De Nederlandsche Bank
Enterprise Architecture:
Collaboration of Business and ICT

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Enterprise Architect

Disclaimer:
Entire presentation in private capacity
Chinese walls between ICT and Banking Supervision
Agenda

- About DNB
- Theory:
  - Architecture Approach
- Practice:
  - Examples from Monetary Policy and Payments
- Summary
About DNB – the Dutch Central Bank

- **Financial stability** rests on four pillars: price stability, secure and smooth payments systems, alert supervision and objective economic advice, research and statistics.

- **Payments**: €100 billion passes through DNB’s books and systems every day:
  - (International) interbank payments
  - Sale and purchase of securities
  - Transactions in DNB’s foreign exchange reserves

- **Banknotes**: life-cycle of a genuine and clean banknote:
  - Banknotes have an average lifespan of 3.5 years
  - 1 billion banknotes are checked every year
  - 100 million banknotes are shredded annually

- **Supervisory**: Netherlands financially in top 10 world ranking:
  - ±650 pension funds
  - ±335 insurance companies
  - ±100 banks

- **Reliable statistics**, authoritative knowledge and standpoints based on own research. Vital for carrying out of core tasks and as economic advisor to the government.

- **Dutch reserves**: managing gold and foreign exchange reserves and part of the European Central Bank (ECB) reserves.

- **Organisation**: ±1.800 fte, 12 divisions and 1 office located in Amsterdam
Theory:
DNB Architecture Approach

- Architecture Policy
- Architecture Criteria
- Architecture Driven Delivery
- Status
DNB Architecture Policy

To accomplish the mission and objectives in a strategic way, 13 policy rules have been formulated for ‘Architecture Driven Delivery”. Six of these policy roles:

1. The Business is the owner of and has ultimate responsibility for the enterprise architecture (business, application & technology).
2. Architecture descriptions are created on request by the Business.
3. Architecture descriptions are created in case of significant changes impacting information services and systems.
4. The architecture function is the exclusive partner for the Business with regard to enterprise architecture activities.
5. ArchiMate is used for structuring architecture descriptions and producing architecture diagrams.
6. The DNB Architecture functions uses the TOGAF method as their guidance and reference.
The Architecture Criteria are the mandatory baseline for advise and approval by the Architecture function. The criteria is a set of architecture statements and artefacts containing:

- **Principles** – Why do we do what we do?
- **Policies** – How do we do what we do?
- **Standards** – What we should be (re-)using?

Requirements are the basis for the specifications of applications. These applications must be compliant with the architecture criteria.
Architecture Criteria – Principles

- Domain
- Information
- Alignment
- Specific
- Generic
- Integration
- Re-use
- Off-the-shelf
- SLA
- Stability
- Current
Architecture Driven Delivery

- Current State
- Business Strategy, Business Principles and Focus Points
- Future State
- Project Portfolio
- Project Start Architectures
- Architecture Approval
Architecture Descriptions – Scope

Layers, aspects en subjects
Collaboration of MT’s, Architecture and Project Portfolio Management

- Strategy DNB and domains
- Organisational developments
- ICT- and market developments

Information strategy

Architecture and vision

- Development direction
- Frameworks / principles

Current State Architecture

Project portfolio

Consequences for organisation, people and resources

Future State Architecture

Project portfolio management
### Project Portfolio Planning

<table>
<thead>
<tr>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>Q2</td>
<td>Q1</td>
<td>Q2</td>
</tr>
<tr>
<td>Q3</td>
<td>Q4</td>
<td>Q3</td>
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</tr>
<tr>
<td>Q1</td>
<td>Q2</td>
<td>Q1</td>
<td>Q2</td>
</tr>
</tbody>
</table>

- **Onderpand beheer**
- **Relatiegegevens**
- **Beleid en Onderzoek**
Development Project Support Process

Project Management (Prince 2)
- Startup & Initiation
- Controlling & Managing
- Closing

Software Development Life Cycle
- Inception
  - Select Solution Scenario
  - High Level Specs & Design
- Elaboration
  - High Level Specs & Design
  - Detailed Level Specs & Design
- Construction
  - Detailed Spec & Design
  - Construction
- Transition
  - Acceptance & Go-Live

Architecture Governance
- Determine Architectural Impact
- Advise PSA
- Approve Offer
- Architecture Approval
- Architecture Approval
- Architecture Approval

Decision Point
- Obligatory Architecture Check
- Optional Architecture Check
- Make Offer
- Make Project Initiation Document
- Make Project Start Architecture
- Project Start Architecture

Architecture Analysis
Project Start Architecture

- Provides context and direction of the project solution, not the high level or detailed solution design
- Describes what the project will realise, based on Future State Architecture (FSA)
- Choices and agreements steered by the Architecture Criteria
- Specifies the new Current State Architecture (CSA) as it will be delivered by the project
## DNB Architecture Status

<table>
<thead>
<tr>
<th>Business Domain</th>
<th>Current State</th>
<th>Business Principles</th>
<th>Domain Focus</th>
<th>Future State</th>
<th>Project Portfolio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Payments</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>2010</td>
</tr>
<tr>
<td>Supervision</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>80%</td>
<td>2012</td>
</tr>
<tr>
<td>Statistics</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>2011</td>
</tr>
<tr>
<td>Information</td>
<td>✓</td>
<td>✓</td>
<td>HPW</td>
<td>DNB</td>
<td>2011</td>
</tr>
<tr>
<td>Corporate Support</td>
<td>60%</td>
<td>60%</td>
<td>Finance</td>
<td>PSA</td>
<td>2010</td>
</tr>
<tr>
<td>IT</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>PSA</td>
<td>2011</td>
</tr>
</tbody>
</table>
Practice:
Examples from Monetary Policy and Payments

• Current State Domain Architectures
• Business Strategy, Focus Points and Business Principles
• Future State Domain Architectures
• Project Portfolio
• Project Start Architecture
During presentation, example diagrams will be discussed!
During presentation example diagrams will be discussed!
Monetary Policy and Payments
Process Support by Applications

During presentation example diagrams will be discussed!
Monetary Policy and Payments
Execution, applications

During presentation example diagrams will be discussed!
Monetary Policy and Payments

Selection of Business Principles

1. Our critical processes are secure and reliable.
2. Within the required security and reliability we are customer oriented and we execute our processes efficiently.
3. Our actions are European oriented and where possible globally oriented.
4. We manage and monitor all types of risks, over the complete process chains.
5. We comply with and contribute to relevant laws and rules.
6. We follow and contribute to best practices.
7. Our processes are organised as links in an optimal process chain.
## Monetary Policy and Payments

### Business Principle

<table>
<thead>
<tr>
<th>Name</th>
<th>European, where possible global.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statement</td>
<td>Our actions are European oriented and where possible globally oriented</td>
</tr>
</tbody>
</table>
| Rationale | Our operations are European oriented, and where possible globally oriented.  
Rationale:  
- DNB is a strong NCB in the Eurosystem  
- DNB has to adapt its supervision to the development that banks, clearing houses, securities settlement institutions, payment products, payment processes and securities settlement processes become European and/or global.  
- In Eurosystem collaborations DNB directs the focus to the European dimension. |
| Implications |  
- Be prepared to adapt our domestic organisation and processes  
- Participation in centralised Eurosystem processes and systems  
- Collaboration with other Central Banks and overseers  
- The organisation of our own processes should not be an obstacle for European solutions. |
| References | Strategiedocument voor Divisie Betalingsverkeer versie 30 maart 2009  
One-pager FM 2010-2014  
Strategie mindmap Betalingsverkeer 14 mei 2009  
Verslag workshop dd 20 mei 2009 |
Monetary Policy and Payments
Strategic Goals Selection and Focus Points

Strong Eurosystem Central Bank:
• Centre of Expertise

Secure, Reliable and Efficient Payments Processing:
• Support of SEPA Migration
• Cooperative Oversight
• Controlling the Consequences of Cybercrime
• Cash Handling Supervision

Operational Excellence:
• Streamlined Process Chains

Focus Points:
✓ Investment Management
✓ Cash
✓ Research and Policy Preparation
• Collateral
✓ Relations Management
High Level Future State Architecture
Focus Point Research and Policy Preparation

During presentation example diagrams will be discussed!
Detailed Future State Architecture
Focus Point Research and Policy Preparation

During presentation example diagrams will be discussed!
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Project Start Architecture
Faster Deposit Insurance Pay Out

• Outside Information Plan:
  Not Part of Focus Point
• Faster* Pay Out to Bank Customers
• Automated as Much as Possible
• Faster and Simpler Manual Processes

*‘EU Directive 2009/14/EC’
Starting Point of Process Management

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Summary

• **Collaboration of MT’s, Architecture and Project Portfolio Management:**
  – Architecture Approach
  – Information Strategy and Project Portfolio Management

• **Collaboration of Architecture and Process Management:**
  – Project Start Architecture and
  – Business Process Design
Learning by doing!

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