Nordea IT
Technology Strategy – Principles

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Document Control Information

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History changes

Version	Description	Responsible	Approved by
1.5.	7th principles regulatory compliancy introduced	Sakari Palko	Esa Marttila Tapio Kirjonen
1.4	Changing Yellow Phase 4 life - cycle phase colour to Amber	Sakari Palko	Esa Marttila Tapio Kirjonen Rasmus Strømsted
1.1 (0 4) / 2012-07-02	Update	Esa Marttila	Group IT and reviewed by key ITAG heads
1.0 / 2011-01-24	Update	Michael Steffensen, Esa Marttila	Group IT / Architecture

0.1 / 2010-04-01	First draft version (copied/adopted/extracted from the Technology Strategy document)	Juha Vaarama	

Related documents

No	Version	Title
1	1.0 / 2011-01-24	2011-01-24 Technology Strategy – Preferred IT Solutions and Technologies
2	1.1 / 2012-01-31	2011-01-24 Technology Strategy – Preferred IT Solutions and Technologies
3	1.4 / 2014-11-14	2014-11-14 Technology Strategy IT solutions and Technology Standard v1.4
4	1.6 / 2015-02-16	2016-02-16 Technology Strategy IT solutions and Technology Standard v1.6

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1 Introduction

Nordea is using a large variety of technologies to automate and support business processes, and these technologies have different life cycle. The purpose with the Technology Strategy is to provide direction for IT regarding technology choices, in order to support the business with required IT services, demand and supply optimization, and at the same time keep cost and complexity under control.

The term 'Technology' in the Technology Strategy is used in a broad sense. It addresses tools, systems, platforms, solutions and related implementation processes in Nordea supporting production, manipulation, storing, communication and distribution of information, all of which is essential for Nordea in providing IT services to the business.

The Technology Strategy consists of the following documents:

- *Technology Strategy - Principles (this document)*
- *Technology Strategy - IT Solutions and Technologies Standard*
- *Separate Technology strategy documents (technology area specific strategies)*

While the principles and the IT solutions and Technology standard constitute the foundation and the direction for the use of technology in Nordea, the concrete IT standards and separate technology specific strategies represent a more detailed set of requirements to specific technical solutions or processes. In addition there can be contract schedule documents that address the technology NOT operated by Nordea, e.g. vendors such as IBM.

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in RFC2119.

The *Technology Strategy - Principles* presents seven principles, with the intention of driving behaviour and establishing the desired mindset among IT personnel when choosing technology. The principles do thus provide the definition of 'right technology' in Nordea context:

1. *All IT initiatives MUST aim at fulfilling business needs,*
2. *Ownership MUST be clearly defined for all IT solutions,*
3. *Reduce complexity and cost through standardization and simplification,*
4. *Lifecycle of components SHALL be continuously managed; new technologies actively adapted and non-current technologies retired,*
5. *Reuse before buy, buy before build*
6. *Execution capability MUST be ensured throughout the solution life cycle*
7. *Ensure regulatory compliancy*

The target audience of this document is Business Chief Information Officers, IT Architects and Project Managers. The focus of the strategy is on future development, not rectifying existing solutions.

The Technology Strategy is owned and maintained by IT Strategy Architecture and Methodology in Group IT. Strategy is developed in close cooperation with the IT Solution Divisions' Business IT Architects.

Nordea Architecture Board (NAB) decides the strategy preference for technologies, and deployment into operative use requires Group ITAG approval (or depending on investment size, IT Forum approval).

2 Technology Strategy Principles

To fulfil Nordea's business needs and expectations IT is utilising a large variety of technologies. The choice of technology to implement required business functionality is essential and has impact on the operations, cost, security and complexity level of the bank. The Technology Strategy presents seven general principles disconnected from the actual technologies to be applied when choosing technology. The principles are similar to values; their intention is to drive behaviour and establish desired mindset among IT personnel.

(1) All IT initiatives MUST aim at fulfilling business needs

(2) Ownership MUST be clearly defined for all IT solutions

(3) Reduce complexity and cost through standardisation and simplification

(4) Lifecycle of components SHALL be continuously managed; new technologies actively adapted and non-current technologies retired

(5) Reuse before buy, buy before build

(6) Execution capability MUST be ensured throughout the solution life cycle

(7) Ensure regulatory compliancy

Technology principles

The principles do thus provide the definition of 'right technology' at 'right time' in the Nordea context, while at the same supporting the business needs and requirements. Last but not least, all that must follow existing laws, policies and industry specific regulation.

All seven principles are mandatory and must be complied with by all projects in Nordea. Each of the principles is further elaborated in the following.

2.1 All IT initiatives MUST aim at fulfilling business needs

Statement:
All IT initiatives in Nordea must deliver value for the business by creating the foundation for new business initiatives and/or by making existing IT solutions more efficient.

Rationale:
This principle ensures that only the right IT initiatives are started, thus contributing to a higher efficiency in both business and IT development.

Implications:
- A joint planning process involving business and IT of all IT initiatives MUST be in place.
- Technology choices SHALL be derived from Business IT Strategies.
- IT SHALL provide active lifecycle management of IT solutions (incl. infrastructure) to ensure reliable business processes.

Explaining principle:
- This principle answers to question what and why: All initiatives MUST deliver measurable business benefits to its receiver. This *measure* should be defined jointly by business and IT, noticing both functional (new product capability) and non-functional requirements (e.g. availability). Business needs will be best secured by joint planning of the initiative involving both business and IT (how).
- Despite of the business needs driven initiatives or even joint planning efforts, even the greatest initiatives can fail or use exhaustively resources. To minimize those risks we need other principles.

Examples:
- Each element of the architectural design or existing solution architecture SHOULD be justified using a reason or a benefit model. The justification MUST be based on business driver, infrastructural requirement, and architectural rule.
- Business benefits justification SHOULD be considered in the following order of priority: 1) cross Nordea, 2) projects portfolio roadmap, and 3) individual project.

2.2 Ownership MUST be clearly defined for all IT solutions

Statement:
Any IT solution (incl. infrastructure) MUST have a provider and receiver.

Rationale:
This SHALL ensure that service delivery responsibility is clear, the responsibility for cost and the accountability for changes are defined.

Implications:
- Any change of a solution or technology supporting the solution MUST be aligned with the owner of the solution.

- Infrastructure initiatives that benefit more than one business area SHALL be managed across business areas.
- Open Source products MUST also have a provider and receiver.

Explaining the principle

- All solutions MUST have a clearly defined provider, not only during solution creation, but also during the whole life-cycle. This also implies that business solutions using common IT platforms MUST have equally defined ownership in place.
- Infrastructure initiatives benefitting multiple business domains MAY NOT have to be managed by Group IT. Essential is fulfilling customers' needs. Provider role from Group IT must be considered if one business domain does not succeed in supporting customer needs.
- Open Source components can bring significant cost savings, but MUST have a solid supplier. Open source MUST have a reliable, established, and financially stable supplier company.

2.3 Reduce complexity and cost through standardisation and simplification

Statement:
IT MUST contribute as well to improved reliability as to cost effectiveness by supporting uniform concepts, processes and products, by reducing the number of systems, and by coordinating competences, and rationalizing number of sourcing partners and suppliers.

Rationale:
The simplification and harmonisation of the IT systems portfolio is absolutely crucial in order to substantially reduce cost and also to ensure stability. Further it will lead to lower development and maintenance cost for IT systems and better utilization of competencies and managing the retirement of old technologies. To keep our IT landscape competitive, and development/change costs reasonable, we SHALL define solutions from components. To keep our IT landscape competitive, and development/change costs reasonable, we SHALL define solutions from components.

Implications:

- Solutions MUST be built from well defined, reusable, and interoperable components in order to improve time to market.
- Standardized components: concepts, data, processes, applications, infrastructure, platforms, and interfaces SHALL be preferred.
- We SHALL limit the number of technologies used to a reasonable level. Where possible existing country or division specific solutions SHOULD be replaced with common Nordea solution.
- OPTIONAL: When defining new IT solutions, multi-channel accessibility MUST be evaluated where relevant, and MUST influence the solutions design.

Explaining the principle:

- Simplification and harmonization MUST NOT be understood only as a cost issue, but will equally apply to amount of suppliers (keep 2nd source in mind)

- Both simplicity and standardization are needed: IT becomes very complex unless we simplify it. By splitting solution into smaller silos, we MAY simplify it, but we MUST also standardize technologies between silos to control costs.
- Standardization, consolidation, or legacy system removal SHOULD be used as means to cut costs. Standardization MAY range from procurement volume benefits to common business processes across the organization.
- Componentised solutions lead to easier consolidation, integration and adoptions cross-border challenges.
- This principle SHALL NOT exclude the use of newer technology, nor does it force to select old suppliers. Often new technology SHALL give faster and more flexible solution to fulfil business requirements. *(see also Principle 4)*

2.4 Lifecycle of components SHALL be continuously managed; new technologies actively adapted and non-current technologies retired

Statement:
Nordea operates in continuously changing business landscape. To be competitive in this landscape, the IT solutions MUST be actively managed to support business opportunities with competitive benefits. We use existing components, but where relevant, we SHALL introduce new technologies, and actively retire non-current technologies and components.

Rationale:
Active Life cycle management of the technologies and solution components allows cost optimized introduction of new and timely retirement of non-current technologies: by active scouting of the emerging technologies and continuous evaluation of our current technology portfolio.

Implications:
- Lifecycle of the solution components / technologies MUST be managed. We SHALL prefer well tested and fit-for-purpose technologies in order to deliver reliable solutions.
- IT SHALL continuously improve and evaluate new and existing technologies to be ready to support them, when business need raises, and to promote technology opportunities to business (yellow arising technologies).
- Replaced systems and no-longer-in-use-technology SHALL be de-commissioned. Technologies in phase-out (red or amber) MUST have a migration plan made with Business.

Explaining the principle:
- We MUST respond fast to business needs by evaluating new technologies of significant advantage, and prepare for the introduction of those should the business need raise. Once introduced, those become new components.
- All IT solutions will have a limited lifespan. Keeping solutions up-to-date does not happen without cost and these costs will arise over time. Once decided, solution ramp-down MUST have a transition plan to minimize risks.

- Business needs drive the changes in our IT landscape, but the continuous change MAY easily lead to complex and highly fragmented IT. To keep our IT landscape competitive, and development/change costs reasonable, we SHALL define solutions from components. These components MUST offer cost or other business benefits, be well tested and reliable, and SHOULD preferably be used industry wide.
- Principle is equally valid for in-house developments as for replacing existing developments: In-house developments MUST be evaluated and improved over time (implies need to define a performance metric).
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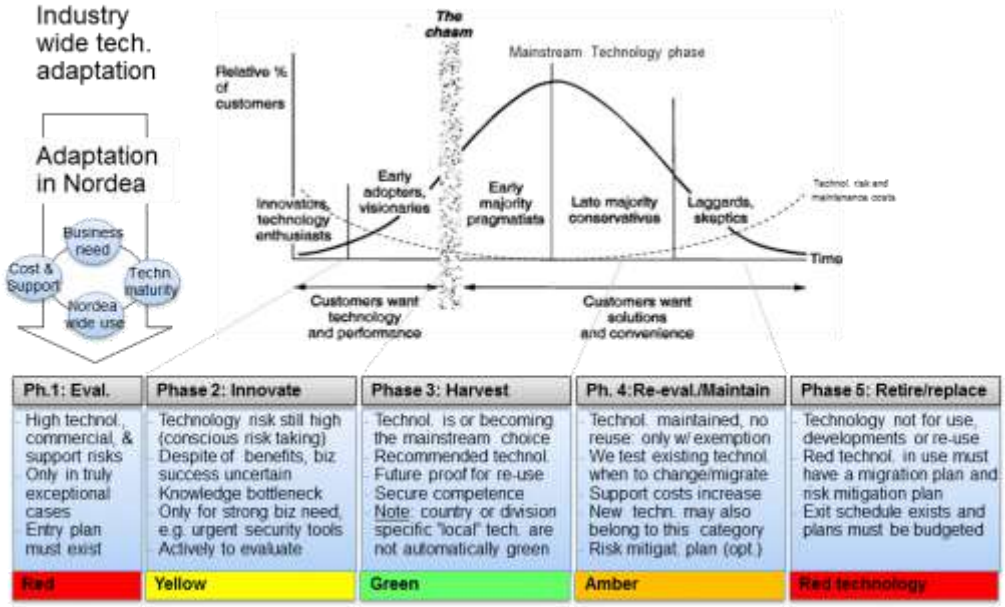
Note: Tactical (”*yellow” or “amber”*) technology can be a part of strategic (”*green”*) solution, e.g. if technology is embedded, but also essential part of the solution (e.g. Exchange with MS SQL).

The Technology lifecycle phases are described in the next picture.



2.5 Reuse before buy, buy before build

Statement:
When establishing new IT solutions as much of the existing portfolio as possible MUST be reused. Where this is not an option, solutions SHOULD be bought from 3rd party vendors. Only where no solutions matching the business needs can be found, IT MAY build solutions.

Rationale:
This approach ensures both cost effectiveness by leveraging existing solutions – reuse, and high quality – utilising the expertise of the market place.

Implications:
- The investment in the current system and technology portfolio SHOULD be leveraged as much as possible for reuse.

- In buying we SHALL prefer Commercial Off The Shelf products that can be made re-usable in our portfolio
- Nordea IT development and maintenance MAY can be multi-sourced - internal solutions, outsourcing, joint-ventures.
- In outsourced developments Nordea MUST own IPRs.
- Note: Re-use is limited only to future proof strategic ”green” technologies, while back-level “red” technology is not for re-use, and tactical “yellow” or “amber” technology only with an exemption.

Explaining the principle:

- Nordea is a bank, not a software vendor. For all the developments we MUST try re-use first, then buying, and only then we consider development
- While buying, we prefer commercially available ready-made solutions (COTS) for the time to market, solution maintenance and cost benefits.
- We also SHALL consider as what is the best option for the delivery and business model. Examples of such alternatives are internal solutions, outsourcing, joint-ventures, as a service delivery among others.
- Immaterial Property Rights (IPR) is not limited to source code while outsourcing development. Developer environments, designs and templates, data itself, use cases, test scenarios, best practices etc. can hold significant IPR value too.

2.6 Execution capability MUST be ensured throughout solution life-cycle

Statement:
IT resources and competences MUST be ensured to deploy and maintain any established or purchased IT solution in Nordea.

Rationale:
This is to make sure that Nordea is in a position to use, manage and support the introduced solution.

Implications:

- IT MUST be involved before in any acquisition or sourcing of IT solutions is made. This SHALL ensure integration, reliable production and reuse. Business SHALL involve IT to plan requested functionality or resolve problems
- IT MUST provide competencies required to support strategic platforms and technologies. IT SHALL involve Business in joint definition of strategic platforms and technologies
- Solutions on non-strategic platforms and technologies MUST consider alternative support options (incl. sourcing). Maintenance plans MUST be in place before implementing non-strategic solutions.
- Introducing new solutions/technology to Nordea MUST include a development plan for necessary skills and competencies.
- No technology SHOULD be chosen just because of the availability of internal competencies alone.

- Life-cycle expectancy must always be considered. IT SHALL provide active life-cycle management of IT solutions including infrastructure to ensure reliable business processes.
- Legal and risk compliance requirements MUST always be complied with

Explaining the principle:

- Securing execution capability & business continuity throughout the solution life cycle is a high priority to us due to the nature of our business.
- Nordea MUST to have full control of the strategic solutions and technologies in IT. Non-strategic solutions are preferably outsourced to suppliers, but arrangements must include maintenance arrangements.
- We SHOULD try to maximize the solution benefits and fit for Business needs by having regular two-way dialog between Business and IT.
- All solutions and technologies have a limited life-cycle. We MUST manage it from the initial planning, through the changes, and finally the timely removal.
- Having a team specialized to a certain technology, is only one criteria in technology evaluation, but not only. When business requires, we SHALL migrate to another technology and acquire new skills (e.g. by learning).

2.7 Ensure regulatory compliancy

Statement:
Enterprise information management processes MUST comply with all relevant laws, policies and regulations.

Rationale:
The regulatory change agenda is under continuous development and affects Nordea's analytical and reporting processes. Regulatory changes will drive changes in our processes and applications. Breach of laws or regulations may lead to significant fines or even to the loss of the banking license in the worst case.

Implications:

- All development efforts MUST follow the Nordea Information Security Instructions. All applications must be designed to meet the regulatory requirements.
- This principle has also wider internal implication. It is not only limited to the externally defined laws, policies or regulation, but internal directives, policies and instructions are equally mandatory to comply with.

3 Change notes

Key changes from version 1.0 to 1.1 (0 4)

- All principles are mandatory. This was jointly agreed with ITAG heads
- Principle "Nordea is a fast follower" was removed from the top level principles because it did respond our needs of renewal. Many old systems are approaching the end of life in the next few years, and postponed architectural improvements are starting to slower our time to market as cumulative architecture debt grows.

- The order of principles was re-arranged to correspond TOGAF Architecture Development Method cycle from business and strategic needs to solution creation to daily operations.

Key changes from version 1.1 (0 4) to 1.4

- Life cycle colouring of the Phase 4 yellow has been changed “amber”, and yellow has been reserved for the arising new technologies
- Solution ownership: additional clarification added for the common technologies Provider role from Group IT must be considered if one business domain does not succeed in supporting customer needs.

Key changes from version 1.4 to 1.5

- 7th principle added for the regulatory compliancy