



Denmark

Global Upstream Supply Initiative (GUSI)

A Case Study: NOVOZYMES A/S Denmark

by Doug Hill (GS1 Denmark), Juan Francisco Zurita Duque and Helle Skøtt (Novozymes A/S)

CASE STUDY INTRODUCTION

The following case study has been written as a result of the extraordinary success that has been recorded by a Danish based company in applying the GS1/GCI (Global commerce initiative) Global Upstream Supply Initiative (GUSI) standards.

This application of GUSI in a vendor driven environment clearly demonstrates the benefits that can be achieved when collaborating with GCI, GS1 and of course the users who adopt standards, in this case a leading Danish based producer of enzymes, microorganisms and biopharma products, Novozymes A/S.

The significance of this case study is to show that collaboratively developed standards, when applied in a vendor managed scenario, equate to improved financial, services, operations and administration processes that not only define best practice, but also present the implementing organisations the opportunity to create a competitive advantage.

NOVOZYMES: GS1 Member and GUSI adopter



Novozymes HQ, Denmark
(Source: Novozymes)

Novozymes is a world leader in bioinnovations whose products range from industrial enzymes to biopharma proteins. Novozymes' natural solutions enhance and promote everything from removing trans-fats in food, to advancing biofuels to power the world tomorrow. These are just a few of the ways in which Novozymes is already helping industries become environmentally viable and by delivering biological solutions to strengthen business today, Novozymes prepares them for the inevitable requirements of the future.

In 2007 Novozymes' products helped save the world around 20 million tons of CO2 emissions.

Novozymes key facts:

- Turnover in 2007 of 1.4 billion USD
- Over 700 products used in 130 countries
- Production facilities across 7 countries
- Employees world wide 5000
- Active in 25 industry sectors

(Source: Novozymes)

GS1 in the Novozymes supply chain

In having such a global operation Novozymes needs to implement truly global standards in its value chain in order to maximise their supply and logistics efficiency.

In realising these efficiencies Novozymes has, over the last 4 years, been extremely active in leading and adopting GUSI in a supplier driven model using the vendor managed inventory process (VMI).

KEY CONCEPTS

Upstream Integration

Upstream integration is all about improving operations by sharing information and improving visibility of demand through the harmonisation of processes and standards. To this end, GUSI standards support the most common business processes used by upstream suppliers and their trading partners. The harmonised application of processes, GS1 keys and GS1 XML messages, is a main reason why systems and processes driven by GUSI are optimised and are able to be implemented in a cost effective and timely manner.

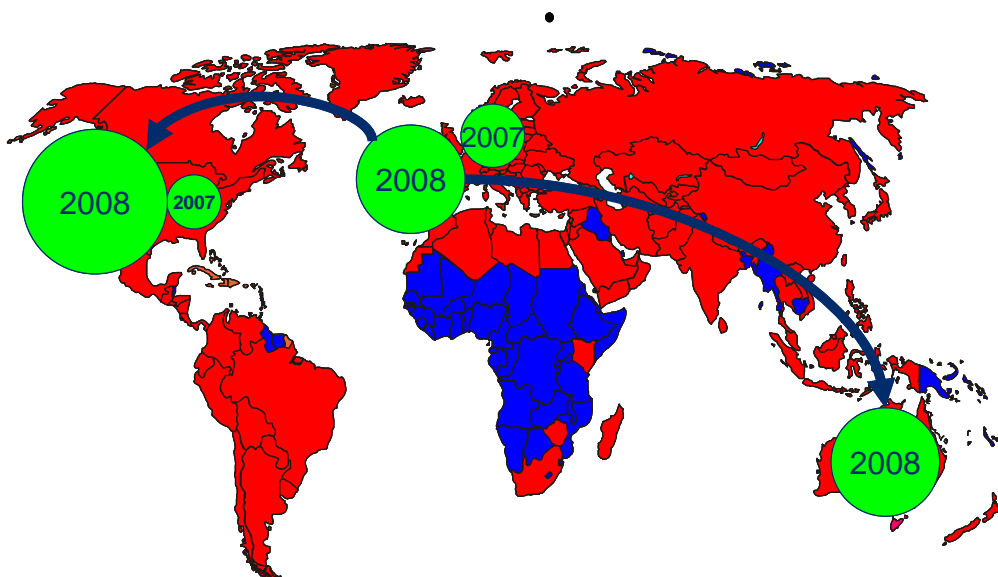
GUSI - The Global Upstream Supply Initiative

GUSI was launched by a group of companies in the Consumer Packaging Goods (CPG) interested in investing in the creation of a new business and technical standard targeted on the upstream sector of the supply chain.

During 2004 the Global Commerce Initiative (GCI) initiated a new working group which incorporated the active Global Upstream Supply Initiative. Since then GCI, together with the GUSI Working Group and GS1, have successfully designed an upstream process model and the supporting XML message standards for manufacturers of consumer product goods and suppliers of packaging, ingredients and raw materials.

The aim of the Upstream Intergration Model and the messaging standards is to provide tighter integration of supply chains without the need for costly and time-consuming customised IT integration projects with every partner.

The adoption of GUSI has risen dramatically since 2006 and GCI has reported 150 pairs of companies using the standard. Today, in 2008, this figure has risen to 3,000 pairs of implementing companies where there has been a veritable 'adoption explosion' across the North America, Europe and Australia.



GUSI spread and rate of adoption 2007-2008. (Source: GS1Global office)
(NB. Size of circle indicates approx number of trading pairs.)

NOVOZYMES RATIONALE FOR GUSI IN A VENDOR MANAGED INVENTORY SCENARIO (VMI)

Novozymes is a global organisation and appreciates that supply chains are becoming increasingly international in character. Acting in a global and complex business environment was proving to be constraint on their inter-company operational efficiency. To scale-up VMI adoption to more trading partners, whilst at the same time lowering costs and easing the adoption process, there was a need for standardisation.

Without these standardised prerequisites, Novozymes would have had to indulge in the substantial extra cost of custom solutions for each of their trading partners.

In 2004 Novozymes made a strategic decision to apply, support and invest in the GUSI concept in a VMI scenario. The driver for this decision was the quest to minimise inefficiencies in their downstream operations and leverage the benefits associated with the GUSI Upstream Integration Model.

Today, Novozymes successfully manages inventory and replenishment with their key customers which has resulted in a current replenishment volume of 15% of product sales using GUSI VMI. Novozymes goal is to have 30% of product sales replenished via GUSI VMI by 2010.

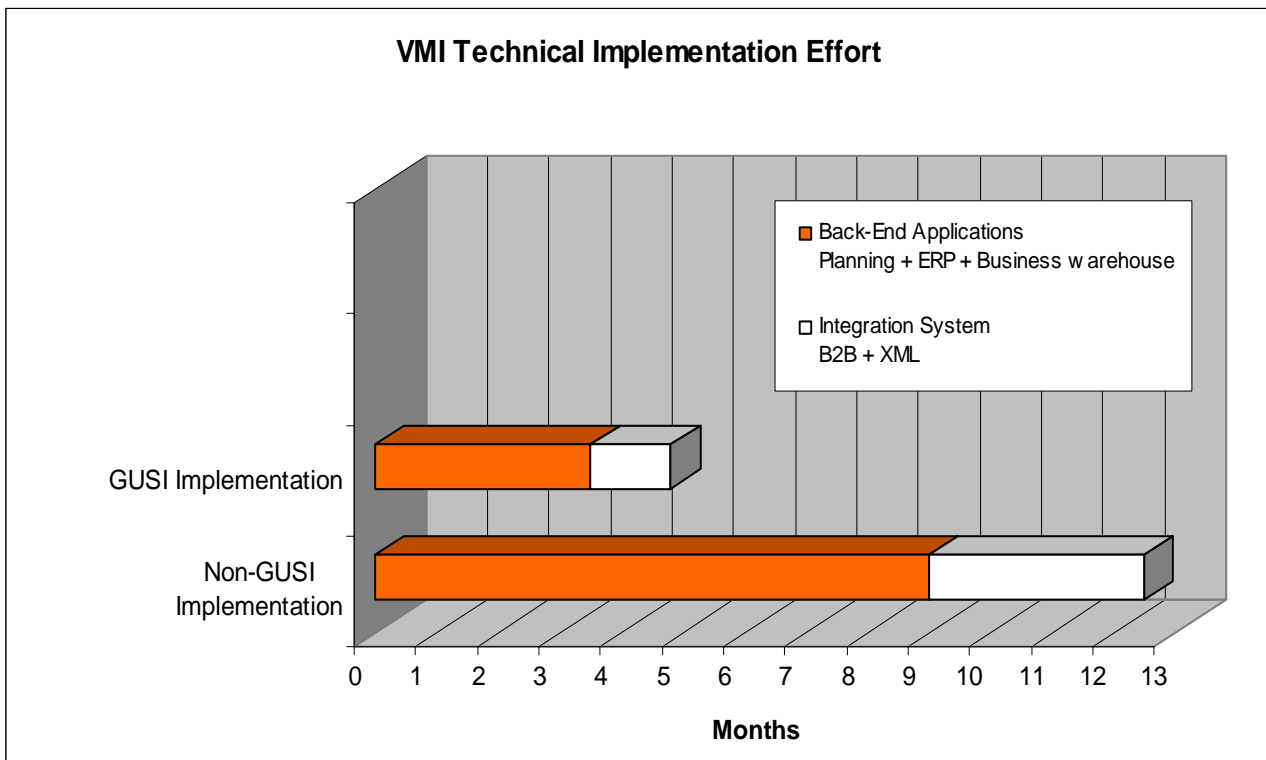
Novozymes rationale for adopting GCI/GS1 GUSI:

- Create a standard for both business processes and exchange of electronic messages to enable efficient scaling of the VMI process.
- Lower costs across the value chain and reduce implementation time.
- Support optimisation of supply chain processes within Consumer Packaged Goods.
- Reduce complexity/ease adoption of electronic messages and business process.
- Build and share experiences and increase supply and customer relationships.

GS1's contribution to the GUSI initiative

GS1 has made a significant contribution to the whole GUSI initiative. Specifically, GS1 XML standards and keys are used in GUSI in six different process areas: Integration Agreements, Data alignment, Purchasing conditions, Despatch, Receipt and Consumption and Financial settlement.

Area of GS1 Contribution	Benefit of contribution
GS1 supports the GUSI initiative by:	
Tailoring GUSI guides in a GS1 context.	Clear guides reduce ambiguity and speed up the implementation of processes and electronic messages.
Applying GS1 keys to GUSI: GLNs, GTINS, SSCC etc.	GS1 keys aid in unambiguously identifying locations, goods and services and logistic units. Keys also provide the framework for master data alignment.
Supporting the development of GS1 XML messages.	Provides a rigorous proofing of the GUSI requirements in GS1 XML messages through the GS1 Global Standards Management Process (GSMP).
Providing implementation assistance.	When required, local assistance in GUSI implementation is often found at national GS1 offices.



* Implementation = implementation project of a VMI solution with a partner without a running VMI process.

From the Novozymes implementation figures above, it can be clearly seen that there are substantial time saving benefits to be gained from implementing GUSI as opposed to customising solutions in a non-GUSI implementation.

Novozymes has continued to maintain high delivery performance whilst simultaneously reducing the amount of total inventory in the chain. For VMI to work efficiently, a close partnership is required between Novozymes and Novozymes' customers. As stock availability information is shared and made more readily available, uncertainty and risk in the supply chain is reduced. This leads to a minimization in unforeseen events, such as demand variability and makes it possible to use expected future demand as input to the master production plan. Additionally, the improved information flow allows Novozymes the flexibility to better plan deliveries to customers and enables the optimisation of transportation.

To successfully adopt the concept of VMI, companies must consider both the technical aspects as well as business processes. VMI can be implemented as a manual process, but without the support from a technical setup it will not be possible to gain the transactional benefits. GUSI VMI considers both and on top of this it standardises business processes as well as messaging exchanges. Without these prerequisites, VMI will not be scalable and the true benefits from an optimised supply chain are not achieved.

BENEFITS MATRIX

Area of benefit	Type of benefit	Novozymes benefit + some ++ good +++ excellent
Service		
▪ Product availability	Fewer stock outs at customer manufacturing plants	+
▪ Trading partner relationship	Improved customer relationship	+++
Operations		
▪ Truck fill rate	Optimisation through VMI management	++
▪ Production planning	Fewer changes to the production plan	+
▪ Trading partner integration set up	Quicker onboarding of new trading partners and related cost savings	+++
▪ Lead time	Reduced lead time	+
Administration		
▪ Forecasting accuracy	Reduction in the “bullwhip effect”	++
▪ Master data management	Improved pricing and accuracy of received goods	+
▪ Reduced rush orders	Increased visibility into future demand reduced transaction costs	+
▪ More efficient transactional message processing	Stability in, and timing of, message processing	++
Financial		
▪ Manage working capital	Improved cash flow (less finance tied up in stock)	++
▪ Holding costs	Reduction in inventory holding costs and warehouse management	++
▪ Capacity costs	Increased leveling, improved capacity utilisation	+

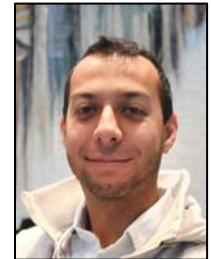
CONCLUSION

Key to releasing benefits:

GUSI Upstream integration model can be used in both traditional order management and supply driven VMI scenarios.

"A strong and mature standard business process implemented in our backend applications, complemented by a well built technical integration XML standard, has allowed for better support for our supply chain organisation and a faster, more flexible, roll-out of our solutions. "

Juan Francisco Zurita Duque. Team Lead for System Integration in Novozymes IT, October 2008



Novozymes' experience, supported by the GUSI Upstream integration model and the services from GS1, have resulted in a robust business case with high buy-in power for trading partners.

A holistic approach is required when adding value in the supply chain. When crafting a strategy to achieve this, components of advantage should be seen as a synergistic set of competencies rather than isolated components. Superior integration may give an organisation more operational efficiencies, but unless it is blended with improved processes, the best possible benefits may not be achieved. Whilst innovative product development is a key driver for Novozymes sustainable growth and profitability, logistical arrangements also make a significant contribution in adding value to Novozymes overall profitability.

By eliminating inefficiencies in the supply chain Novozymes logistics and supply chain management department is actively contributing to the current and future success of their organisation through the use of GS1 standards and GUSI harmonised processes.

GS1 Denmark gratefully acknowledge the co-operation with Novozymes and GS1 Global Office in creating this case study.

FOR FURTHER DETAILS CONTACT

GS1 Denmark

Doug Hill: GS1 Consultant: dsh@gs1.dk
www.gs1.dk

Novozymes A/S

VMI and GUSI implementation in the CPG industry.

Juan Francisco Zurita Duque: Team lead for system integration: JFJD@novozymes.com

Helle Skøtt, Manager: Responsible for supply chain integration projects: HSTT@novozymes.com
www.novozymes.com

GCI

GCI Governance and Working Groups & Global Upstream Supply Initiative

<http://www.gci-net.org/gci/content/e8/e77/>

GS1 Global Office

International GUSI enquiries

Regenald Kramer: Regenald.kramer@gs1.org
www.gs1.org



Novozymes research
(Source: Novozymes)



GS1 Denmark
Hammershusgade 17
DK – 2100 Copenhagen, Denmark
T +45 39 27 85 27
F +45 39 27 85 10
info@gs1.dk
www.gs1.dk