

TNO innovation
for life

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From digital dependence to strategic autonomy

Roundtable event summary

17 april 2026



Companies must manage dependencies and build critical capabilities, whilst the government must prioritize key domains to support in strategic digital autonomy

Event summary

On April 1, 2026, we as Arthur D. Little, TNO and NAE hosted a roundtable exploring Europe's digital dependencies and strategic autonomy, translating insights into implications for companies and the Dutch government

Implications for companies operating in the EU and NL

- **Shift from efficiency to resilience thinking**
 - Reassess dependencies in mission-critical domains and accept trade-offs between cost, performance, and control
- **Actively manage and reduce dependencies**
 - Identify critical control points and design modular, interoperable architectures to limit lock-in
- **Build strategic capabilities**
 - Strengthen governance, system architecture, and internal understanding of digital and AI risks
- **Leverage ecosystems and anticipate shifts**
 - Partner across Europe and prepare for sovereignty-driven regulation and market changes

Implications for the Dutch government

- **Prioritize and focus on strategic domains**
 - Target critical sectors (e.g., health, energy, finance, infrastructure) rather than the full economy
- **Act as catalyst and market shaper**
 - Use public procurement and demand aggregation to scale European (sovereign) solutions
- **Enable coordination and ecosystem development**
 - Strengthen EU alignment, public-private collaboration, and scaling of European tech players
- **Create long-term investment conditions**
 - Align policy, funding (pension funds?), and regulation beyond political cycles
 - Improve capital availability and talent pipelines

Outcome of the event in five statements

1. The real goal for Europe is not full autonomy - it is strategic interdependence

The more realistic target is not self-sufficiency, but balanced dependence and the ability to fall back or disconnect when needed.

2. Sovereignty can enable cooperation

The discussion challenged the idea that sovereignty is anti-cooperation: with clear, stable governance frameworks (e.g. regulations, standards, and shared rules) that ensure control over critical assets, companies and regions are in a stronger position to collaborate.

3. Execution capacity is the real scarce resource

We observed that while the money is “there in theory”, the environment, consistency, and speed needed to deploy it are missing.

4. Hyperscalers solve a genuine integration problem

One less obvious observation was that hyperscalers “connect all the dots”; the real concern is not their use per se, but the resulting overdependence and loss of leverage.

5. The sovereignty premium is already real

Companies are already absorbing “silent investment” in regional separation, supply-chain shifts, and contingency plans — meaning the premium exists even before it is discussed openly.

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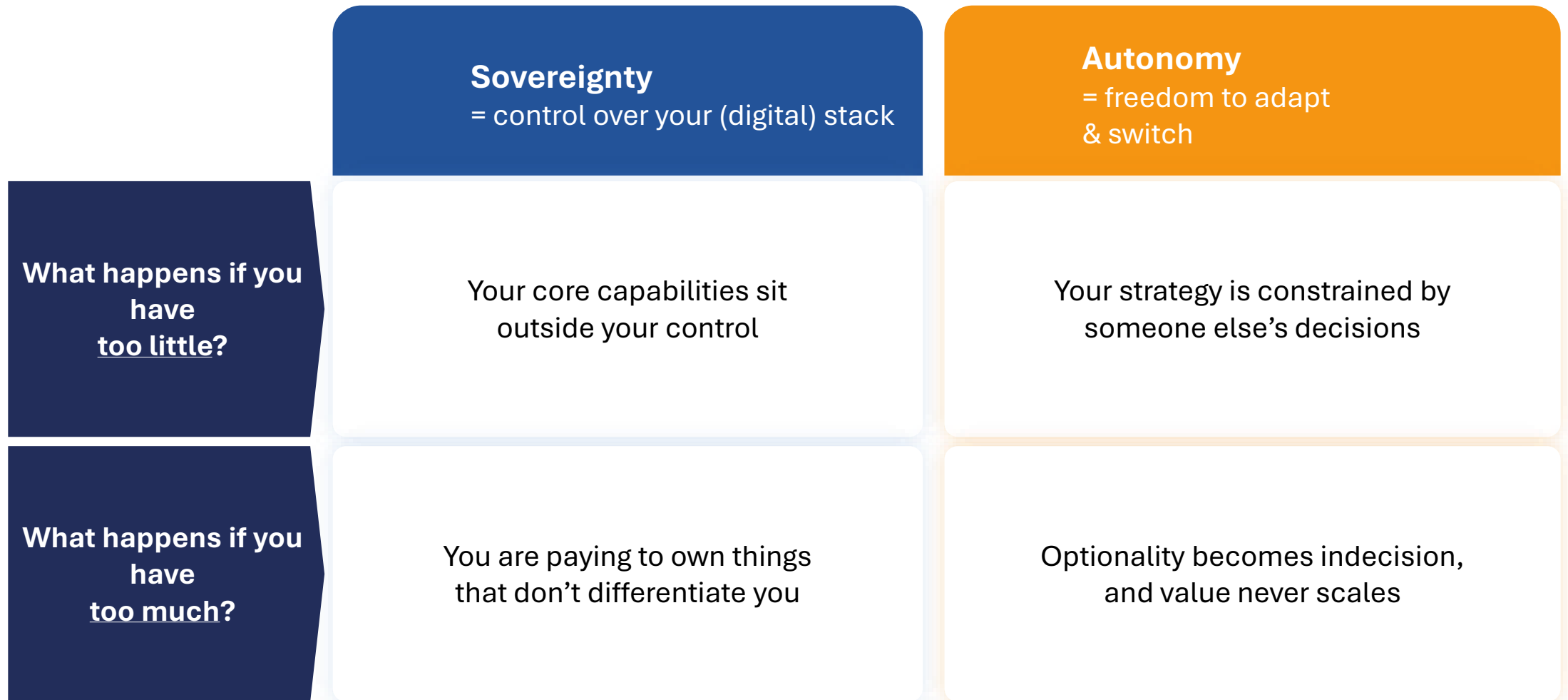


INTRODUCTION

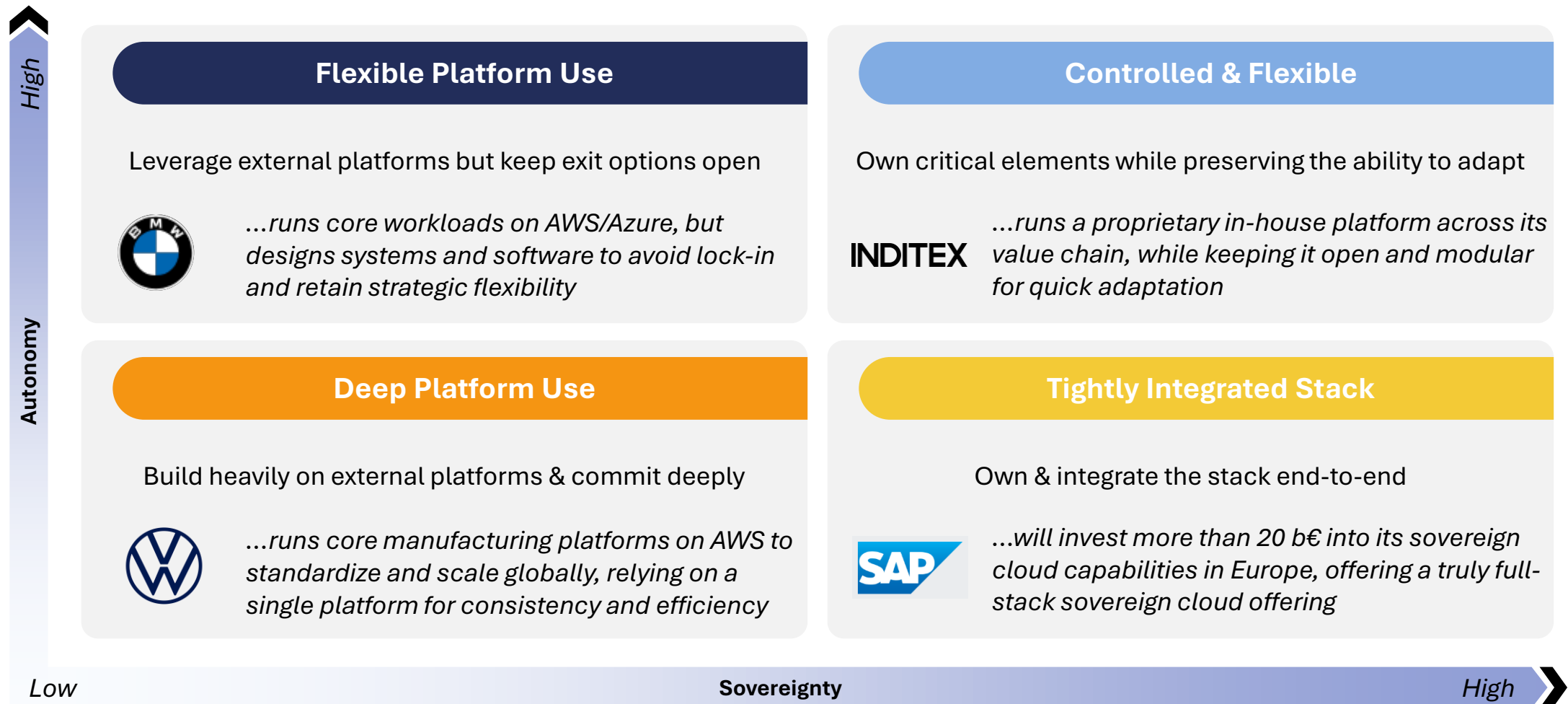
About digital sovereignty
and autonomy

Michael Kolk, ADL

Digital sovereignty and autonomy are not the same thing

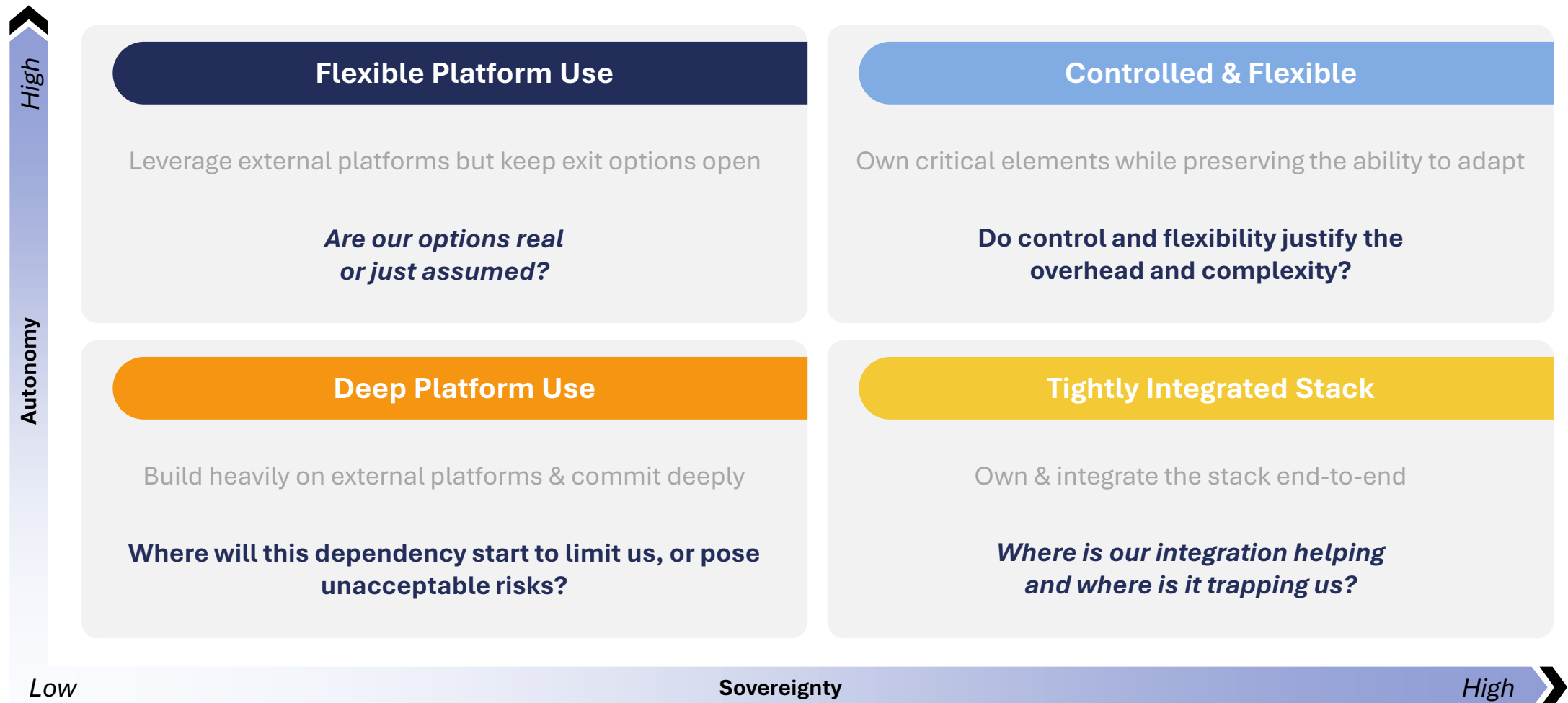


We discriminate four archetypes - there is no right or wrong...



1 Introduction – About digital sovereignty and autonomy (Michael Kolk, ADL)

...but no matter where you are, there are critical questions to answer



1 Introduction – About digital sovereignty and autonomy (Michael Kolk, ADL)

Main conclusions on one slide (company perspective)

#	Conclusion	Implication for companies	Most telling quote	Link to archetype
1	Most firms lack a clear view of dependencies	Before any strategy, companies must build visibility of stack, data, and access dependencies ; otherwise, decisions are guesswork	“Do we know how our technology stack is working? ... All the answers are no.”	Applies to all quadrants → prerequisite to move anywhere
2	The real problem is lock-in, not sovereignty itself	Aim is not “own everything” but retain exit options and switching ability	“You can remain sovereign as long as you have a choice in provider... not blocked into one specific thing.”	Core of Flexible Platform Use and Controlled & Flexible
3	Architecture requires conscious trade-offs (no perfect solution)	Firms must make explicit choices per component (own vs partner vs outsource) instead of drifting into dependency	“It’s always a series of wicked choices building this resilient architecture.”	Explains movement between all four quadrants
4	A risk-based approach per layer is essential	Different stack layers (data, apps, cloud, hardware) require different control strategies ; one-size-fits-all fails	“We just have a lot of legacy systems... choosing the granularity... garbage in is disaster out.”	Enables hybrid positioning across quadrants
5	Flexibility (multi-provider / modularity) comes at real cost	Keeping options open requires investment, complexity, and engineering discipline	“The ability to have multiple parts... is very nice... but the cost... gets underestimated.”	Trade-off between Flexible Platform Use vs Deep Platform Use
6	Data and architecture quality determine AI success	AI amplifies weaknesses → firms must fix data quality, governance, and architecture first	“Garbage in is disaster out.”	Relevant across all quadrants, especially Controlled & Flexible
7	Legacy and culture, not technology, are the main bottlenecks	Transformation requires organizational change , not just tech investment; startups vs incumbents differ fundamentally	“It’s a cultural change... everything... the way you work.”	Explains why firms are often stuck in Deep Platform Use



SESSION 1

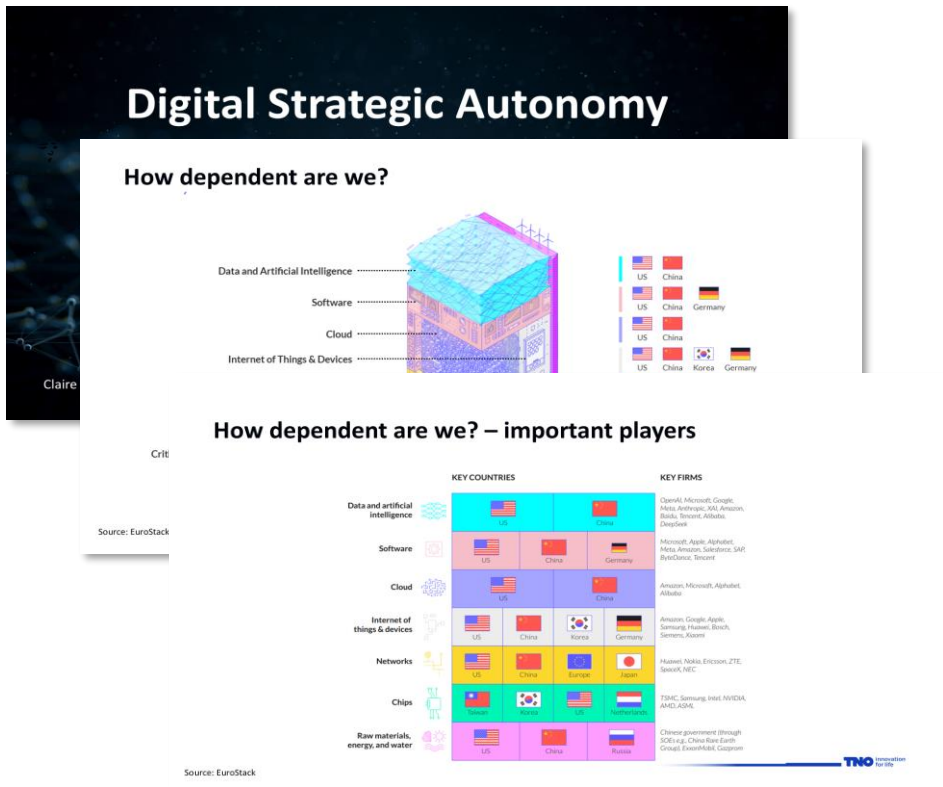
Digital Sovereignty: Governance & Technology Perspective

Claire Stolwijk, TNO

In Session 1, we examined digital strategic autonomy, assessing the EU’s dependencies and identifying ways to reduce risks and strengthen independent capabilities



SESSION 1 – SELECTED SLIDES AND DISCUSSION STATEMENTS



1 **Current risks and dependencies across public and private sectors are not transparent (enough)**

2 **What areas require strategic autonomy, and where we need to remain globally integrated still needs to be defined**

3 **It is unclear who needs to pay the “sovereignty premium”**

4 **Digital Sovereignty is hindering cooperation**

Moreover, we concluded that the EU should reduce its digital dependencies by prioritizing key domains and balancing sovereignty with economic reality



KEY THEMES

- **Structural dependency and limited control**
 - Deep reliance on non-European hyperscalers and supply chains creates systemic vulnerability
 - Limited visibility and ecosystem lock-in reduce Europe’s ability to act independently in crises
- **Sovereignty vs. Economic Reality**
 - Full-stack sovereignty conflicts with global efficiency, scale, and business incentives
 - Focus must shift to securing mission-critical domains where autonomy truly matters
- **Europe’s Structural Weakness: Scale, Fragmentation & Execution**
 - Fragmentation and weak capital markets prevent Europe from scaling innovation effectively
 - Lack of coordinated, long-term execution leaves Europe behind US and China



Discussion

Points of agreement

- Europe’s reliance on non-European technologies is a **structural risk**, requiring stronger control in critical sectors
- Full digital autonomy is **not feasible** focus should be on mission-critical domains
- Governments should **enable digital sovereignty** through policy, procurement, and incentives—acting as launch customers to scale strategic solutions
- **European collaboration is essential** for scale but difficult to execute
- Talent, capital, and scaling remain **key bottlenecks**

Debate

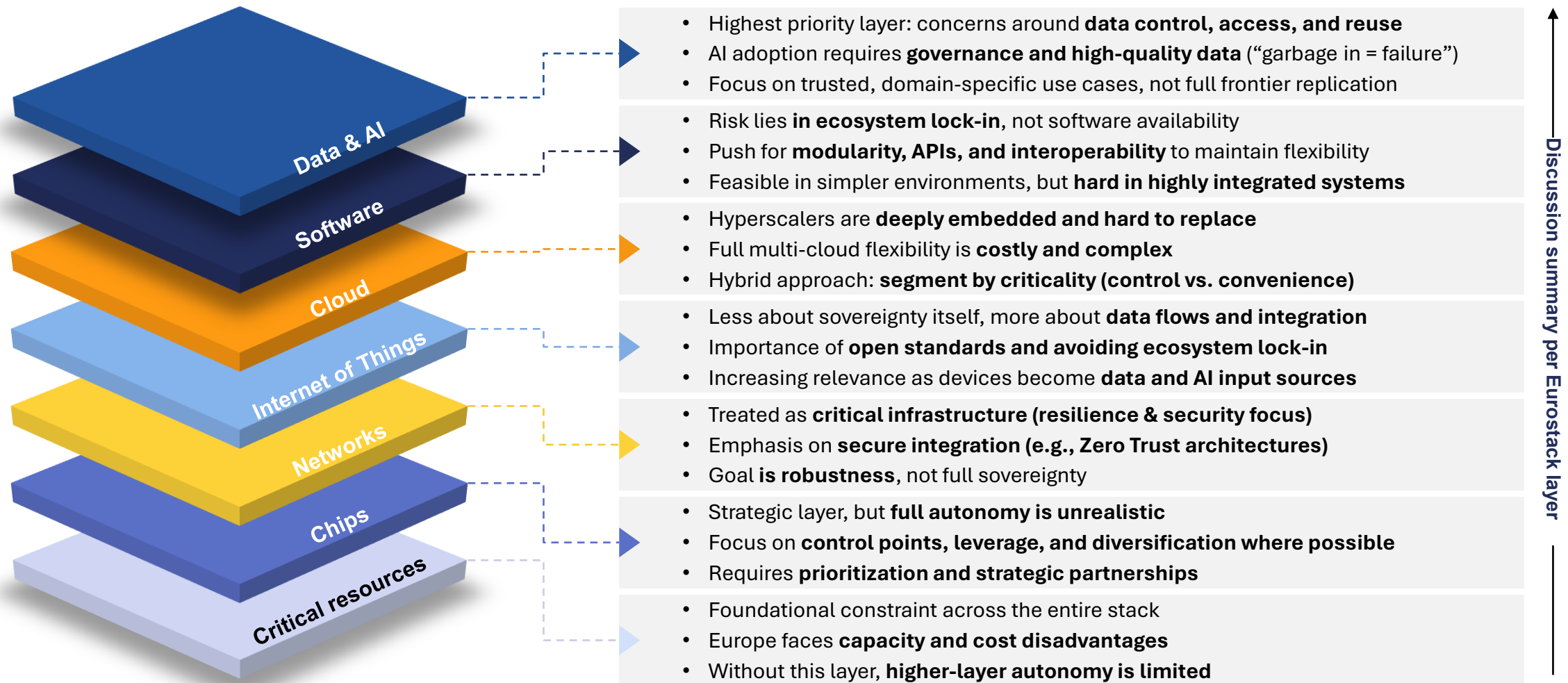
- **Level of urgency:** known but ignored vs. only recently emerging
- **Where to focus first:** data vs. infrastructure vs. platforms
- **Role of government:** active industrial policy vs. enabling framework
- **Extent of regulation:** protection vs. barrier to innovation



Emerging trends and signals

- Shift from **globalization to geopolitical fragmentation** and regionalization
- Rising importance of resilience, redundancy, and **“disconnect capability”**
- **Emergence of multi-cloud**, open-source, and ecosystem-based strategies
- Shift from **short-term cost to long-term value:** sovereignty investments are costly upfront but reduce dependency and retain economic value within Europe over time

Furthermore, we found that digital sovereignty requires focused control in critical layers, not full autonomy across the stack



Lastly, we found that companies and governments in the EU and NL recognize digital dependency risks but struggle to act decisively on sovereignty



SESSION 1 – SELECTED QUOTES

“The ability to disconnect is more important than full control.”

“You don’t need full independence — you need control points.”

“I don’t think the risks were clearly known... or they were clearly ignored.”

“The risks may be transparent, but people don’t understand the consequences”

“We thought we were safe because we had this ally situation... and all of a sudden an ally situation is not an ally situation.”

“Companies will always make a business decision — not a geopolitical one.”

“We regulate the future instead of building it.”

“You need enough sovereignty to be able to cooperate.”

“In Europe we regulate... in China and the US they build.”

“If you don’t have the money, you have to pick your niche.”

“If one plays winner-takes-all and the other plays regulation, you already know who wins.”

“If you haven’t experienced the risk, you don’t care.”

“Too much regulation hurts startups more than big tech.”



SESSION 2

Digital Sovereignty: Business & Strategic Perspective

Lukas Roffel, NAE

3 Session 2 – Digital Sovereignty: Business & Strategic Perspective (Lukas Roffel, NAE)

In Session 2 we examined digital dependence from a business perspective, highlighting trade-offs between innovation and control and outlining strategies to build autonomy



SESSION 2 – SELECTED SLIDES AND DISCUSSION STATEMENTS

De Digital Technology Stack (DTS)
Clingendael report January 2023 – Open strategic autonomy

Layered Dependencies:
Full visibility into dependencies from hardware through platforms to AI models.

Hidden Risk:
"Local" services operating on U.S. or China infra

Conclusion

Autonomy Is a Strategic Choice:
Not about full self-sufficiency, but about preserving credible alternatives.
Cooperate in Europe
Isolation is not a sustainable strategy

Competitive Advantage:
Strategic autonomy underpins:
- long-term resilience
- survival in an increasingly volatile environment.

Layer of the DTS	Protect	Promote
Digital society and culture	Neo-governance	Decentralisation, open source
	Neo-collectives	Civic organisation
	Smart habitat	Data privacy
	User interfaces	Data privacy, voice assistants, 3D cameras
Applications		New dual-use technologies, life- and misinformation, election interference
	Intelligence	Access to "smart" algorithms
	Data	Data privacy, Data ownership and port-
		Digital principles and rights
		Multistakeholderism, digital participation, decision-making and enforcement
		Digital government (GDG, GDS), ownership of digital ID and finance, (green and) smart cities, smart health
		Digitally skilled citizens
		European platform companies (email, social media, fitness, etc.)
		High performance computing and AI
		Data ownership and port-

1 Most organizations lack a clear inventory of their digital and AI dependencies
Organizations do not have this visibility and are unable to make a plan to improve this

2 Multi-provider strategies are often proposed as the answer to vendor lock-in
A genuinely resilient architecture is too costly, high complexity and of compromised capability?

3 Products are rarely built from scratch — they integrate global components
The degree of control and portability of a "Sovereign" solution is very limited

4 Building digital and AI autonomy requires talent, partnerships and long-term investment
The ROI for strategic autonomy is uncertain and distant?

We found that execution complexity, lack of visibility, and efficiency trade-offs are the main barriers to achieving digital autonomy



KEY THEMES

- **Lack of visibility and control over dependencies**
 - Most organizations lack a clear view of their digital and AI stack
 - Dependencies are deep, hidden, and difficult to map (legacy, supply chains)
- **Execution gap and organizational complexity**
 - Main challenge is not capability, but execution and coordination
 - AI adoption is often unstructured and reactive (bottom-up, fragmented)
- **Trade-offs: sovereignty vs. performance and practicality**
 - Sovereign solutions often imply higher cost, lower performance, more complexity
 - Strong lock-in persists due to integration, usability, and ecosystem effects



Discussion

Points of agreement

- Most organizations **lack visibility of dependencies**, limiting action
- Full digital sovereignty is **not feasible** in practice
- **Risk-based prioritization** is required over full control
- **System architecture and modularity** are key to resilience
- Government and large players must **enable coordination and direction**

Debate

- **Feasibility of reducing dependencies:** realistic vs. too complex
- **Speed of transition:** gradual vs. urgent shift
- **Role of multi-vendor strategies:** resilience vs. inefficiency



Emerging trends and signals

- Growing focus on **modular and interoperable architectures**
- Increased use of **multi-vendor and hybrid strategies**
- Rising importance of **AI governance and data quality**
- Continued dominance of **hyperscalers despite known risks**

Lastly, we observed that limited visibility and control over digital dependencies make sovereignty a complex, long-term transformation



SESSION 2 – SELECTED QUOTES

“A resilient architecture is about conscious choices — not technical perfection.”

“Complete control of your supply chain is an illusion.”

“This is not a one-year effort — understanding your dependencies is a multi-year transformation.”

“You can’t manage what you don’t understand — and most organizations don’t understand their own stack.”

“AI is entering organizations through the backdoor — uncontrolled and unmanaged.”

“If you don’t invest, you won’t grow — but if you do invest, you may never see the return.”

“The biggest problem is not technology — it’s that no one is responsible for the data.”

“Most organizations simply don’t know what is connected to what — so they cannot even cut access.”

“You need system thinking — otherwise you end up solving point problems instead of the real issue.”

“If you switch away from hyperscalers, you often spend a lot of money — to end up with the same functionality.”

“We don’t know where our dependencies are... and that means the situation is not good at all.”

“It’s always a series of wicked choices — between performance, cost, and sovereignty.”

“We started using AI because everyone else did — not because we had a clear strategy.”

