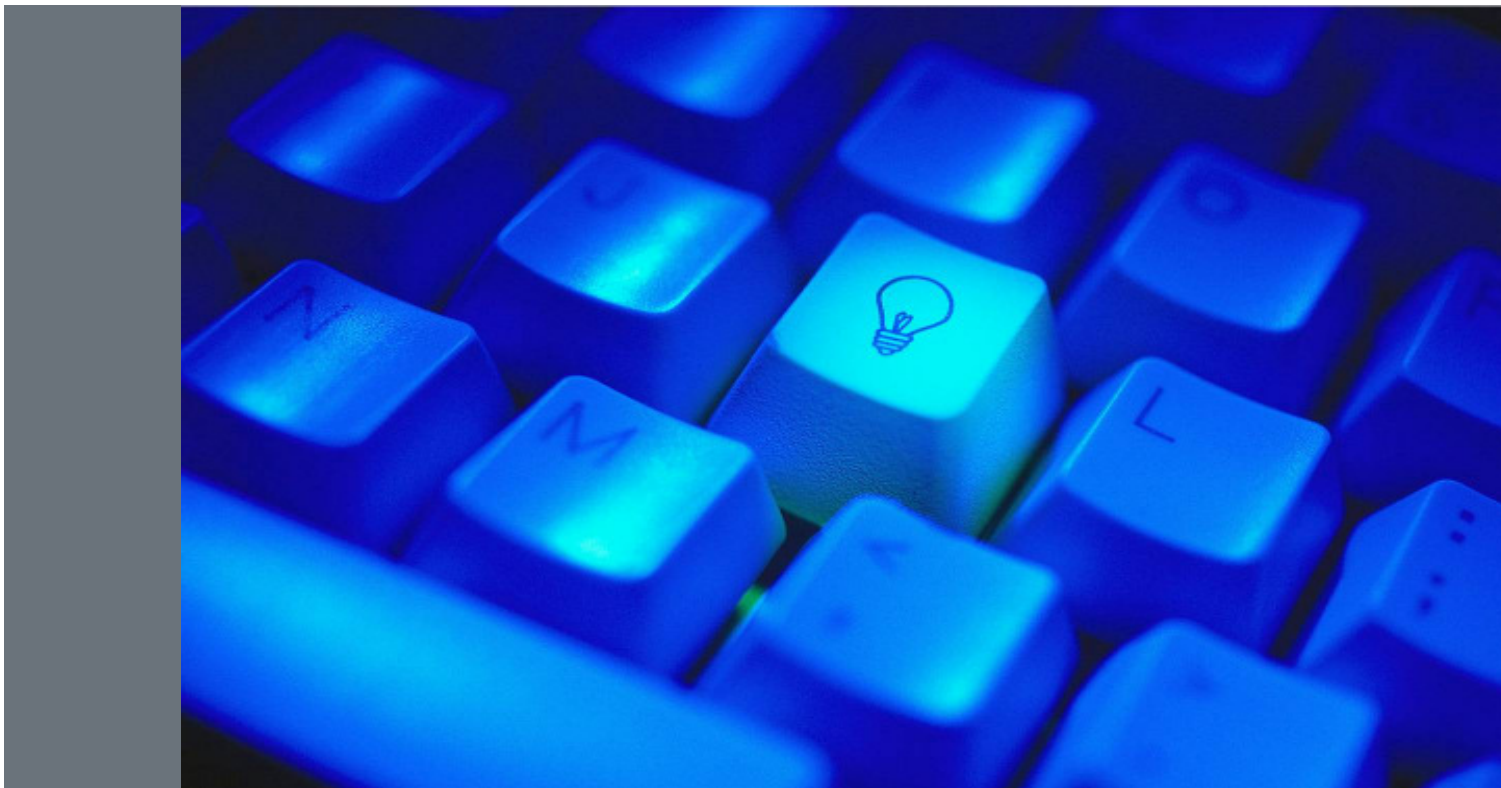


GL Noble Denton



Innovation in Gas Management Software for Commercial Operations



www.gl-nobledenton.com

Quentin Hunt

Agenda

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GL Noble Denton

GL Noble Denton - Overview

GL Noble Denton is a leading global advisor to the Oil & Gas industry

Oil & Gas (GL Noble Denton)

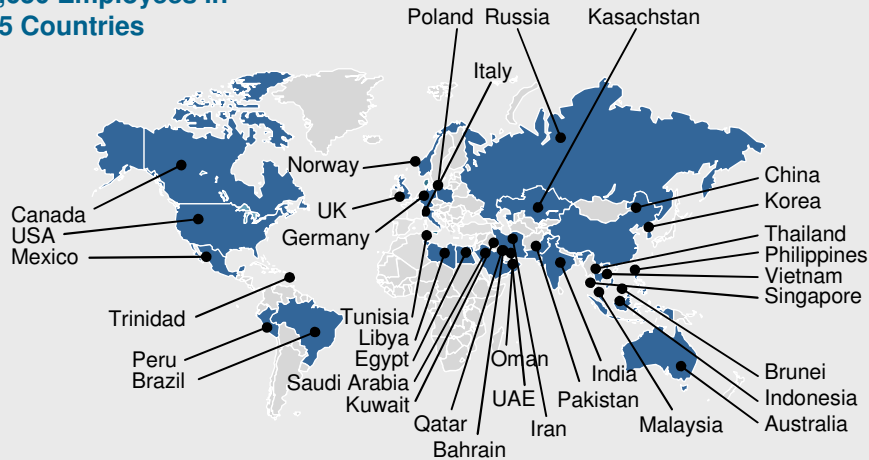
- Technical Assurance
- Engineering Consulting
- Asset Performance & Maintenance
- Marine Operations & Consulting
- Project Execution
- Software Products



GL Noble Denton comprises experts from:



3,650 Employees in
35 Countries



Oil & Gas assets



MOPU



Offshore Structures



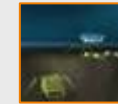
Onshore Facilities



MODU

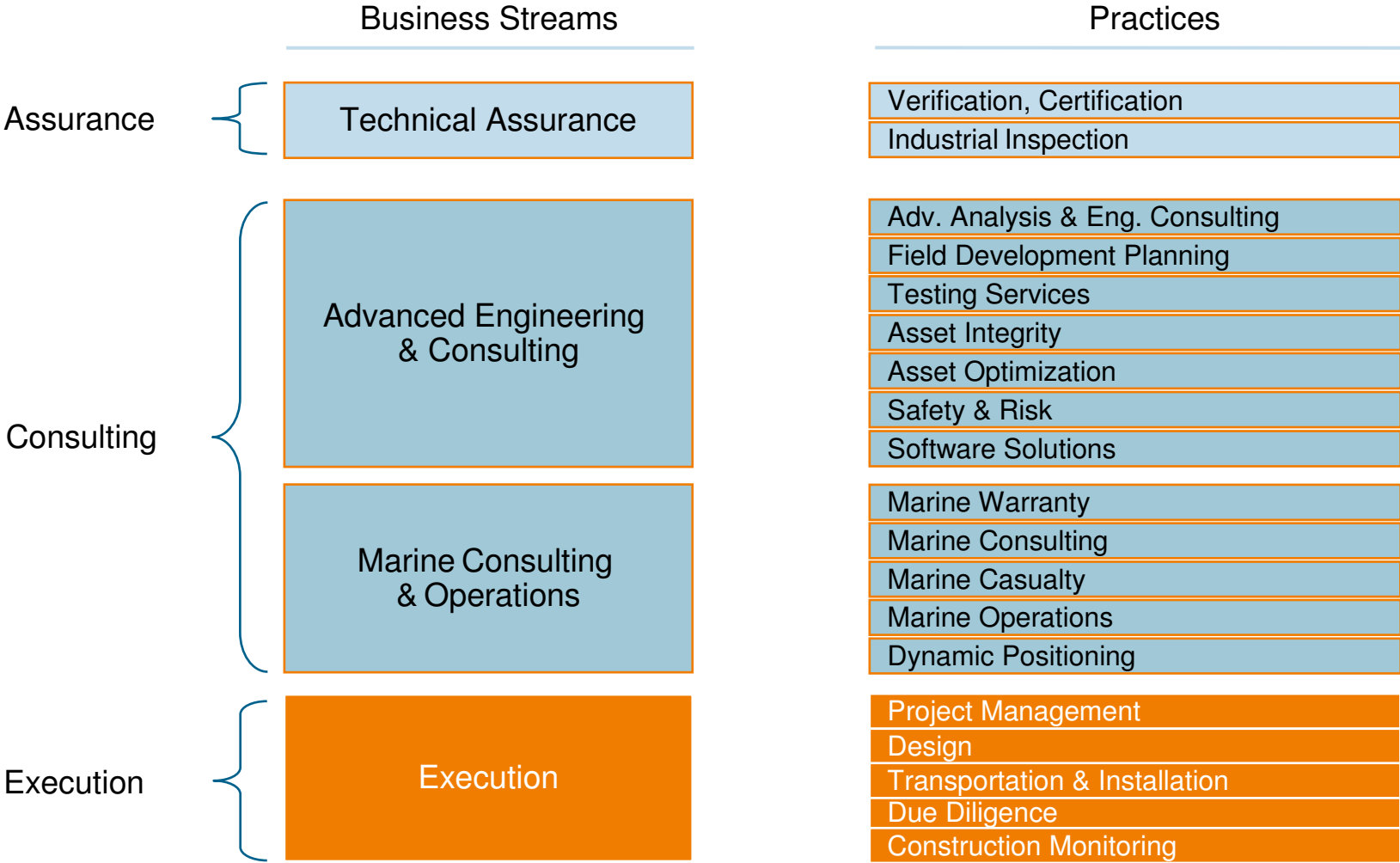


Pipelines



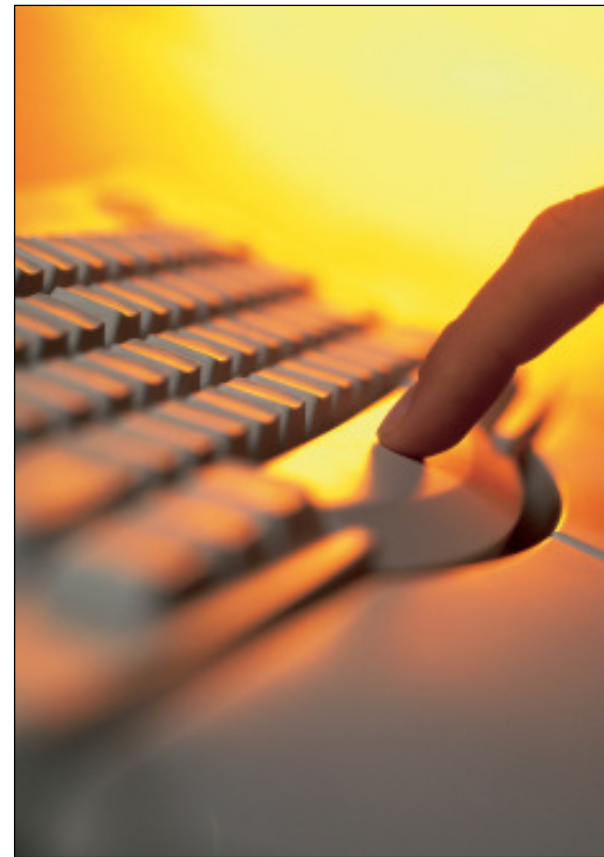
Subsea Installations

Our Business Streams & Practices



Industry leading Software and Consultancy

- Portfolio of over 40 software products
- More than 600 clients worldwide
- Comprehensive technical support
- Market leader in energy software
- Domain knowledge optimisation
- Over 30 years' industry experience



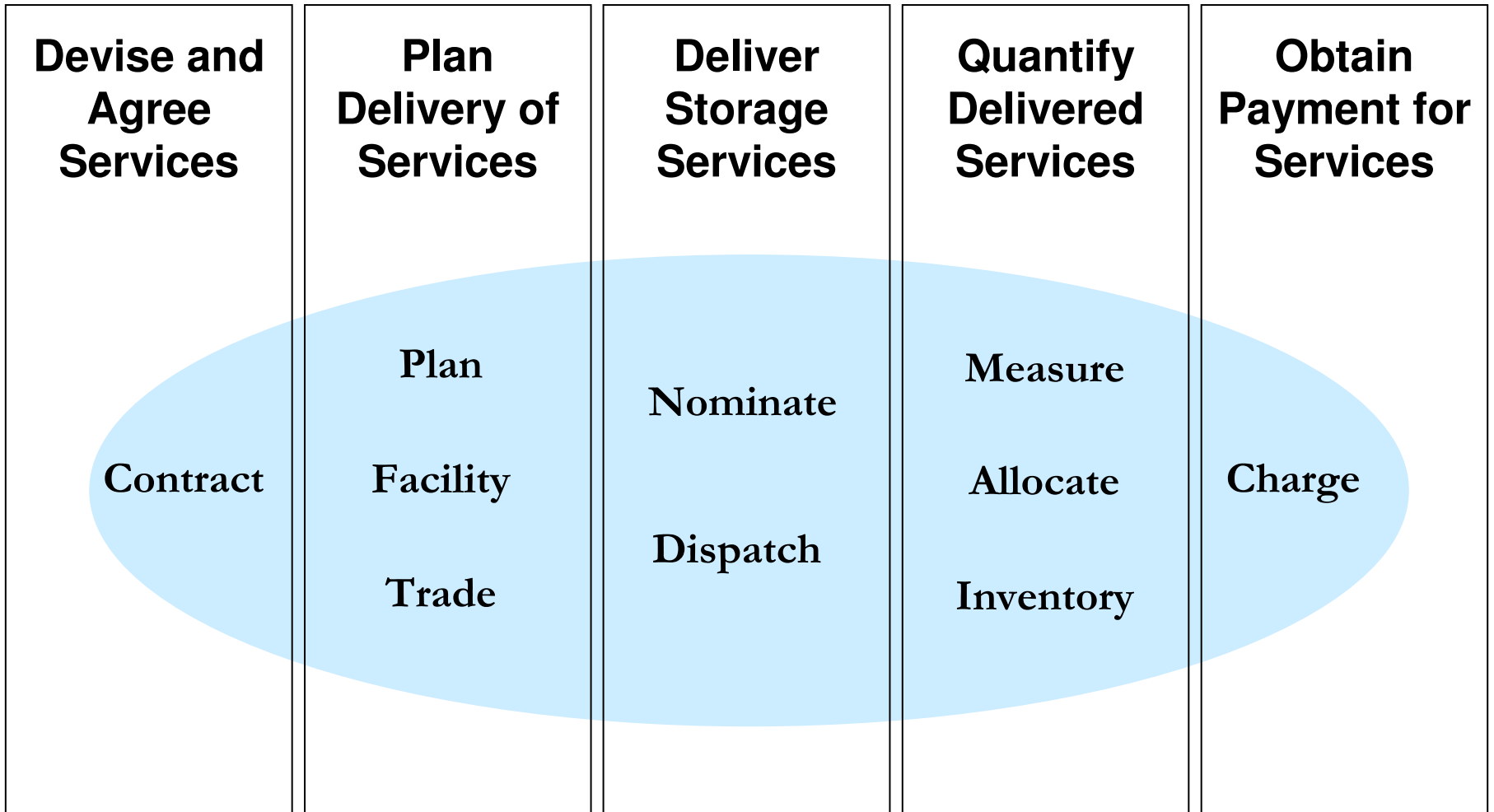
Access Manager GMS References

- PETRONAS – Star Energy (UK)
- E.ON – Foldgaz Storage (Hungary)
- E.ON – Foldgaz Trade (Hungary)
- TAQA Energy – Alkmaar Storage (Netherlands)
- TAQA Energy – Bergermeer Storage (Netherlands)
- National Grid LNG Storage (UK)
- National Grid – Grain LNG Ltd (UK)
- ExxonMobil/Qatargas – South Hook LNG Facility Ltd (UK)
- GNL Quintero LNG Terminal (Chile)
- Liquefaction Client

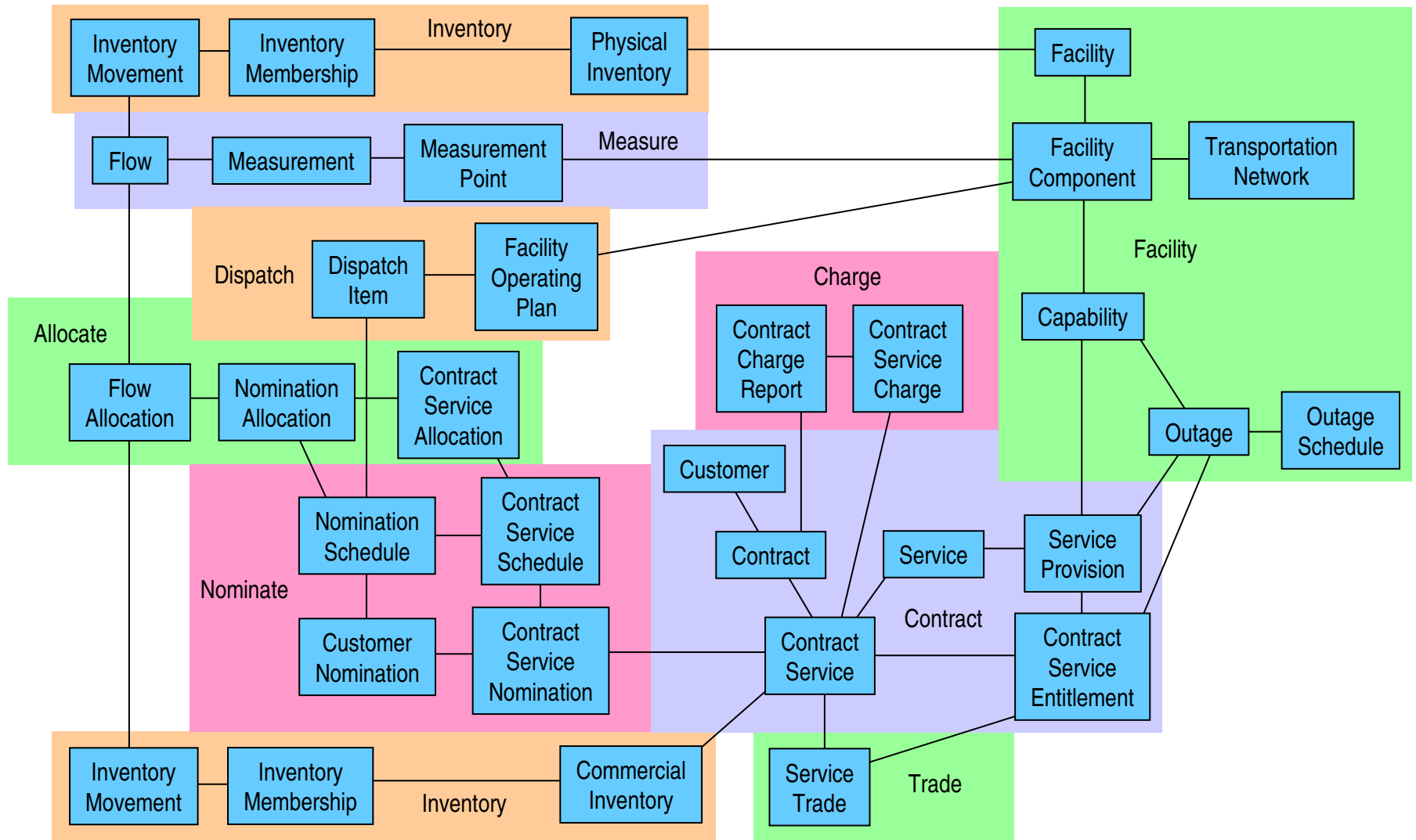
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Gas Management Software for Commercial Operations

GMS Defined (UGS)

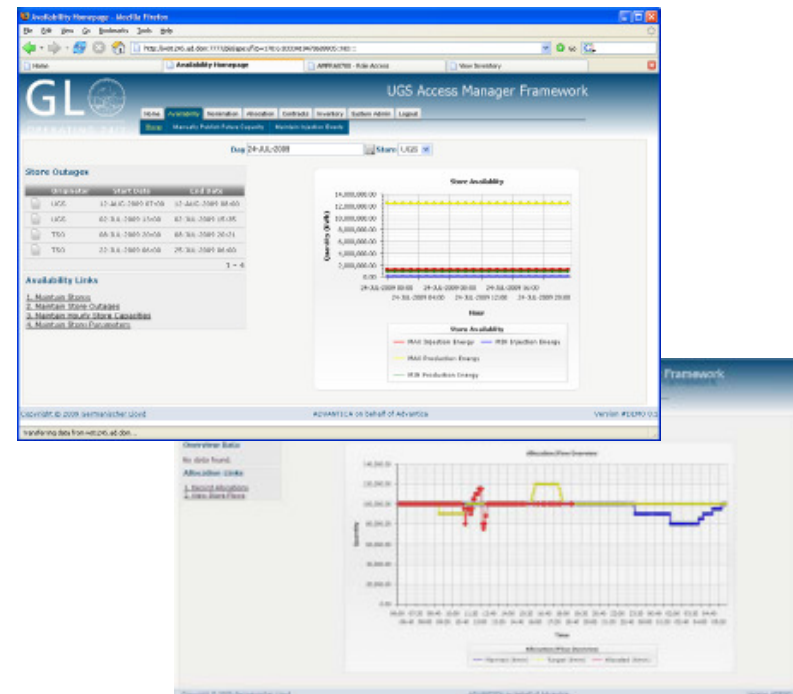


GMS Defined (UGS)



Benefits of GMS

- **Cost Savings**
 - Automation of the commercial processes
 - Optimising commercial team
 - Optimising the use of the facility
- **Regulatory Compliance & Audit**
 - TPA
 - GPPSSO
 - Third Package
- **Storage User Experience**
 - Access to dynamic information
 - Security of client data
 - Easy transactions
- **Competitive Advantage**
 - Flexible to changing market demands
 - Unique business rules



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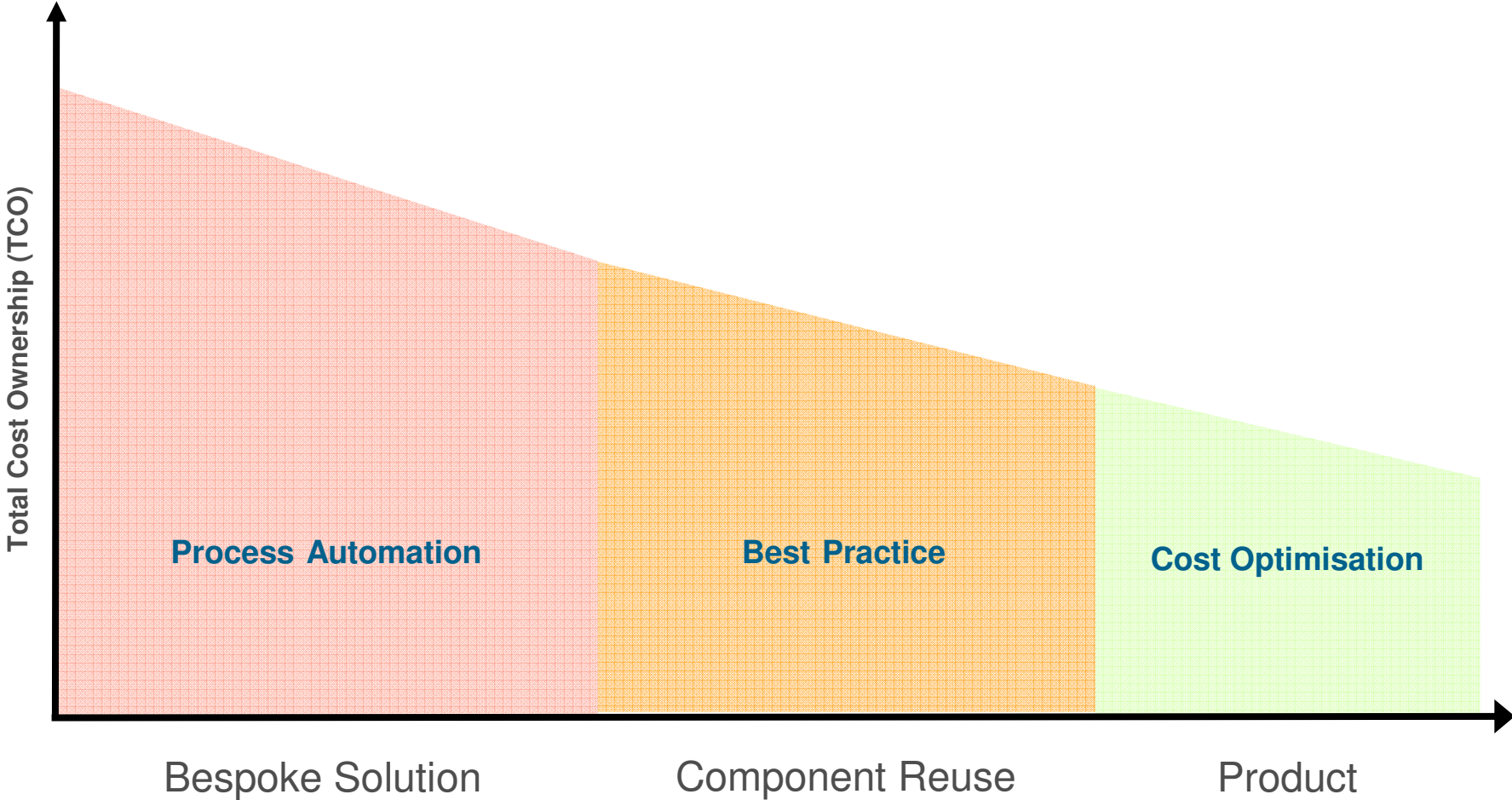
Why Innovate?

GL Noble Denton Market Review

- Global Economic Conditions
- Demand for UGS
- Liberalisation
- Competitive Advantage
- Flexibility
- Cost of Change?



GMS Evolution



GMS Market Solutions

- Conventional approach - 100% Bespoke
- Component Reuse + Custom
- No COTS on the market
- Innovation - Rules Engine



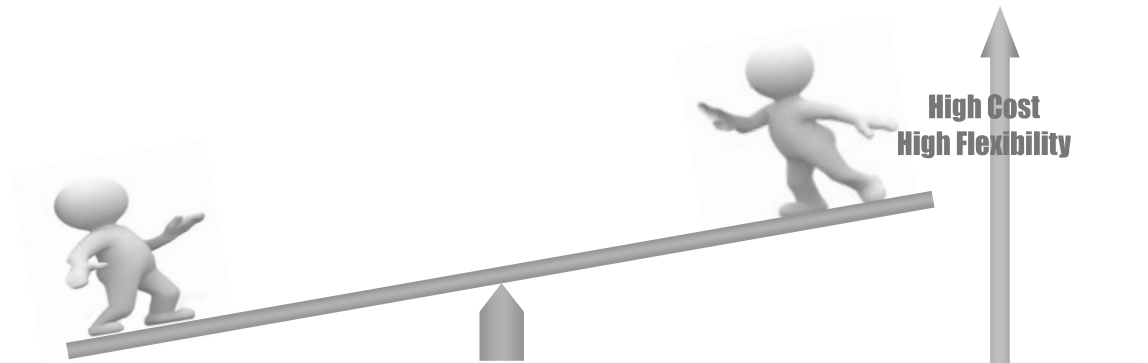
Bespoke Software

Pros

- Specific & unique
- Changes with business practices
- Flexible
- Easy to use
- Increases productivity
- Automating repetitive tasks
- Competitive advantage
- Business information is easier to understand

Cons

- Uniqueness cost more
- Source code exposure
- Failure to deliver on time



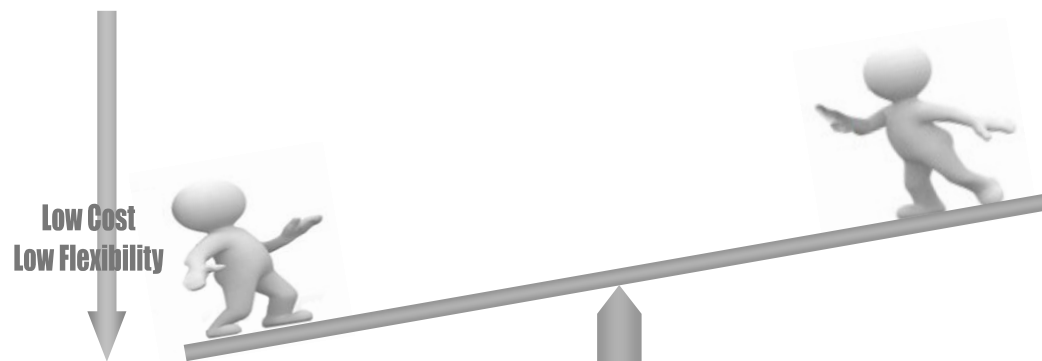
COTS (commercially off the shelf software)

Pros

- Cheaper
- Very sophisticated.
- Secure future Investment

Cons

- Competitors are on your level
- Fit 'your business' to the product
- Long time to learn
- Highly complex
- Under used features
- Compromise



GL Innovation (Rules Engine) = What Market Wants

Cost of COTS + Flexibility of Bespoke

- Lowest Total Cost of Ownership (TCO)
- Economic to deploy
- Client configurable
- Agile architecture to meet market change
- Incorporate industry best practices (ISM)
- Easy for user to Implement new business rules and process
- Deliver increased value through optimisation
- Be seen as the market leader



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Innovation ?

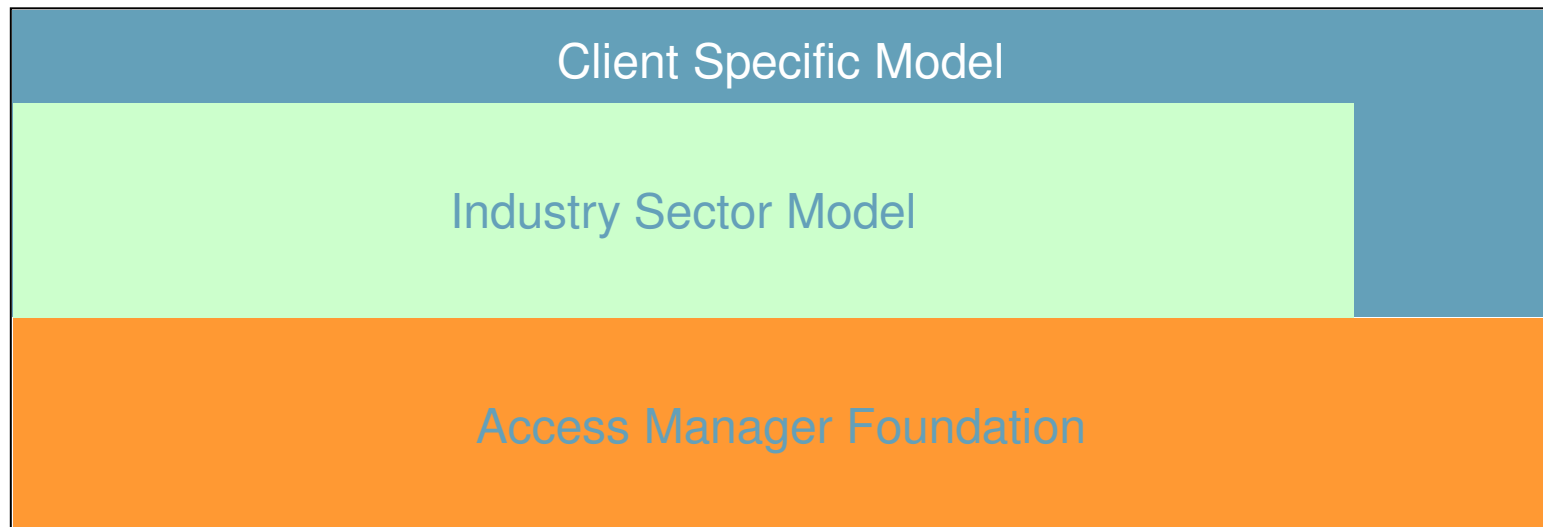
Rules Engine

- Software that executes business rules in a production environment
- Externalises Business Logic
- Rules can be constructed into a work/rule flow to drive a business process
- Business rules are not hard coded
- Industry Sector Language

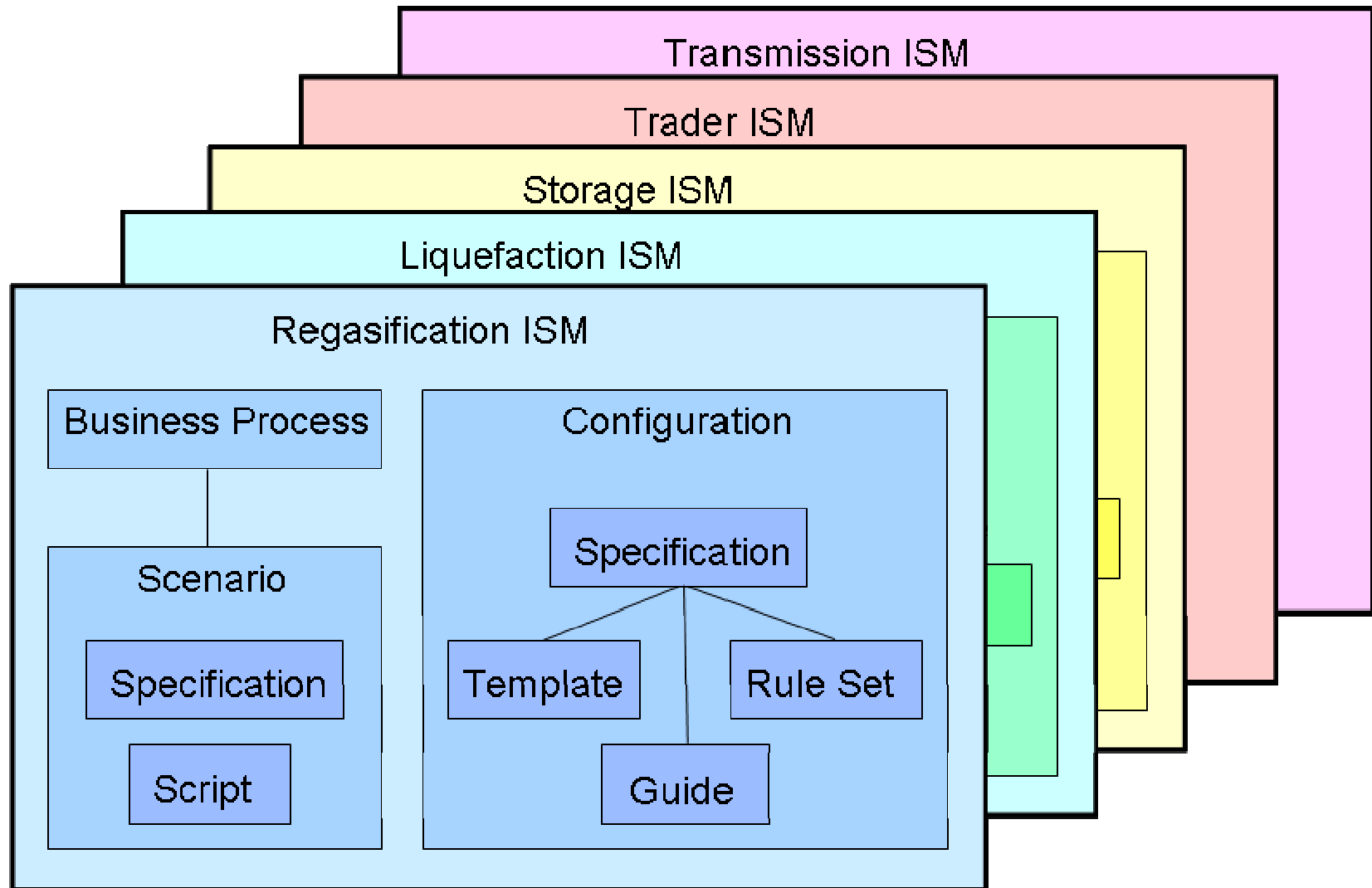


Building Blocks

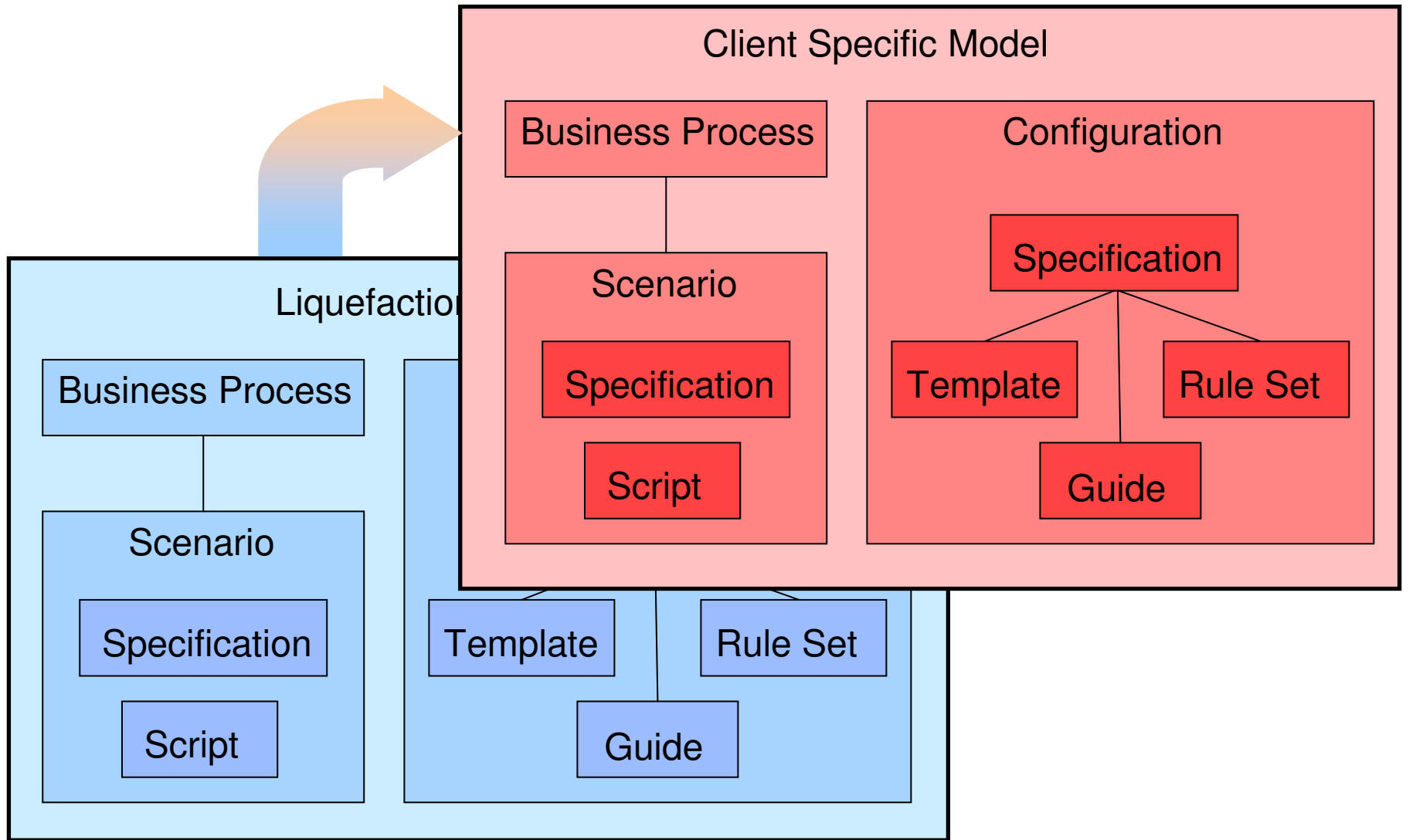
- Access Manager Foundation (AMF)
- Industry Sector Models (ISM)
- Client Specific Model (CSM)



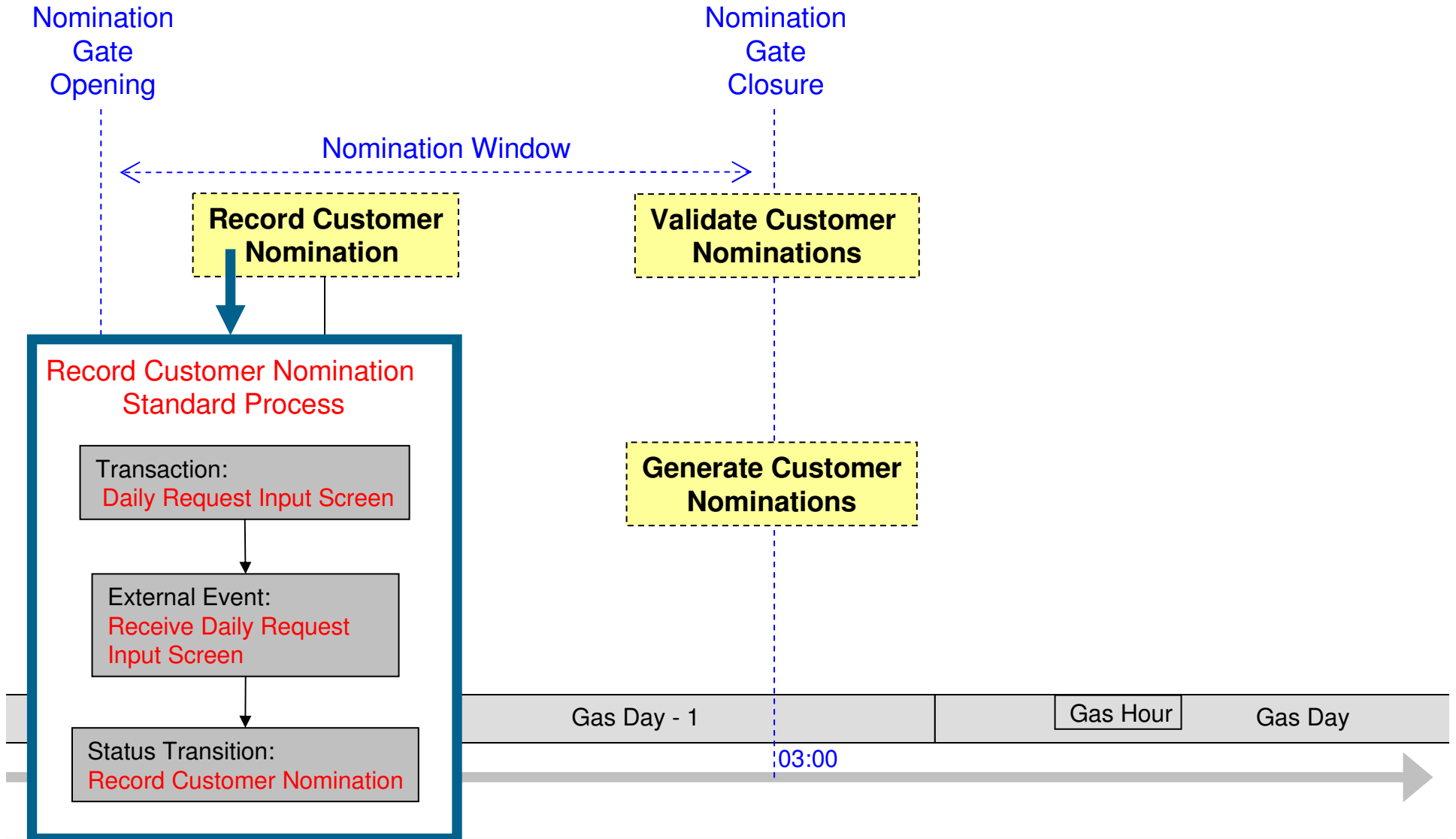
Industry Sector Model



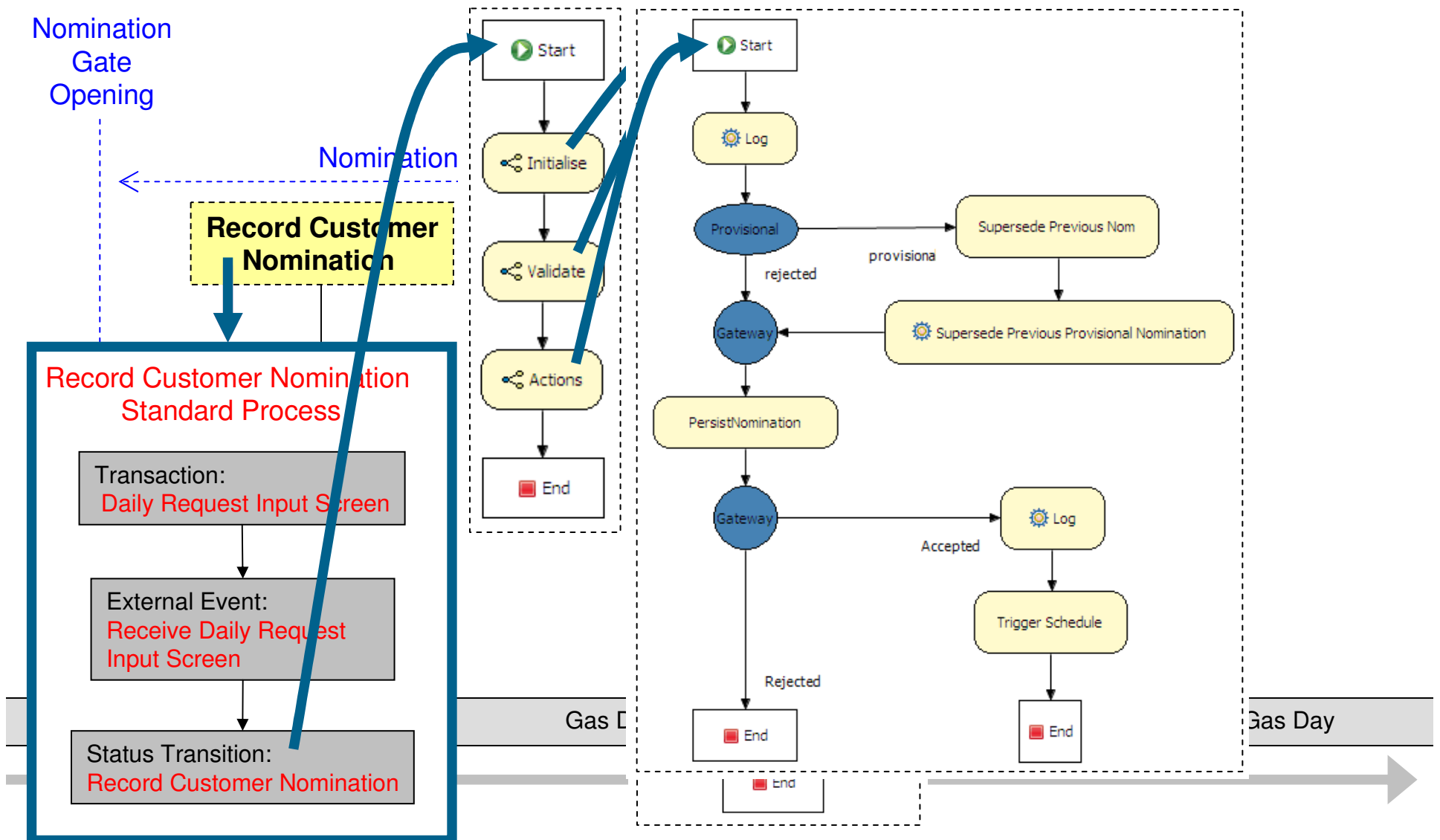
Client Specific Model



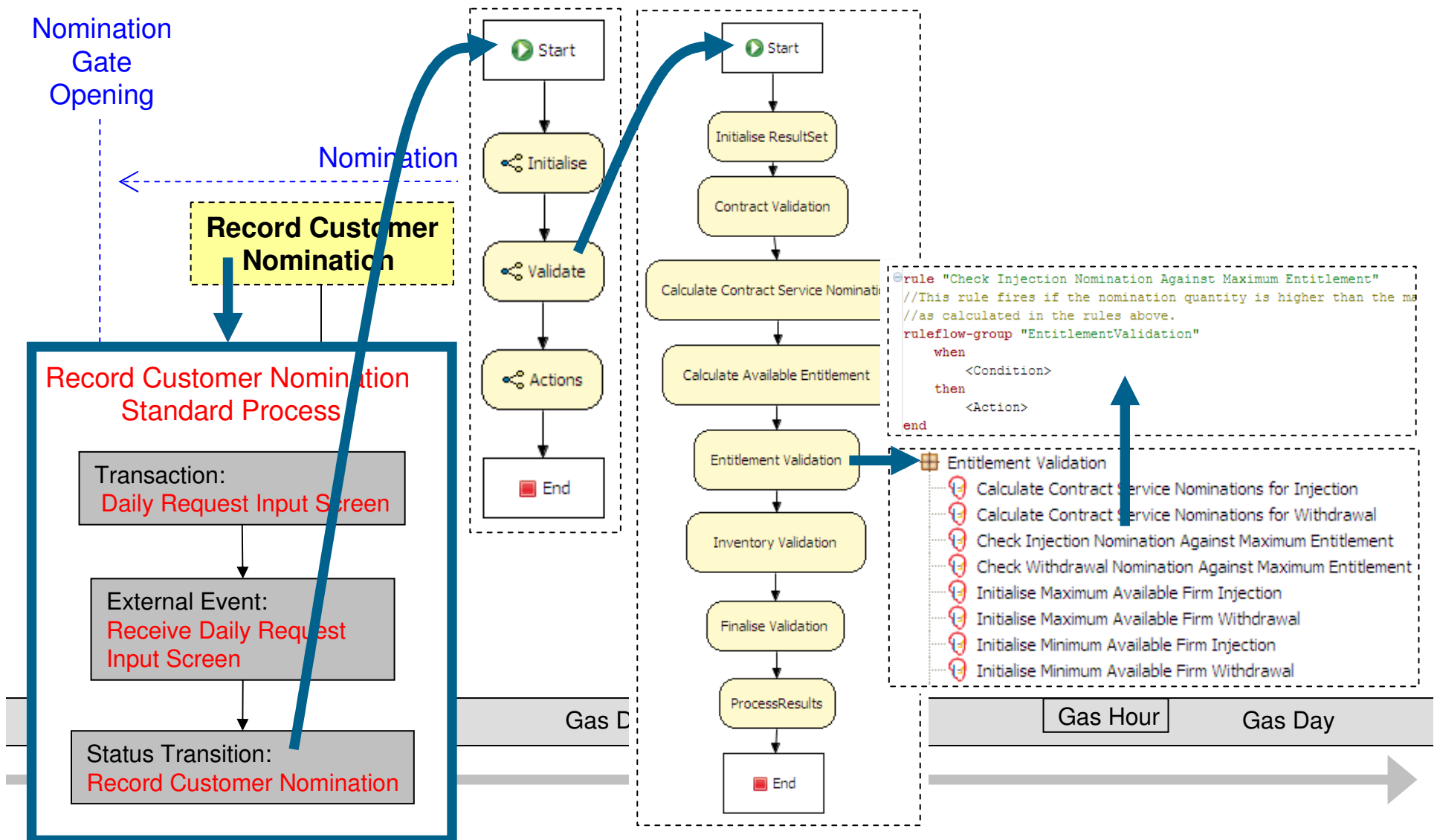
Rules Engine Example



Rules Engine Example



Rules Engine Example



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Summary

Summary of Benefits for a Rules Based Approach

- Lower TCO
- Faster Deployment
- Faster Product to Market
- Enhanced User Experience
- Agility & Flexibility
- True Competitive Advantage



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Thank you

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