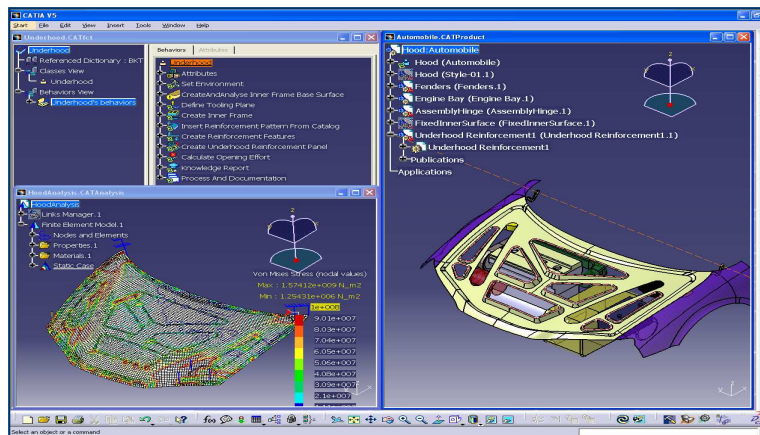
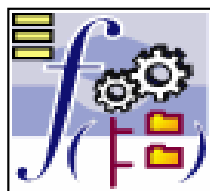


# CATIA V5 Knowledgeware

## Faster Road To Innovation



# Table Of Contents : CATIA V5 Knowledgware

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**CATIA V5 Knowledgware: What is it ?**

2

**Value Proposition**

3

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1

# CATIA V5 Knowledgeware : What is it ?

## *A Core Value for All*

- CATIA V5 Fundamental :
  - Family of dedicated applications
  - Natively integrated into V5 architecture
  - Easy to use and to deploy
- Unique Powerful Enabler :
  - Automate repetitive tasks
  - Capture, share and reuse corporate expertise
  - Enforce industry or company standards compliance
  - Evaluate and optimize product definition
  - Drive deployment of company practices fitting the process
- Versatile and Scalable :
  - Apply to any domain : Design, Analysis, Manufacturing, Electrical,...
  - Deploy progressively according to needs



*Parameters*



*Design Table*

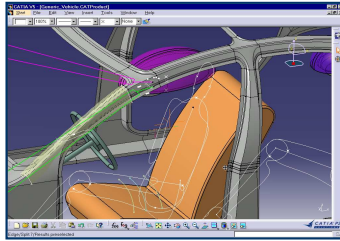


*Powercopy*

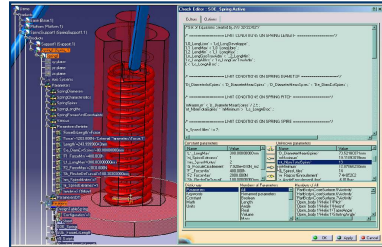
2

# Knowledgeware : Value Proposition

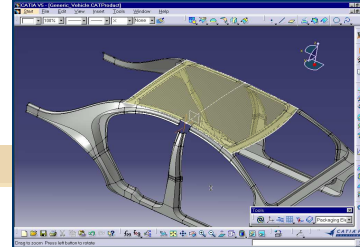
*Knowledgeware Needs are Everywhere*



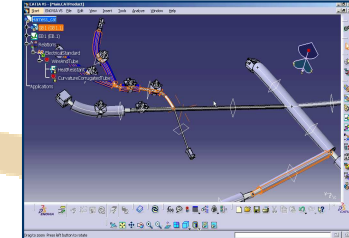
**Vehicle architecture, conceptual study**  
*Optimizing driver visibility*



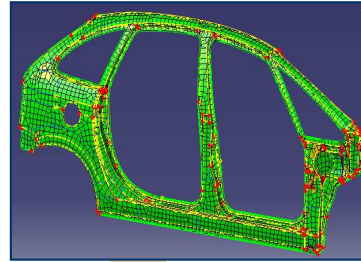
**Engineering**  
*Dimensioning a spring through definition of equations*



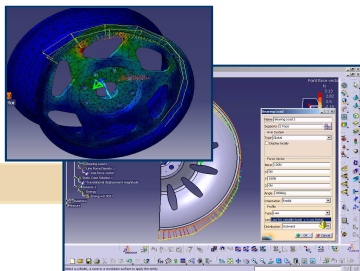
**Design**  
*Body-in-white templates*



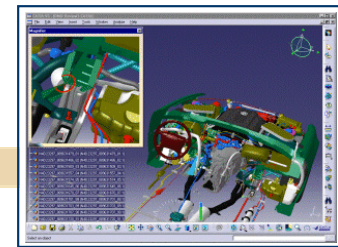
**Electro-mechanical design**  
*Technological rules validation*



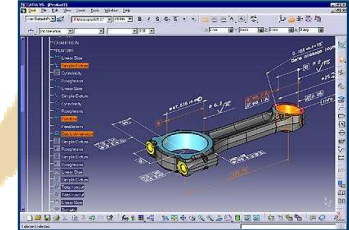
**Simulation**  
*Optimization*



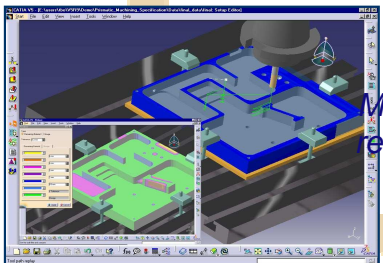
**Simulation**  
*Mathematical law for pressure distribution*



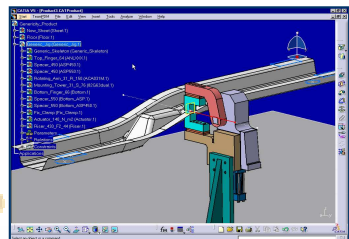
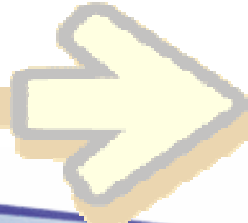
**Digital mockup**  
*Clearance/Interference checking based on Technological rules*



**Tolerancing**  
*Tolerancing templates*



**Manufacturing**  
*Machining process templates recognizing Design templates*



**Tooling**  
*Generative tooling*

## 2

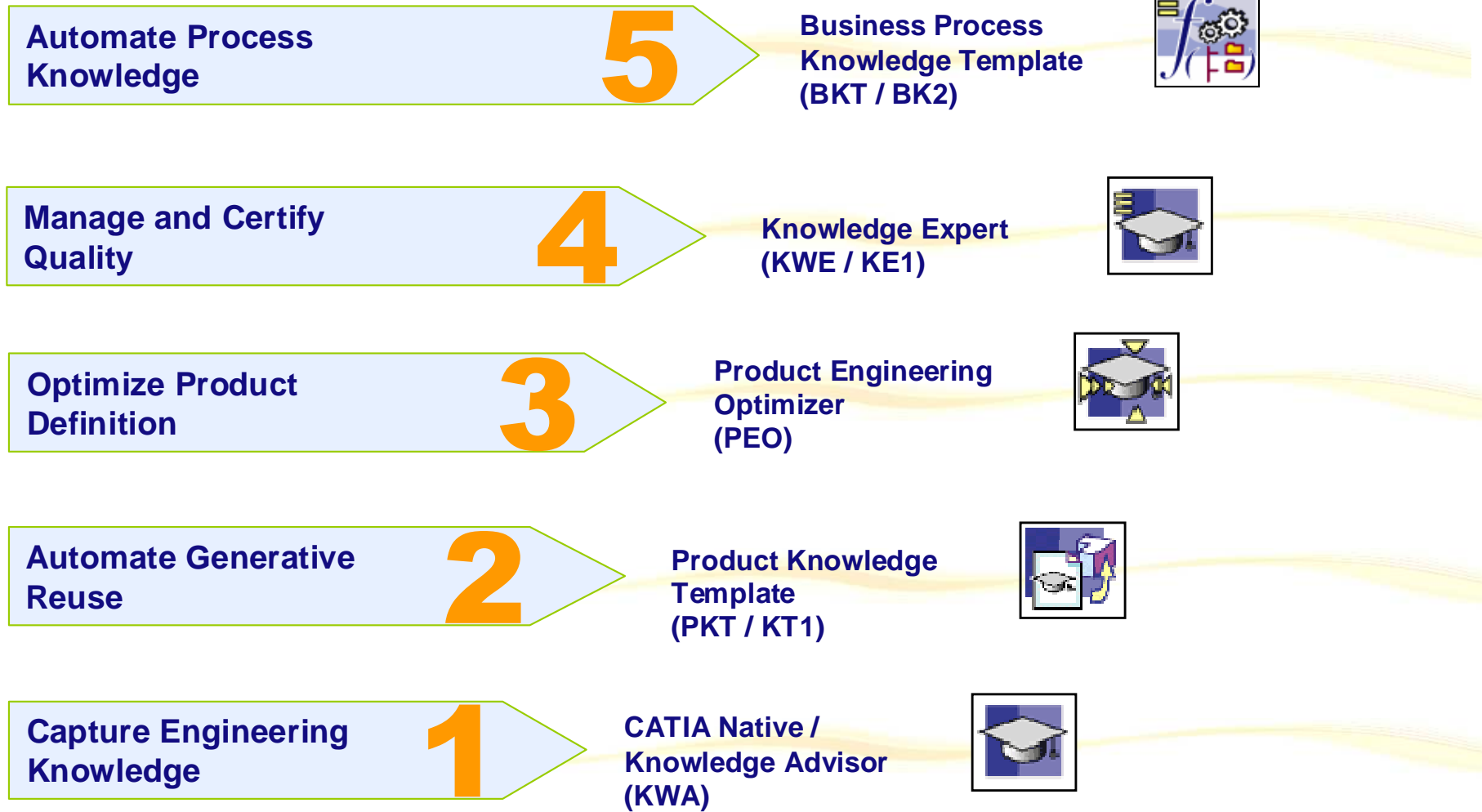
## Knowledgeware : Value Proposition

### *Answer to Key Customer Challenges*

- Develop Competitive Advantage - “Differentiate” :
  - Capture, share and expand company know-how
  - Focus time and expertise on innovative tasks
- Reduce Product Development Cycle - “Be faster” :
  - Automate product and process design
  - Accelerate exploration of design alternatives
  - Maximize design reuse
- Reduce Product Development Costs - “Be more efficient” :
  - Enforce standards and specifications
  - Integrate process requirements early in design phase
  - Automate detection of issues and increase quality
- Extend Business Volume - “Grow” :
  - React quickly and accurately to project opportunities
  - Facilitate support of decision-making

# 2 Knowledgeware : Value Proposition

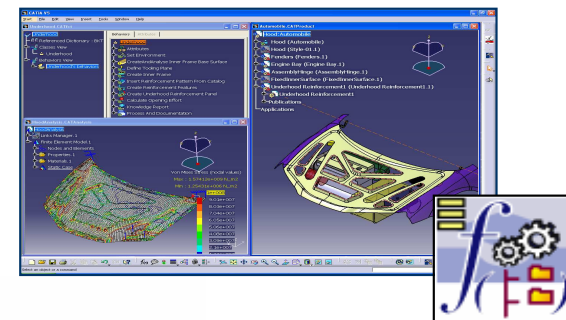
*A Scalable Offering*



## 4

## Conclusion : CATIA V5 Knowledgeware

- Native V5 PLM Fundamental
- Versatile and Flexible to fit any Process
- Accessible to All
- Providing Superior Value :
  - Capture, deploy and protect Company Know-how
  - Increase Productivity
  - Enhance Product Quality and enforce Compliance
  - Facilitate Innovation
- Natural and Scalable Implementation



Thank You



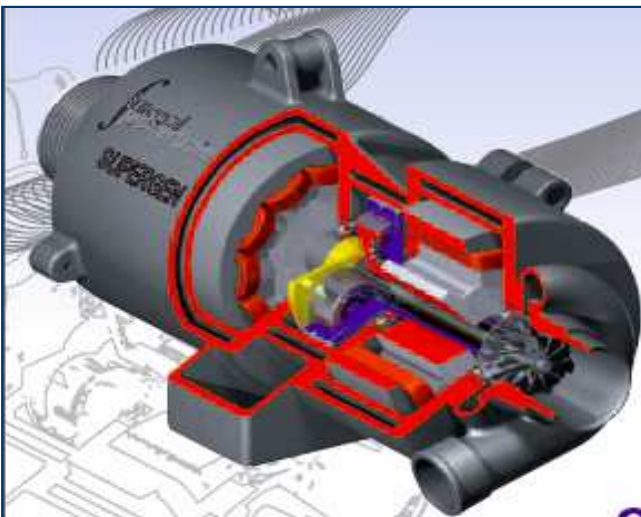


# Backup

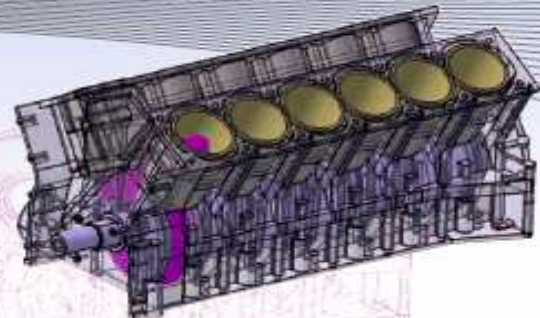


3

# Success Stories



Integral Powertrain is a leading automotive powertrain engineering consultancy which has successfully deployed CATIA V5, ENOVIA VPLM and ENOVIA SmartTeam to reduce program time and costs and improve supplier-client collaboration.



Feature



## Driving Down the Time and Cost of Powertrain Engineering

Increasing globalization and aggressive OEM purchasing strategies are driving intense competition in the automotive powertrain market. Therefore, in order to win business, Integral Powertrain must offer benefits to OEMs whilst maintaining the product quality levels now required across the industry.

A full powertrain engineering program can cost as much as €300 million, and may take up to 48 months to complete. In this context, reducing the cost and time of powertrain engineering development programs becomes a necessity to gain competitive advantage.

### REDUCED POWERTRAIN ENGINEERING TIME

Integral Powertrain has reduced development lead-times for concept design by up to 40% thanks to V5 PLM solutions from Dassault Systèmes. By encouraging design reuse, exploring more design alternatives and providing early-validation tools, CATIA V5, ENOVIA SmartTeam and ENOVIA VPLM help Integral Powertrain designers to make better decisions and reach optimal, error-free designs in a shorter amount of time.

Thanks to ENOVIA SmartTeam and ENOVIA VPLM solutions, design changes, workflow mechanisms (Smartflow) and multi-modal links (in ENOVIA VPLM) can be easily managed enabling multiple users to gain simulta-

neous access to a full and up-to-date representations of data. Also, the flow of information around the business is controlled and data management is automated, ensuring that designs adhere to defined rules.

Other benefits have also been realized. For example, engineers can find information approximately 70% faster through the use of data management, and Engineering Changes (EC) cycle times have been reduced by about 25%. In fact, overall, the manufacturing engineering cycle time has been shortened by 25%.

### LOWER POWERTRAIN ENGINEERING COSTS

Costs for powertrain engineering programs have been significantly reduced thanks to Dassault Systèmes V5 PLM solutions. This has been achieved through improved concept design, where CATIA V5 has been able to automate repetitive design tasks through the application of intelligent design templates. Also greater engineering validation has been possible by using digital mock-up and other verification tools, such as finite element analysis.

### IMPROVED COMPETITIVE ADVANTAGE

Based on CATIA V5 template-based design, Integral Powertrain has been able to capture its powertrain engineering knowledge. These

**The manufacturing engineering cycle time has been shortened by 25%.**

templates, called "Automated Intelligent Engine Design" (AIED), are used for many significant engine design investigations. Even if a customer's project is not developed within CATIA, the time savings and engineering robustness far outweigh the additional time spent translating models to and from CATIA. Early-validated designs also mean less costly downstream design modifications and fewer physical prototypes. "The more virtual simulations that can be conducted mean less

physical prototype testing, and therefore save time and money," says Roger Duckworth, Engineering Director, Integral Powertrain. Finally, faster design enables Integral Powertrain engineers to be more productive. Application of template-based design, design in context, digital mock-up and other features has reduced overall concept design leadtime by more than 40%.

### DEPLOYMENT

The benefits achieved through the successful deployment of the Dassault Systèmes V5 PLM solutions is significant and has enabled Integral Powertrain to win projects by offering a unique advantage over its competitors. Dassault Systèmes' partner Intrinsic brought Integral Powertrain his expertise to deploy

and customize the solutions to suit the needs of the business and more importantly to define working methodologies to optimize the value of the tools. Consequently Intrinsic are now involved in helping other businesses to deploy Dassault Systèmes solutions, across a wide range of industries.

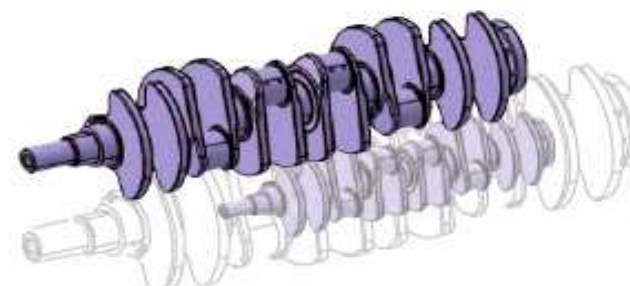
### FUTURE

One of Integral Powertrain's mid-term objectives is to accelerate concurrent and collaborative engineering to their supplier base with ENOVIA SmartTeam solutions.

"Our aim is to have all of our suppliers either using ENOVIA SmartTeam, or having access to ENOVIA SmartTeam, so that we can collaborate more effectively by giving our suppliers greater accessibility to our live database, rather than a copy of the data," said Darren Cairns.

Finally, Integral Powertrain would like to expand their use of CATIA V5 templates into the area of tooling design and business processes, not only for the automotive industry but also in the aerospace market. ❧

For more information:  
[www.integralp.com](http://www.integralp.com)  
[www.intrinsic.co.uk](http://www.intrinsic.co.uk)



# 3 Success Stories

## V5 PLM Key Benefits

**- 90%**

### Data accessibility time

Engineers and designers are able to find information 90% more quickly through the use of data management.

**- 20%**

### Cost for designing new parts

The cost of new parts in product designs has dropped by over 20% due to the reuse of designs from previous projects.

**- 75%**

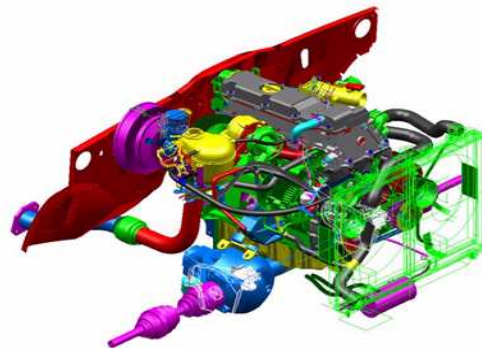
### Engineering changes (EC) costs

The use of better automation has improved the management of design changes: EC costs have been cut by 75%.

**- 10%**

### Overall concept design time

Application of CATIA V5 template-based design, design in context, digital mock-up and other features has reduced overall concept design time by 40%.



V5 PLM SUCCESS STORY

## INTEGRAL POWERTRAIN

Driving down the time and cost of powertrain engineering with V5 PLM