

The other market that is growing rapidly is the consumer goods industry, and we will continue to do more for that market. This market has sky-rocked for SolidWorks, particularly in Asia, where more consumer products are designed. In the past, Asia mostly manufactured products, but now it is more design-oriented. The same is true in India. As a result, we are doing very well in these markets. The medical industry is also a great industry for us. We are doing well particularly in the segment that produces hips and joints for replacement. People are taking digital scans of a hip through tomography to make it fit exactly.

I think the most misunderstood thing about SolidWorks, as a company is the strength of our

channel. I've been in the technology industry for a while and participated in lots of different revolutions. **It is rare that a company wins a competitive battle based solely on having the best technology!** Instead what makes a company successful is its commitment to helping people use the technology. At our annual *SolidWorks World* event we honour *SolidWorks* resellers and employees. It is unique, because we were the first company to recognize resellers as our employees. We also recognize resellers who have sold over 500 seats of *SolidWorks* in their careers. The stage was fully packed with people getting pictures and awards. This past year, we also recognized those resellers who were with us from the very first day, who signed up with us when the product did not work very well, when *Autodesk* and *PTC* dominated the marketplace. We were unknown at that time and those resellers took a risk with *SolidWorks*.

We are not in the market just to make a lot of money for ourselves, exercise stock options and retire at a young age. The founders are still with *SolidWorks*! *Jon Hirschtick's* office is right next to mine and he is not doing this for the money. He does it because he believes in it! People over time do not work just to make a lot of money, but they work because they like what they do. And if they like what they do, they are going to do a really great job. That is why you see the competition lowering the price of their product. Believe me, I am very sensitive to pricing, if I wasn't such, I wouldn't spend time talking to customers and the press. I would just stay in my office and hide. It is stunning to think, that when we introduced our product, we were the lowest priced product on the market. And now with the *SolidWorks Premium* pricing we were amazed, because **our average selling price increased last year, but not because we charged more, but because our customers are buying things like *SolidWorks Premium* to get more functionality.** Customers see the value we bring them. When they see it they say that it is worth every dollar.

– *SolidWorks recently acquired the PDM system, Conisio. PDMWorks, which you deliver separately or together with SolidWorks Office Professional doesn't have the reputation of being a serious system. SolidWorks Russia was then forced to build its own variant of PDM for SolidWorks. Your parent company Dassault Systemes has more three PDM systems – ENOVIA, SMARTEAM and MatrixOne. What obstacles persuaded you to purchase another PDM product?*

It's a good question! The process of choosing a PDM system is not something we did casually. We began this process a long time ago. We recognized the gap, which wasn't being served. I am not talking about *high-end* PLM enterprise-wide solutions for *Boeing* or *Airbus* and I am also not talking about simple *Desktop PDM* systems that are shared by 5-6 engineers (which our *PDMWorks* product is perfect). I am talking about the gap between these things – when you have multi-site, large, complex assemblies that have to be shared and have to have high quality integrity and superiority. That is the space that we



*Thérèse Bäcklund, Marketing Manager,  
SolidWorks Northern Europe*

haven't been serving. To explain this I need to give you a short background. We felt comfortable, that given the demand of the time that the market was being served well by partner products. You have to understand, that in the 3D CAD market we have three times more partners than *our competitors*. So we really understand that space quite well, because our resellers sell these partner products. Our partners work with us before we announce next generation products. It means that when we announce new products, the partner products will work automatically with the new software. When we announced *SolidWorks 2007* every *Gold Partner* product around the world works with it. We have a very tight relationship and that gives us a real clear visibility into the PDM enterprise space.

In terms of options – there were three of them. First, we could buy a partner's product, because all their products are doing well, have a good reputation and we knew them. Second, we could take *SMARTEAM* or a so-called "caffeine free" version of it, because there are a lot of modules in this product, which aren't needed in a PDM product. The third option was to develop a new system. Each one of those options had to be assessed on a lot of factors: what it would cost, what the risk would be and how long it would take to bring it to market. Over the last year, we assessed those options and presented our findings to *Dassault Systemes* with the recommendation we proceed with *Conisio*. Why was that? ***SMARTEAM* has all the functionality that we needed, but it would probably take two years for us to get it down to a size and a shape that is acceptable for our customers.** Moreover, we wanted something that is intuitive, something that a user with maybe a part time *SQL* server kind of a person could implement within a matter of days, but not weeks, months, or years. But *SMARTEAM* is such a sophisticated program, that it would take us so long, that it didn't make a sense. *Conisio* already works well with *SolidWorks*. We have a very large customer here in Copenhagen who uses 500 seats of *SolidWorks*. They have very sophisticated plant systems around the world and it's all run by *Conisio*. And we have many other similar examples of very successful, large deployments of *Conisio* with *SolidWorks*. Moreover, 15 *Conisio* resellers in the US are also our *SolidWorks* resellers – it is basically already in the family. The *Conisio R&D* team has worked with us for years, so it was an easy and smart thing for us to do.

– *In continuation of the previous question. Practically all your competitors already announced the launch of their PLM systems for small and medium companies. What is the attitude of SolidWorks Corp. to such initiatives from your competitors? And how do you evaluate their achievements in this domain? What is your attitude to out-of-the-box PLM solutions for the midrange market?*

**I think the midrange PLM initiative is "a hammer in search of a nail".** We just don't see a need in the market. There is no such thing as midrange PLM

because every company is unique and has its own way of doing things. The fundamental challenge of PLM is the same as ERP (Enterprise Resource Planning) – as a software vendor, I am going to force you to change the way you do business. It can't be a light version; it is the same basic PLM – "an old wine in the new bottle." You have to look at the customer needs beyond the "packaging." Are the customers "crying out" for these needs? I guess that they aren't. I think right now the biggest achievement is a great deal of publicity, interest and energy, which has been put into PLM. There will be a lot written about it, but we have to really look at what our customer needs. And the customer in this space doesn't need PLM. Vendors have invented really great PLM products for years. For example, *MatrixOne* was profoundly innovative when it came out, but is still losing money. Last year, they generated 100 million dollars in sales, but spent 120 million dollars to get that. And there are many other similar examples. This has nothing to do with technology, but with what customers are willing to spend their money on to solve their immediate business needs.

Another good example is *IBM*, which for many years tried to figure out how to break into the midrange market. *SAP* for the last 18 years tried to do the same. Have they done that? No. It is tens of hundreds of times the size of *Autodesk*, *PTC* and *UGS*. They can buy them tomorrow if they want to. But if the brilliant companies run by brilliant people with massive *R&D* teams and all the resources in the world have not been successful, you have to ask, why? It is because it was "a hammer in search of a nail"! When you start talking about PLM, you start talking about asking somebody to change their religion, behaviour, habits and their core culture. Because if you really want to affect massive process improvement, you have to change the process. I am not saying this is good or bad; I am just saying this is hard to do.

– *You already have a CAD product line with SolidWorks, an analysis product line with COSMOS, and soon you will have a full PDM system. Will you create your own PLM line?*

No, it is not going to happen. Because PDM is data, it is a corporate asset. Data is data. And the beauty of this world is that there are great technologies, invented by great companies for managing complex enterprise-level data. The hardware is there, the software is there, the operating system is there, *SQL* server is there – those are stable reliable products. And all we've done is figure out the way to make it very easy for a guy who can't afford a large *IT* staff to manage his data. That is very different from PLM.

– *In the exclusive interview to our magazine last year, Mr. Francis Bernard stated: "We manage SolidWorks absolutely separately from our PLM business." Based on that are we able to conclude that SolidWorks Corporation is following its parent company Dassault Systemes' point of view about SolidWorks' position in the market?*

We are not interested in enterprise-level PLM because our customers aren't asking for it. But *DS* goes after the customers who need it. Though *Boeing* has *SolidWorks* seats, it shouldn't run its enterprise on *SolidWorks*. Every PLM vendor that is out there and isn't aligned with *PTC* or *UGS* is a *SolidWorks* business partner. Why? Because they need to be able to access the *SolidWorks API*. We have the most open technology and we publish the *API*. There are user groups that do nothing but just exchange the *API* for *SolidWorks*. So there isn't a middle range PLM vendor that isn't a *Gold Partner* of *SolidWorks*. We know their business quite well and spend a lot of time helping them and supporting their needs. So, it isn't a case of *PTC*, *UGS* or *Autodesk* discovering something new and different. We have the same access to the same thinking. We just don't see the business value in going after that space. Just look at the mid-market PLM profits for the last five years, you will be surprised. To sum up, first, we don't see enough potential right now, second, there is still so much potential for helping the engineers to design their products that we are going to focus on. We let other companies try to be "all things to all people."

*– If PLM is not the space you are targeting, then could you please share with our readers where will SolidWorks development be in 5 years?*

We have spent a lot of time with our customers who are trying to design great products and bring those products to market. They basically do four types of work, which I am going to simplify to: designing of things, analysing what they've designed, sourcing components, and building the products. We have already done an extraordinary job introducing automation in the design process and we've broken the line between design and analysis. We are not going to enter the manufacturing market because we *OEM (Original Equipment Manufacturing) SolidWorks* to the *CAM* vendors. But no one is doing anything in the space of *sourcing components* and making it as easy as possible. But if you look at the way the engineer is spending his time, you would understand, that by now we have automated only a tiny portion of what an engineer does.

As great as the newest *SolidWorks 2007* is and as loyal as our customers are, we really only have automated a small portion of their day. They spend most of their days in meetings, and spend a lot of time doing file conversions because *CAD* companies have made it impossible to exchange data. And they spend a lot of time trying to understand where to move components. Do you know how they are doing that today? An engineer goes into a room with stacks and stacks of vendor catalogues! What is really disturbing is that billions of dollars were invested in the *CAD* market, but no one has broken the code on rapid, open access to content. We understand that is not going to happen tomorrow, and it is going to take probably years, because there are no standards on how you present your designs – there are too many different kinds of standards within geographies and countries, and there is a very little availability

of *CAD* with all the geometry and attributes. It is possible, because there is a lot of money to be made.

Think of yourself as a company that wants to get its product on the market faster than its competitor, and you can hit a button on *SolidWorks*, saying: "Go find me an actuator with the necessary attributes, it has to weigh this much." And the computer would find it for you. This is something that the marketplace hasn't responded to yet. Is there value to the engineer trying to find that component? Is there value for a components manufacturer presenting his products to the engineer in that format, instead of spending money putting it into a catalogue that becomes yellow and dusty on someone's shelf? So, as excited as we are about that space and all the good things we've done, we've only "scratched the surface" of really introducing automation to design. We don't worry about *Hollywood actors*, we don't worry about enterprise PLM, we worry about the guy who is trying to get his job done. And we are here to serve his needs.

But actually this is not new to us, because we already have a great product called *3D PartStream.NET* and we have our "marketplace" called *3D ContentCentral* (*3D ContentCentral* is an online resource powered by *3D PartStream.NET*, offering direct access to time-saving *CAD* models from leading suppliers and individual *SolidWorks* users worldwide. – *Editor's note*).

*– Is there anything that we didn't cover today or anything you would like to say to our huge Russian-speaking readership?*

I would like to say, that I don't think we have served the needs of the Russian market to the extent that we need to. It is not a criticism; it is a matter of putting focus and emphasis on our core market. But as we continue to expand and grow, Russia is where we need to be. It is just a matter of making sure that we are doing the right job serving the market at the right time when we present ourselves. Because there is no value in putting a product in Russia, that hasn't been localized and doesn't have high quality support and commitment. We have to do all of these things in the right way, rather than just make a big splash, discount the product and pray for a miracle to happen. We want to serve the Russian market the right way. As a result of that, I am very excited and optimistic about our future in Russia. Russia is a very good market for us; it is a market that doesn't tolerate medium grade products, it is a market that is sensitive to high quality and to precision, to testing, validation and verification. And it is a very natural space for us to be. Though our business there has doubled over the last year that is not good enough. We are absolutely committed to strengthening our position in Russia – that you can be sure of. If I weren't serious about it, I wouldn't be visiting Russia today.

*– Thank you so much for such a great, frank conversation!*

7<sup>th</sup> of June, Copenhagen, Denmark. ☪