



# Automating Ship Assembly Planning and Simulation

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## Outline

- Company Profile
- Production Simulation SBIR Project
- AES Product Strategy
- Atlantec—es competitive Advantage
- Demo of Virtual Ship Generator

# Company Profile



- Founded in 2000
- Offices located in Annapolis, MD and Hamburg, Germany
- Core competencies include: interoperability, production engineering, and shipbuilding
- Provides consulting and software solutions under the registered trademark Topgallant®
- Topgallant® Solutions *ERP Connector*, *Plate Production*, and *Shrinkage Management* are in use at major EU shipyards

# Atlantec and Production Simulation



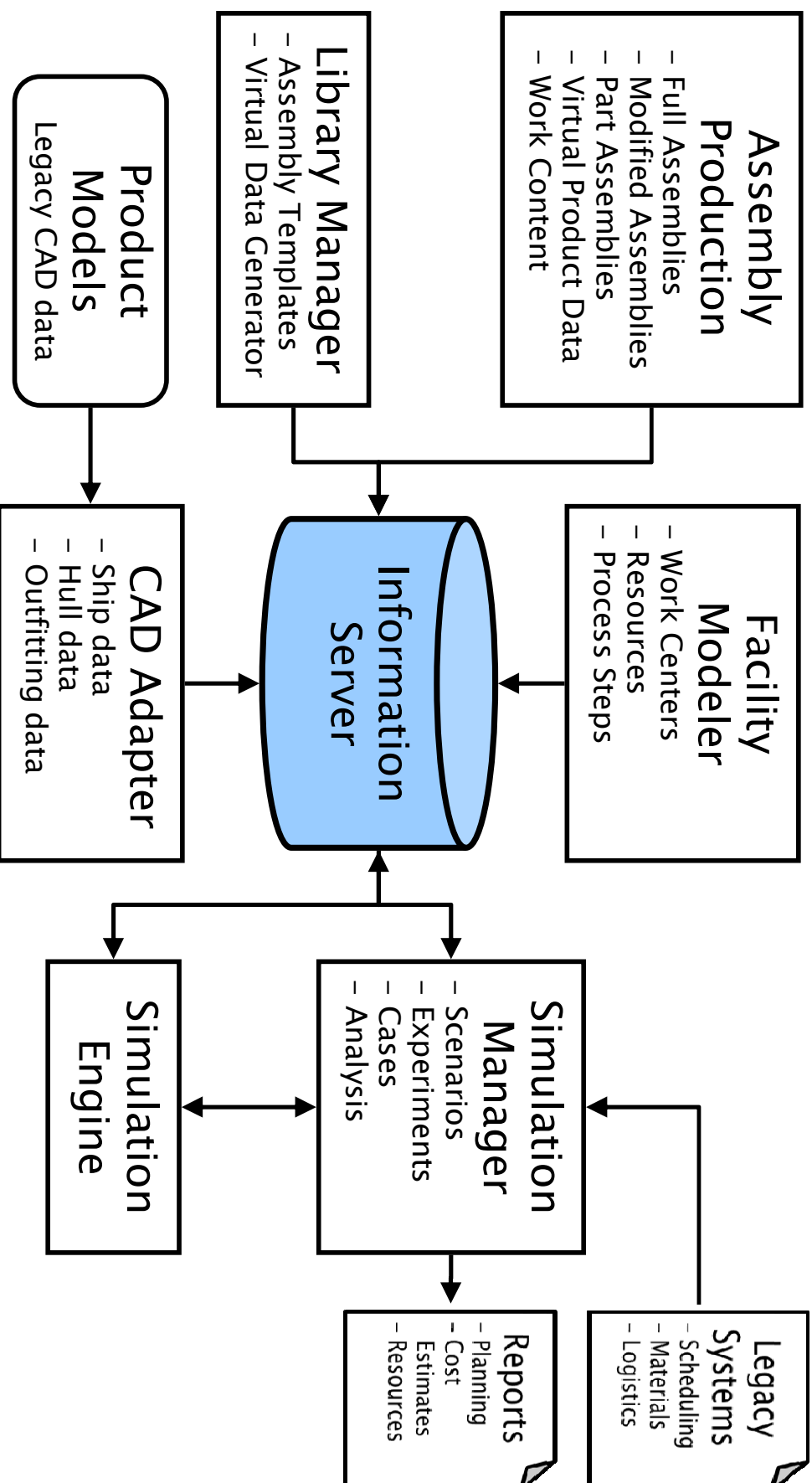
- Atlantec's Goal: Develop an affordable and practical simulation system for shipbuilders
- Fits Atlantec core competencies of:
  - Interoperability
  - Product Engineering
  - Shipbuilding
- Atlantec has enhancing base technology to automate facility, product, and process modeling
  - Adapters to access legacy data
  - Rules based *Facility Modeler*
  - *Assembly Production* access to view and modify assemblies
  - Develop assembly templates and libraries
  - Create virtual product data

# Atlantec Competitive Advantage

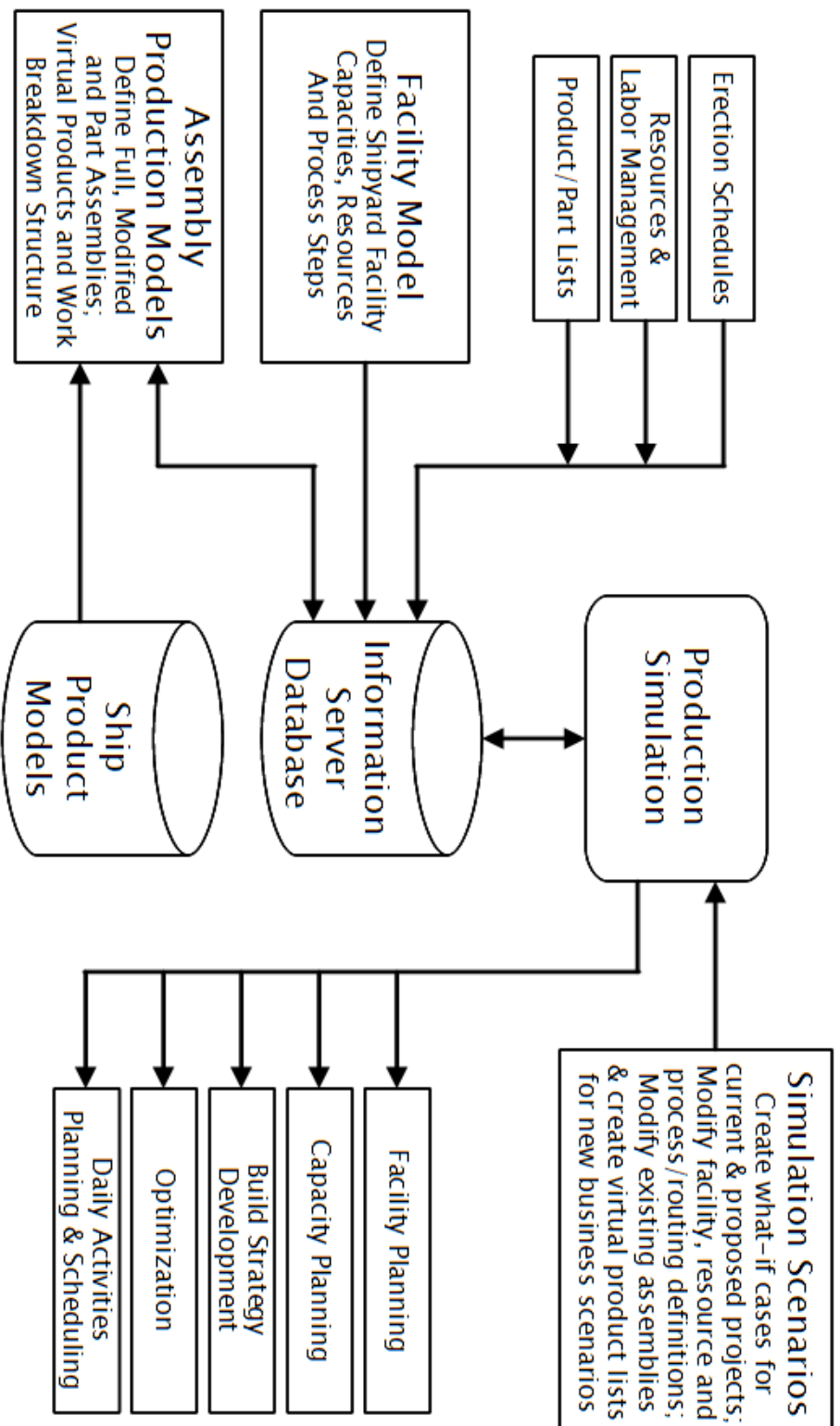


- Provide *customized tools* for shipbuilding:
  - Can be run by shipbuilders as opposed to experts
  - Automate modeling process
- Knowledge based tools to capture and maintain vital operational data
- Interoperability tools that view and modify legacy design data to automate modeling
- Tools that develop virtual product data

# Simulation Architecture



# Simulation Model





# Virtual Product Data Creation

## Library Manager - Assembly Template



Library Manager  
File View Help

LMORG

- CAT1
  - CAT1-A3
  - CAT1-A5
  - CAT1-B28
  - CAT1-B30
  - CAT1-SA6
  - CAT1-SA8
  - CAT1-105

Assembly Template Rule Set CAT1-A3 X

Name: A3  
Description: Assembly A3  
Ship Type: PRODUCT\_TANKER

Assembly Level: Parameters

Name	Mean Value	Value Range	Std Deviation
ProfileMinWeight	21.2	"U"	
ProfileDWeight	0.0		
PlateSdWeight	53.7		
ProfileMaxWeight	ProfileWeight*		
ProfileGnWeight	0.0		
ProfileSdWeight			

Subassemblies

ReferredTemplate	MeanCount	InstanceCountRange	StdDeviation
CAT1-SA6	2.75	0.0..12.0	3.85

Parts

ReferredTemplate	AvgCount	CountRange	StdDeviation	Weight	Length	Width	Height	Thickness	Material	Material Offs.
Profile	6.5	0.0..16.0	2.84							
Plate	3.25	0.0..6.0	1.35							

selected CAT1-A3

Reset Accept

# Ship Template Instantiation



Library Manager  
File View Help

LMORG

- CAT1
  - CAT1-A3
  - CAT1-A5
  - CAT1-B28
  - CAT1-B30
  - CAT1-SA6
  - CAT1-SA8
  - CAT1-105**

selected CAT1-105

Ship Template Rule Set CAT1-105 X

Name: 105      Ship Type: PRODUCT\_TANKER

General Particulars

Name	Mean Value	Value Range	Std Deviation
Assembly Specifications			
ReferredTemplate	MeanCount	InstanceCountRange	StdDeviation
CAT1-B28	5		
CAT1-B30	2		

Reset      Accept

