

Industrial design · Consumer products and retail

## Pilipili

Industrial design agency uses NX to create innovative designs that add value to customer's lives

### Product

NX

### Business challenges

Develop complex designs with many parts

Differentiate through innovation

Deliver cost and time savings in prototyping

### Keys to success

Think from the perspective of the target audience

Analyze bottlenecks

Cooperate with external partners

Provide ongoing monitoring of quality

### Results

Created added value through innovative designs

Realized shorter time-to-market using simulation

Quickly implemented changes late in the design process

Communicated product design information to the customer more effectively early in the process via advanced visualization

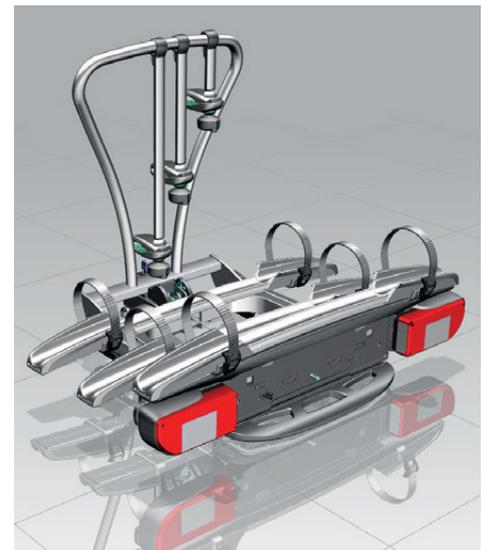
### Pilipili helps customers shorten time-to-market with the help of the Siemens PLM Software solution

#### Innovation – a key differentiator

In a market dominated by a large number of long-standing players, coming up with a new product that will entice customers is a real challenge. To capture market share, the design must be truly innovative. A company can only set apart a new product from existing products by offering the consumer new features. What might such innovative features be in the case of a car-mounted bicycle rack? Cykell put this question to Flemish industrial design agency Pilipili. The result: the 'just click' bicycle carrier, which was introduced to the market in 2013.

Pilipili is based in Kortrijk, Belgium. Founded in 1996, its multidisciplinary team consists of 13 staff members who are fully committed to innovation. The company tagline, "Differentiation through innovation and design," is more than just a phrase: it implies a results-oriented approach to the development of every kind of product, regardless of the sector.

For example, the company has developed innovative solutions for toothbrushes, traffic cameras, weaving looms and suitcases. Pilipili targets four key sectors: consumer, medical devices, industrial equipment and



machinery. The design agency is also involved in brand design, user interface design and animation.

"Innovation always adds value for the customer," says Kurt Deleersnyder, a computer-aided design (CAD) engineer at Pilipili. "Design, ergonomics and ease of use are all vital product features. If two products in the same price category offer the same functionality, the client will always pick the more attractive and user-friendly one. Innovation is an important tool for beating competitors, especially in times of crisis, because it allows you to be novel and different."

### Results (continued)

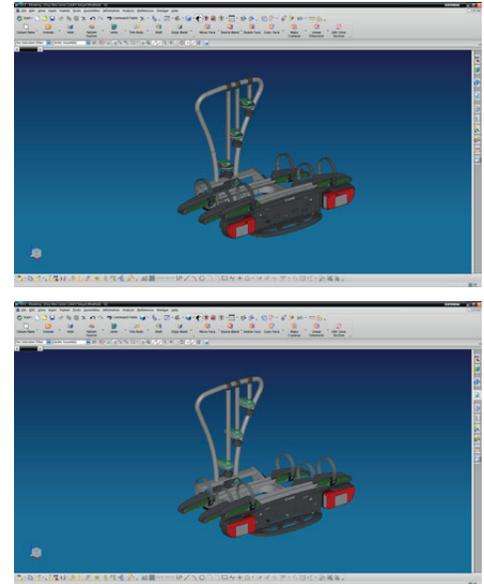
Designed an exceptional bike carrier for Cykell, which was successfully received by target market of senior citizens and day trippers

### Meeting the target audience's wishes

Cykell approached Pilipili to come up with a new approach to bicycle carriers designed for senior citizens and day trippers. This target audience generally saw existing carriers as too heavy and cumbersome. Furthermore, many people today have electric bikes that tend to be heavier and don't fit on existing carriers.

The first phase in developing a new carrier was analyzing the users' problems. Where do the difficulties lie and where can value be added for the consumer? Pilipili's analysis showed that existing carriers were not particularly ergonomic. They also make it difficult or impossible to open the car trunk after mounting. User wishes provided the starting point for further consideration during the subsequent brainstorm session. The team came up with many innovative ideas and the answer seemed to lie in developing user-friendly solutions for managing the weight of the rack and the bicycles. The new rack was equipped with trolley wheels and an extendable ramp so that bikes did not need to be lifted. Also, great care was taken to ensure that the car trunk remained accessible even with the rack in place.

"Looking back, we've managed to integrate almost all of our conceptual ideas into the finished product," says Deleersnyder. Two patents have been applied for: the 'just



click' tow bar clamping system and the user-friendly, easy-to-dismantle arms that hold the bicycle frame.

### Fast and flexible change

Following the analysis of problems and possibilities, the actual product design began. Several sketches were drawn by hand and then digitally transferred to NX™ software, a comprehensive and integrated computer-aided design/computer-aided engineering/computer-aided manufacturing (CAD/CAE/CAM) solution from product lifecycle management (PLM) specialist

**“The individual parts of a prototype would have to be milled and turned, which could take weeks. Now we can simulate this much more rapidly. This means we can assemble a prototype in two to three weeks.”**

Kurt Deleersnyder  
CAD Engineer  
Pilipili

Siemens PLM Software. Pilipili formerly used another CAD software, but it took a relatively long time to update models. As a result, Pilipili decided to switch to NX. With NX, changes to a design are fast and easy, and the software provides exceptional design flexibility. Such attributes were of particular importance, as the bicycle carrier is a mechanical product with more than 150 parts.

"Here the power of NX really comes to the fore," says Deleersnyder. "You can effortlessly manage complex assemblies, see how the product and components are built up with exploded views and simulate movements using arrangements."

Formerly, a large number of prototypes would have to be made in order to test whether a design would work as intended, but this can now be easily simulated in NX, saving time and money.

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### Surfacing

Another advantage is the easy implementation of design changes.

"We're a design agency, which means our added value is in the design area," says Deleersnyder. "We can easily render styling in 3D without having to know all the internal details."

One difficult design element on the 'just click' bicycle carrier were the sidelights. A number of difficult surfaces and shapes needed to be visually interlinked.

"Fortunately, you can easily change these parts with the software without having to redraw them," says Deleersnyder. "This may be carried out very quickly and with great flexibility, and can even be done in a later stage of the design process, which means you don't have to go back to the drawing board and start again."

**"This can all be simulated in advance. The NX files can easily be imported into other Siemens PLM Software solutions, greatly simplifying cooperation with other parties. We have developed a network around us with parties that complement each other. In close consultation with these parties, we can arrive at a finalized, complete product."**

Kurt Deleersnyder  
CAD Engineer  
Pilipili



## Solutions/Services

NX  
[www.siemens.com/nx](http://www.siemens.com/nx)

## Customer's primary business

Pilipili is an award-winning industrial design agency that provides services to companies in the consumer products, industrial equipment, machinery and medical devices industries.  
[www.pilipili.be](http://www.pilipili.be)

## Customer location

Kortrijk  
Belgium

The functionality of NX was especially useful as two models were being developed simultaneously. There are versions with two or three rails for carrying one or two bikes. Using NX, it was possible to develop both products simultaneously, rapidly switching between both assemblies to check changes.

## Simulation saves time and money

For the creation of numerous components and virtual testing of the product, Pilipili enlisted the help of its external partners. In the case of the bicycle carrier, it was important to test the device's weight bearing capacity, and check whether the clamping force on the tow bar was sufficient to absorb shaking caused by cobblestones whilst carrying sixty kilos.

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As a result of all this work, the bike carrier was developed in a year and a half. Deleersnyder notes that that's a short time-to-market made possible using NX.

Thanks to the Siemens PLM Software solution, making a large number of prototypes was not necessary, working with partners was easy, and design modifications could be made simply and effectively. Moreover, the product was launched successfully in Belgium, with 1,500 units sold within a few months. Cykell also plans to take the Dutch market by storm with this innovative product.

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CAD Engineer  
Pilipili

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[www.siemens.com/plm](http://www.siemens.com/plm)

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