

# SMART

## The UBL Adoption

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# About SMART

- SMART is an ERP system with POS clients
- Established in 2004 by Electra to supply its Audio Video stores with a competitive business system
- Electra was at the time, the one and only supplier of products

The logo for Electra, featuring the word "Electra" in a white, cursive font on a green background.The logo for SMART, featuring the word "SMART" in a white, sans-serif font on a dark grey background.

# About SMART



- 10 Chains
- 350 Companies
- 600 Stores
- 1200 POS Clients
- 8000 Users

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# About Me

- My name is Johan Slottner
- Worked with SMART past 5 years
- Architect and Developer
- Reach out using [johan.slottner@electra.se](mailto:johan.slottner@electra.se) or LinkedIn

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# The initial setup

Catalogues,  
Orders,  
Invoices,  
Despatch advices



... Or honestly...



# The *actual* initial setup



# More suppliers

- Soon, Audio Video needed to add more suppliers than Electra only
- Plenty of suppliers wanted to integrate with SMART
- And of course we managed to do this





# More suppliers



One format!



# SMART evolved quickly (and it still does!)

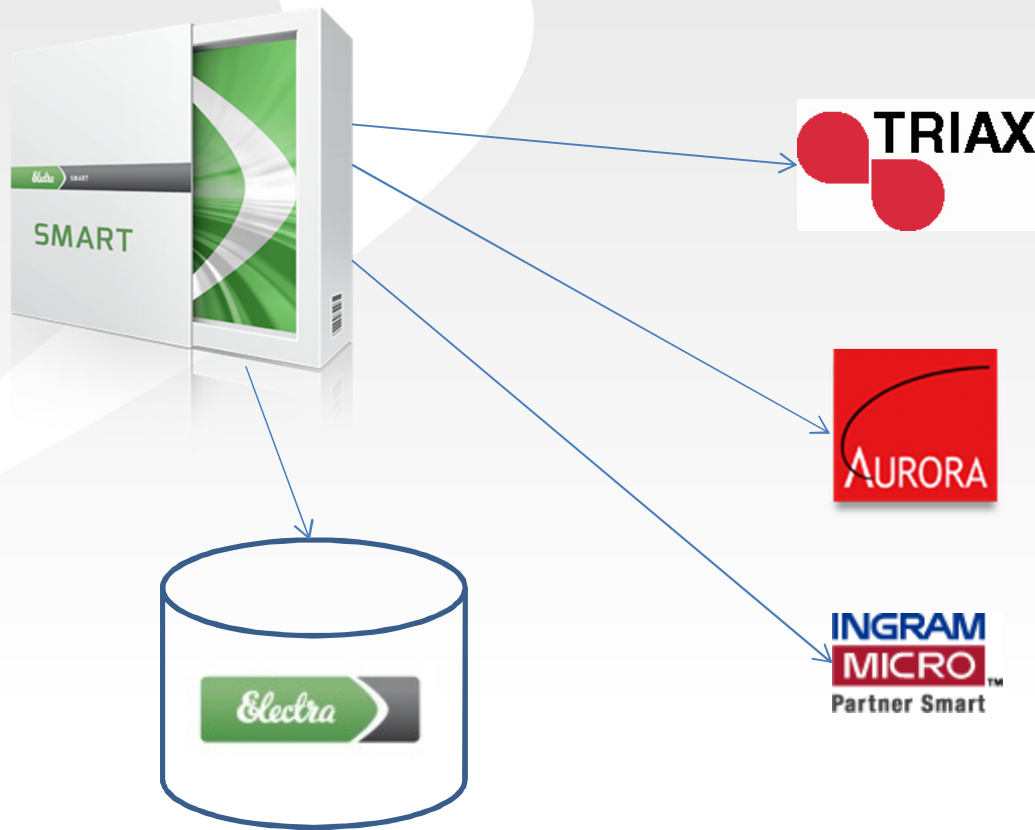


# The SMART evolution

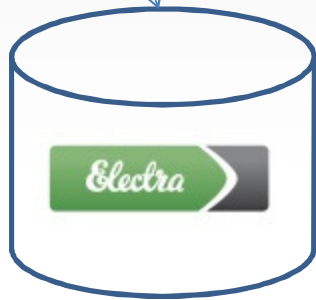
- New features were added to SMART
- Some of these features added great value when integrating with our partners
- Some of our partners updated their systems to support the newly added features
- Others did not

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# Suppliers, now with different formats



# Then, more suppliers were connected



# Let's do something better

Maybe we should suggest a "standard", invented by SMART, that everyone have to comply to in order to be a supplier in SMART!

... Yeah right...

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# Let's do something even better

Maybe someone in the universe actually have faced the very same problems we are currently facing.

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# UBL

- We found two established standards that both should fit our needs, now and beyond
  - GS1
  - UBL
- We had previous knowledge of SveFaktura, based on UBL Invoice 1.0
- UBL not only defines e-documents, it also defines and provides support for business processes

# SMART UBL-ified

- We began to rewrite the procurement elements of SMART to be fully based on UBL instead of our internal formats.
- We assumed that we cannot ask our partners to all adopt UBL



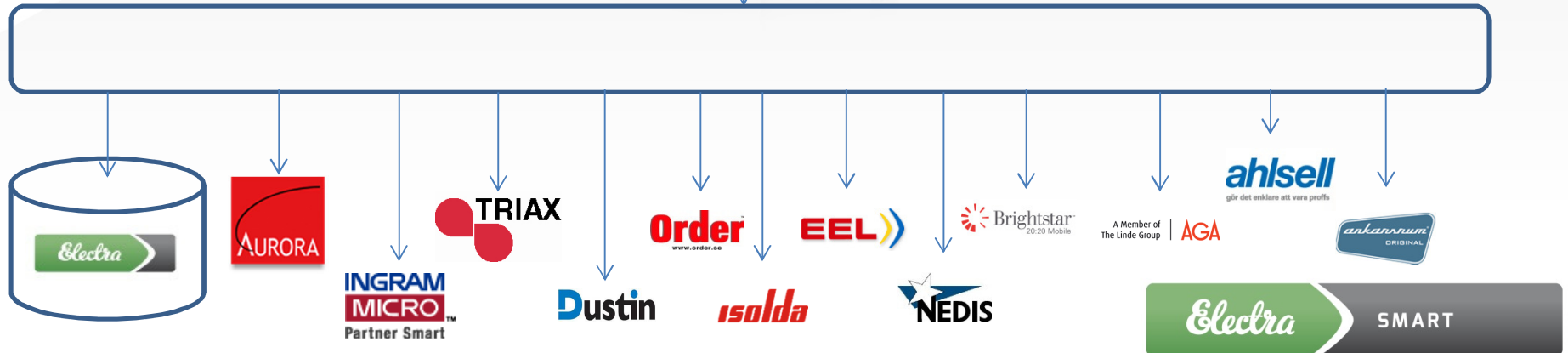
# Loosely coupled adapters

- Handles the conversion between UBL and the partners' proprietary formats
- Independent of the SMART evolvement
  - New partners can be added at any time, UBL or not
  - Existing partners can adjust their interfaces without the need to update SMART itself

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# SMART UBL-ified



# UBL Metrics Today

- 100+ suppliers providing electronic catalogues
- 400 000+ products from electronic catalogues
- 16 000 order lines per month through electronic orders
- 7 000 electronic invoices per month

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# Additional usage areas

- UBL 2.1 has provided us with a number of new reports that we have implemented
  - Inventory Report
  - Product Activity Report
- UBL components also helped us to produce specific SMART reports in an UBL familiar way

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# Future Directions

- Application Response
  - Should be used to return a structured error message to the sender of the UBL message
- Shipment Messages
  - Shipment will be more apparent in future SMART versions, and a lots of UBL messages will be have to be supported

# Future Directions

- Supplier Portal
  - Document validation
  - Process configuration
  - Scheduling
  - Reporting subscription

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# Partners' Reactions

- To new partners, we always introduce the benefits of using a standardised procurement process and the concept of UBL
- We do not need to go into discussions on which proprietary format should be used
- Two options:
  - Adopt UBL
  - We will handle the conversion of the partner's proprietary format to and from UBL
- About half of the new partners adopted the concept of UBL completely
- The other half have been very interested in what we had to say

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# The Insight made

- We have addressed the problem of electronic communication in the procurement process
- We came from an proprietary format and we are now using a universal standard
- Our partners all are facing the very same problem
- Our partners are still using proprietary formats
- The experts are probably better to propose a standard for all of us

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# Advantages

- Everything is documented
- Great interest shown from our partners
- Easier partner negotiations
- "We are using a universal standard, you are not"
- It is easy to argue for not introducing special arrangements
  - "smarter people than we do not think it is necessary"

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# Advantages

- The partners think that we are wizards 😊
- We can choose to include more optional information in the documents as SMART evolves
  - Without having to include all our partners in the process
  - As long as we stay compliant with UBL
- SMART offers an extension and growth path - UBL supports us when our business expands

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# Challenges

- There are parts of the standard that are unambiguous.
  - Code lists does not always exists. There should be at least one recommended code list.
  - It is unclear in what context a status resides in order messages
  - Commodity classification, cannot define a hierarchy
- Insufficient documentation has given us
  - Unnecessary discussions
  - Different implementations (solved by adapters)
- More extensive documentation and more examples should probably address these issues

# Facing the Reality

- Not all partners are sufficiently IT mature
- The order process defined is pretty complex
  - Dealing with order changes and cancellation from both ends are still pretty challenging

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# Facing the Reality

- To reduce the time to complete the integration, SMART does not require the whole process to be implemented
  - The simplest approach is to skip the Order Change and Order Response messages
  - Another approach is to automatically accept any changes in the Order Response message
  - Any deviations are handled manually

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# Summary

- The SMART procurement process is significantly streamlined and simplified using UBL
- UBL offers a flexible approach to evolve SMART
- Using UBL results in a simplified negotiation process with new and existing partners
- Partners that are actually listening to us

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Thank you!

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# Creating the appropriate Application Architecture

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# Key Success Factors for Adopting UBL

- LOB Service
- Service Bus
- Adapter plug-in Architecture
- Adaptive Process Support
- Extension of Schemas

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# LOB Service

- All communication through one single end-point
- Message contracts in UBL only, but supports several UBL versions
- Supports Document Validation
- Implements support for the UBL processes
- Security – runs as an IIS hosted WCF service
- Scalability

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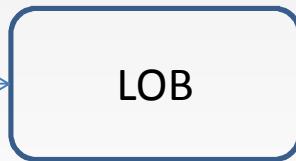
# Service Bus

- Asynchronous Communication
  - No direct communication wanted because of potential system down time at both ends
  - Allows for Advanced Scheduling
- Routing information where it belongs
- Publish subscribe patterns
- Retry count and error handling

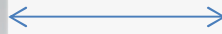
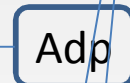
# Adapter plug-in Architecture

- Base adapters with common capabilities
  - Ready-to-use adapters
  - Overrideable for customization
  - Reuse of service bus adapters for pass-through of UBL documents
- Custom service bus adapters for mapping proprietary formats to/from UBL

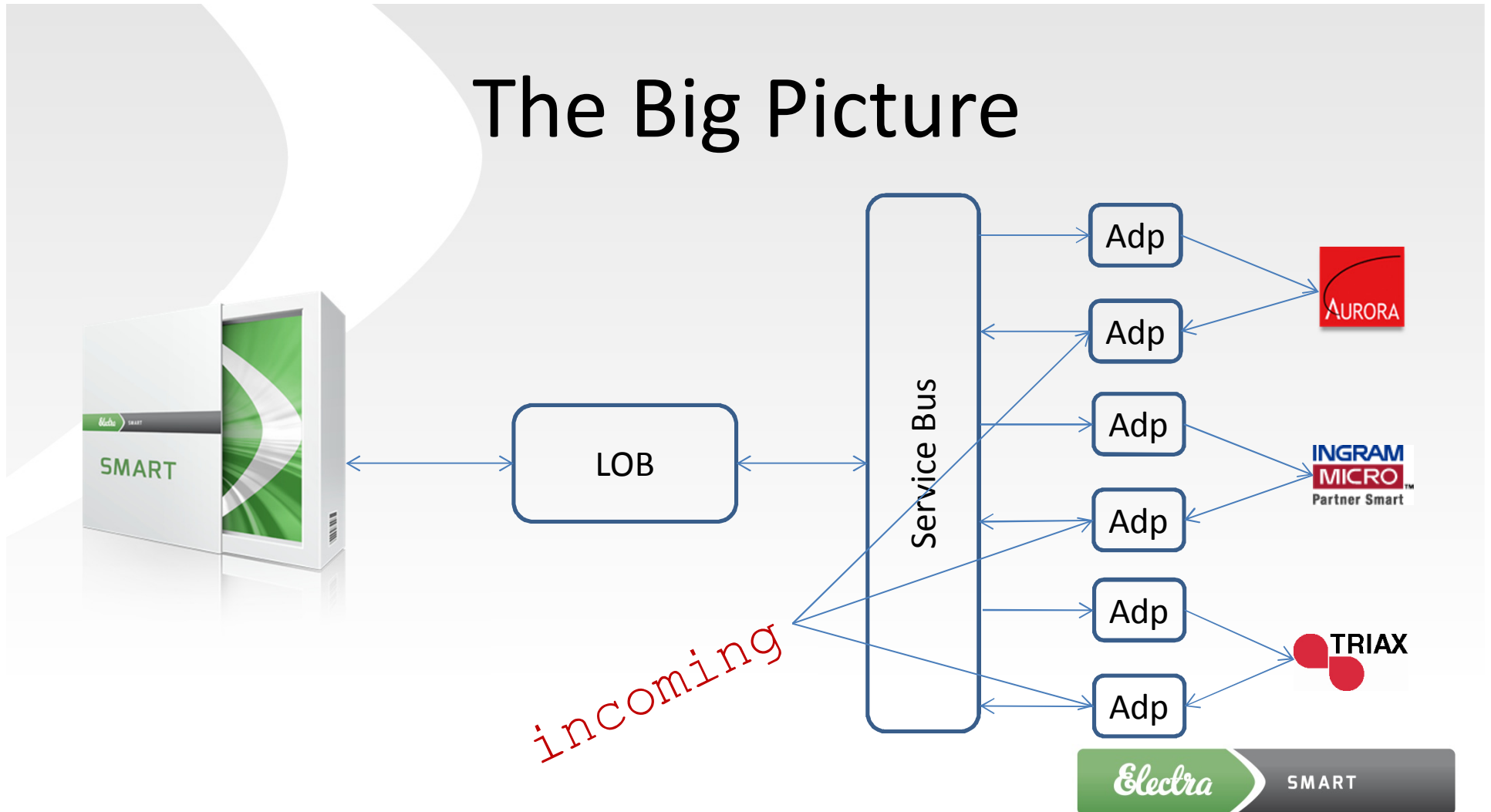
# The Big Picture



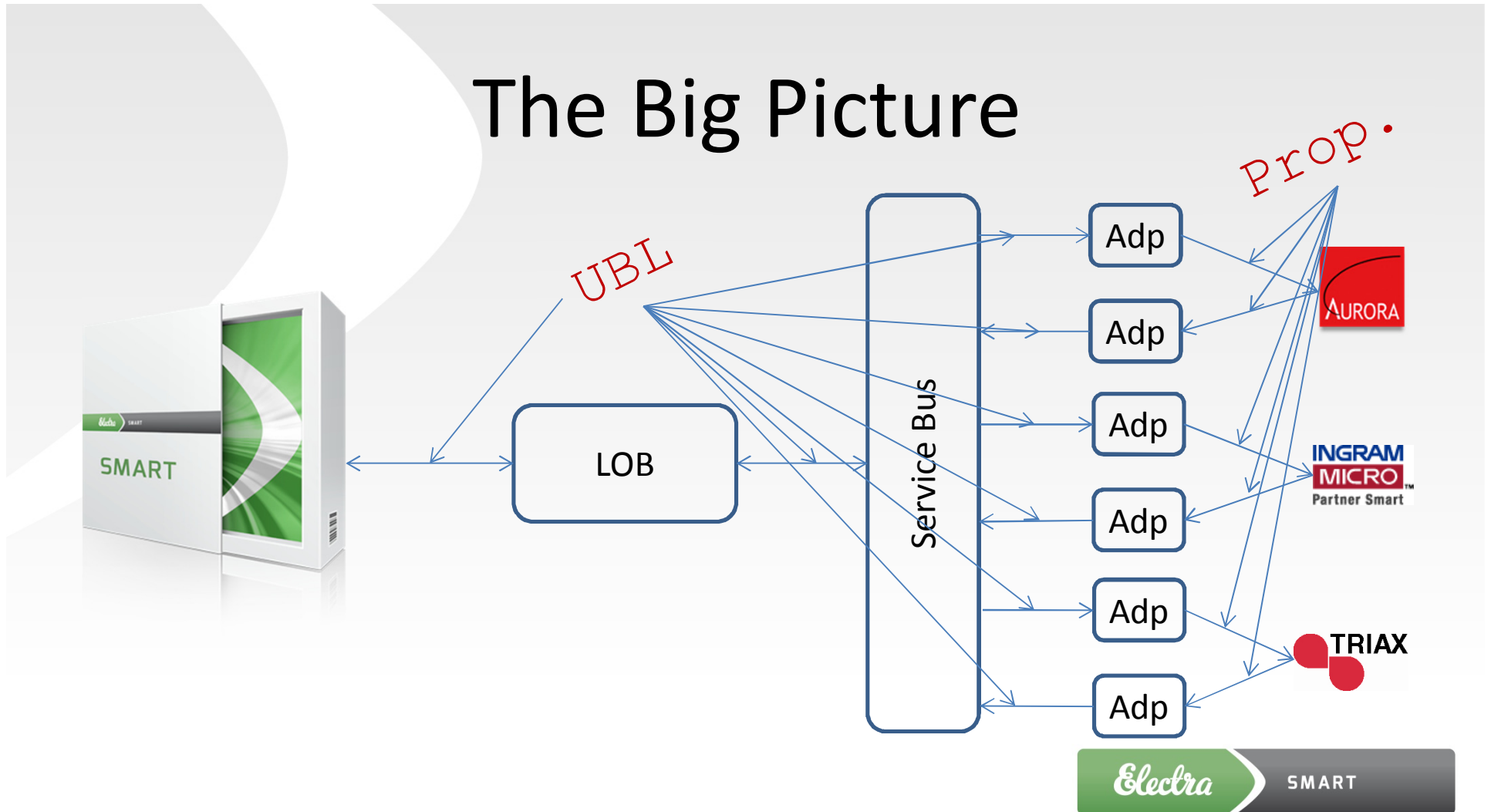
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# The Big Picture



# The Big Picture



# Adaptive Process Support

- Some parties might have only partial support for the UBL processes
- This must be handled & supported, and we're using
  - Adapter
  - LOB service
  - Configuration needed

# Extension of Schemas

- Some parts are missing e.g. commodity classification structure
- Extensions are defined as local namespaced schemas (available as "SBL-Smart Business Language" documents) based on common UBL entities

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# How UBL helped SMART become a better solution

- Ready-to-use Processes
- Established universal standard
- Extensible
- Works well with adapter based solution architectures
- Simplifies test and quality assurance
- Enables fast-track integration of new parties (new suppliers are on-boarded in 40 hrs)



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