

Trusselsbilledet i byggeindustrien

29. September 2025

Kort om mig...



Martin Nexø

Cyber Tech Services



Medstifter og meget engageret
i vores tekniske services
indenfor 'Protection', 'Incident
Response' og 'GRC'



Baggrund i økonomi og jura,
kombineret med en masse
nørderi med at kode og lave
digitale løsninger



Spørgsmål? Skriv gerne:

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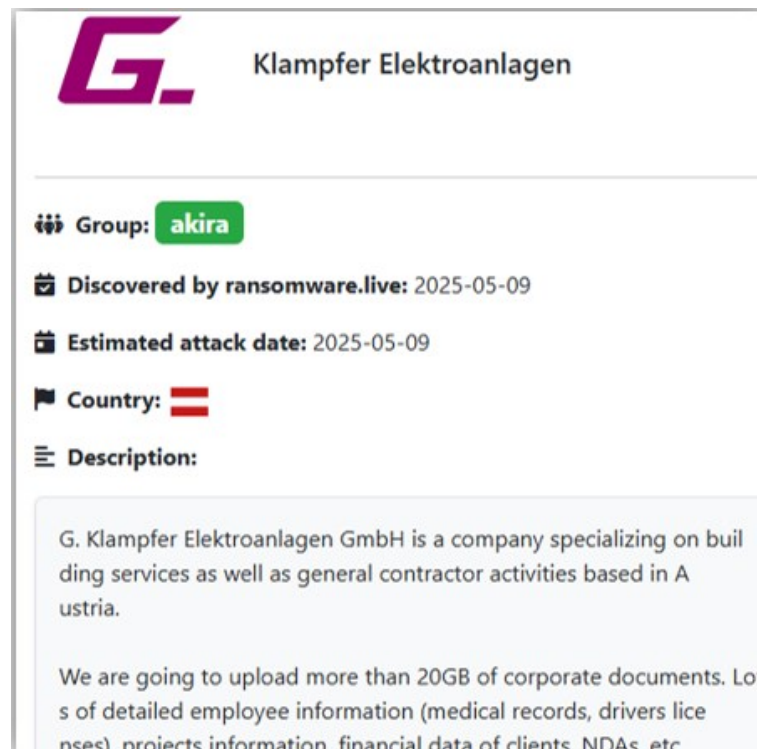
Byggeriet er kendetegnet ved store tab forbundet med forsinkelser...

Ransomware-sager i byggebranchen viser eksfiltration, læk, driftsstop og bods-konsekvenser



Den store Bouygues sag fra 2020 er stadig et eksempel på hvor hurtigt direkte tab pågår i byggeriet.

3 ugers nedetid = DKK 75 – 100m tab

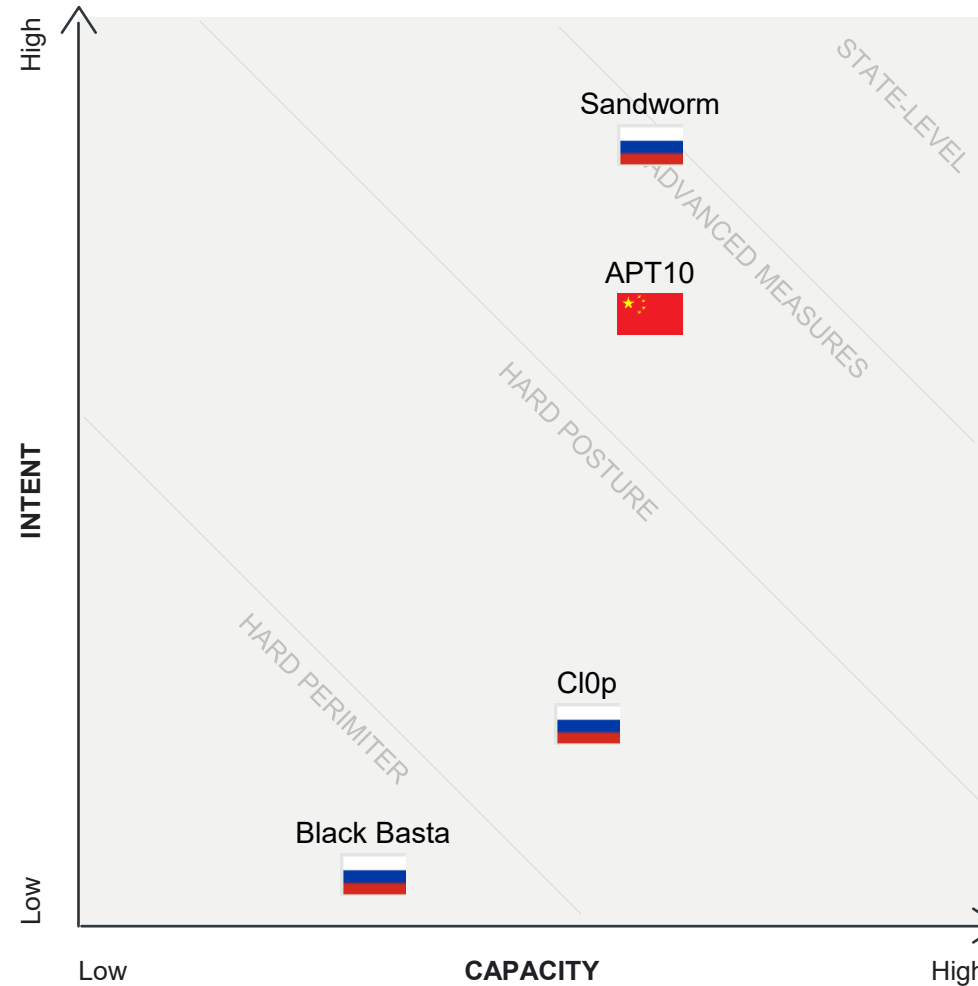
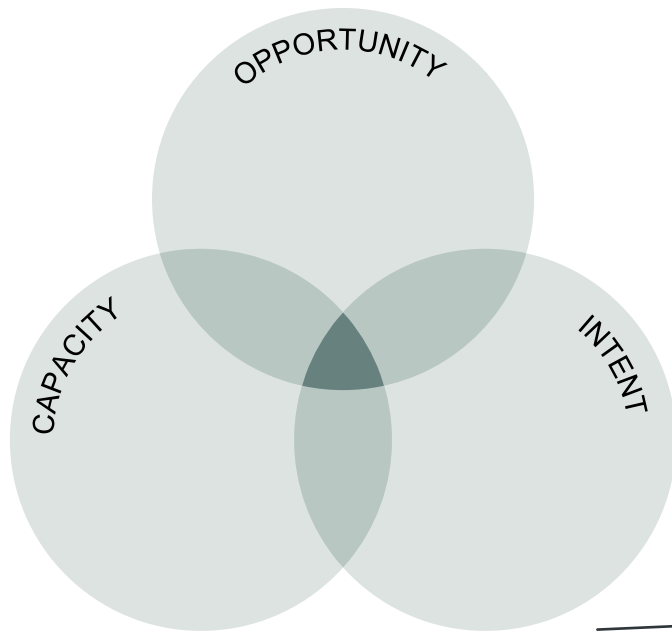


Mindre virksomheder oplever også risikoen, særligt igennem trusselsgrupper der har sat focus på RaaS hvor mellemstore virksomheder med øget sårbarhed er målet.

Akira rammer 250 virksomheder på 12 måneder

Strategisk trusselsbillede...

Byggeri har stor angrebsflade og fragmenteret modenhed; samtidig har trusselsaktørerne stor interesse i byggeriet qua den samfundsmæssige bevågenhed.



Byggeriets unikke trusselsbillede...

Taktisk og operationelt står byggeriet overfor en række unikke trusler

5

unikke trusler for
byggeriet

						
	TRUSSEL	Ukendte personer med fysisk adgang	Kompleks fysisk adgangskontrol	Midlertidige netværksløsninger og enheder	Sammenkædede leverandørsystemer	IoT og OT på byggepladserne
	KENDETEGN	- Høj turnover og mange 3.-parter - Mange midlertidige medarbejdere og forskellige nationaliteter - Gæster bevæger sig uden opsyn	- Flere zoner/porte og midlertidige løsninger - Låne-/tabte badges; manglende foto-match - Uklare overblik over "nøgleholdere"	4G/5G-routere, AP'er, kameraer med default creds "Flat" net; ingen central logging - Hurtig opsætning, ofte uden hærkning	- BIM/SaaS/planlægning via API/VPN - Delte projektkonti; manglende offboarding - Tredjeparts scripts / integrationer	- Kraner, porte, sensorer, kameraer; cloud-styring - Svag segmentering / patch; default creds - HSE-relevant: Cyber kan påvirke fysisk sikkerhed
	SCENARIO	- Imitator får adgang til skurvogn, tilslutter "malicious" kabel - Stjålne creds → foothold i site-nettet - E-mail og fildrev kompromitteres på få timer	- Tabt badge bruges efter lukketid til IT-container - Backup og adgangskontrol slås fra via panel - Angribere får ro til at etablere persistence	- Default admin på 4G-router misbruges - SMB angreb tilgår fildeling → data ændres/slettes - Site-koordination stopper, leverancer forsinkes	- Underentreprenør kompromitteres i VPN - Ransomware i fælles projektmappe eller større segment af servere - Tidsplan glider; bød aktiveres dagligt	- Lækket API-nøgle til adgangsport → porte styres - Kran-telemetri eller OS forstyrres - Logistik og adgang blokeres; HSE-alarm og produktion går i stå

Men...
Det kan dog
ikke ske for os!

*” Vi har faktisk
MFA på alle
adgange ”*

*” Vores netværks-
og USB-porte er
lukket ”*

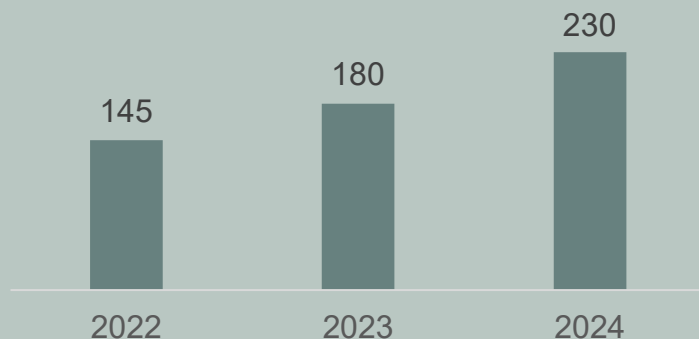
Byggeriet - udviklingen for IT-sikkerhed og angreb...

Data på trusler fra byggeriet



I Danmark

Løsesumsbetalingerne stiger samlet set støt år for år i Danmark, og direkte omkostninger udbedring af angreb estimeres at være højere end løsesums-betalingerne.



Samlede betalinger i DKK millioner

1,5m DKK i bøde

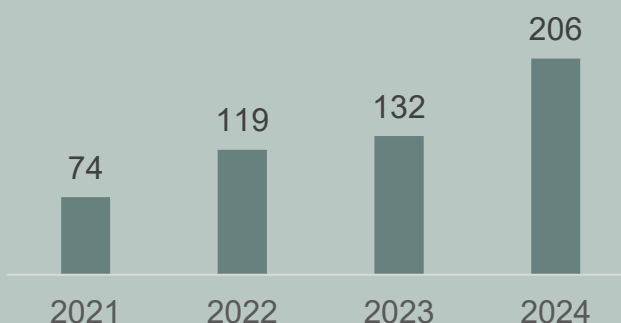
er den højeste bøde givet af Datatilsynet til en virksomhed i byggeriet i årene 2022 - 2024



I byggeriet

37% virksomheder i byggeriet meddeler til DI at de har oplevet cyber-relaterede forsinkelser på enterpriser.

DarkWeb indikerer stigende interesse for byggeriet, f.eks. antallet af ransomware-læk



Fund af virksomhedslækager fra ransomware på DarkWeb

65% af byggeselskaber

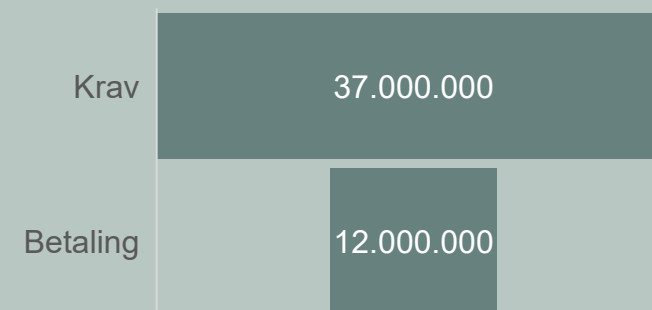
meddeler at have oplevet system nedbrud fra ransomware på mere end 1 uge



Hos virksomhederne

Ca. 35% af virksomhederne betaler ransomware aktørerne.

Typisk nedbringer forhandlinger aktørernes krav med ca. 30% før betaling gennemføres.



Omfattende ransomware angreb resulterer gennemsnitligt i

**14 dage
fuld IT nedbrud**

Enkelte initiativer kan gøre en stor forskel...

Det er komplekst og krævende at opbygge en robust sikkerhed, men der er lavt hængende frugter som giver stor værdi



AKTIVITET				
	Bloker porte og komando-scripting	Styrk hygiejnen på identiteter og adgangsrettigheder	Øget hærkning på enheder, særligt laptops	Inkluder byggepladser og IoT i jeres SOC
	• Bloker USB porte og HID • Tillad ikke komando-scripting på bruger Pcer, så som PowerShell • Slå AutoRun / AutoPlay fra på alle enheder	• Kør PingCastle / AD Assessment kvartalsvis og luk top-fund • Tving MFA for alle fjernadgange, leverandører og privilegerede konti • Indfør "no shared accounts"	• Rul standardiserede hardeningsprofiler (CIS baseline / Intune) ud • Kun managed devices på netværk; gæster i isoleret VLAN • Lad ikke brugerne være lokal admin	• Indrul midlertidige miljøer i Defender / EDR og forward logs til SIEM • Netværks-logs til SOC, hjælper med at overvåge IoT og OT • Eget VLAN til IoT og OT, og overvåg uautoriserede forbindelser
EFFEKT	• Stopper hurtige footholds via USB/kabler • Mindsker lateral movement og privilege misbrug • Giver færre "hands-on-keyboard" muligheder for angribere	• Undgå misbrug af gamle rettigheder og protokoller i AD • Hurtigere detektion af unormal adgang • Bedre sporbarhed (logs) ved hændelser	• Reduceret angrebsflade og malware-risiko • Mindre risiko for data-exfil fra bærbare på sites • Ens drift gør patching og support hurtigere og nemmere	• Synlighed på sites og hurtigere respons • Tidlig detektion af kompromitterede routere/IoT • Dokumenterbare kontroller overfor bygherre og forsikring



Tak for jeres tid

Kontakt mig endeligt med spørgsmål eller
vedr. adgang til trusselsdata

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EMERGE.

Appendix: Introduction to Implement

Hello, we're Implement

We want to leave every
organisation that we touch
in a truly better place –
more **fit for humans** and
more **fit for the future**.

From local roots to global perspectives

Born in Denmark with offices in Copenhagen, Aarhus, Stockholm, Malmö, Gothenburg, Oslo, Zurich, Munich, Hamburg, Düsseldorf and Raleigh, NC. With 1,800+ employees, multinational clients and worldwide projects, we offer expertise with a global perspective.

We believe that great organisational impact leads to great impact for humanity.

Implement was created to help turn deep expertise into real change.

1,800+

Employees

800+

Co-owners

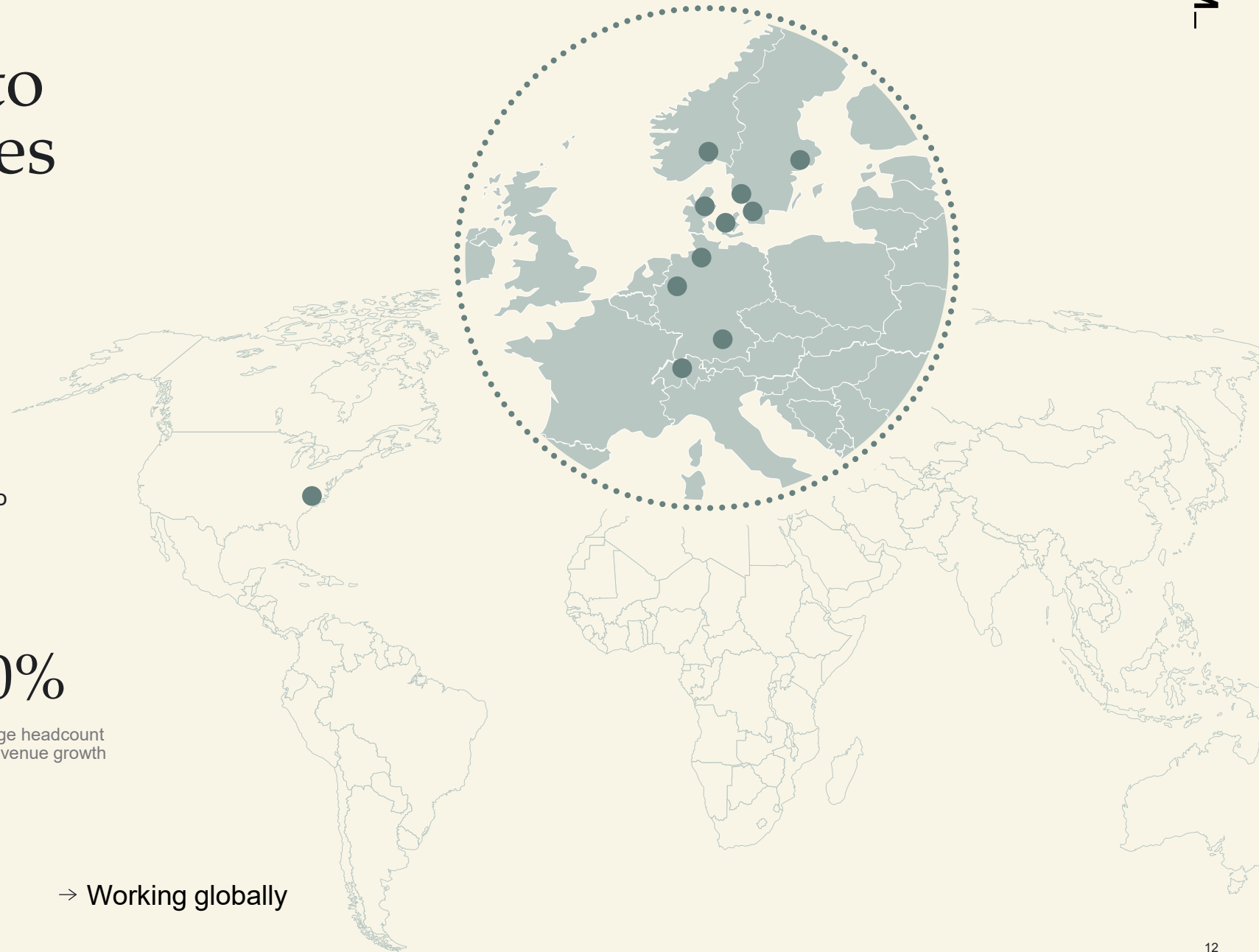
20%

Average headcount
and revenue growth

→ Founded in 1996

→ Employee-owned

→ Working globally



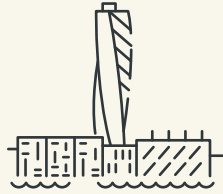
We help clients all over the world, working from 11 offices in 6 countries



COPENHAGEN
910 employees.
Opened in **1996**.



STOCKHOLM
84 employees.
Opened in **2008**.



MALMÖ
62 employees.
Opened in **2009**.



OSLO
46 employees.
Opened in **2009**.



ZURICH
86 employees.
Opened in **2016**.



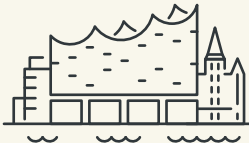
AARHUS
111 employees.
Opened in **2018**.



MUNICH
51 employees.
Opened in **2018**.



RALEIGH
13 employees.
Opened in **2021**.



HAMBURG
21 employees.
Opened in **2021**.



GOTHENBURG
19 employees.
Opened in **2022**.



DUSSELDORF
10 employees.
Opened in **2023**.

We help our clients answer some of the toughest questions to their most worthwhile problems to ensure sustainable change with impact

Expertise areas:

Transformation

- Business scale-up
- Innovation and future business
- Transformation office and acceleration
- Business performance improvement
- Agile organisations

Sustainability

- Sustainable strategy
- Energy transition
- Sustainability reporting
- Decarbonisation
- Circularity
- Diversity, equity and inclusion
- Funding the green transition



People

- HR transformation
- People technology
- Organisation
- People analytics
- Diversity, equity and inclusion
- Talent
- Culture

Projects

- Portfolio and resource management
- Project and programme management
- Benefits realisation
- Competence development

Leadership

- Leadership development
- Team development
- Leading change
- New ways of leading
- Facilitation



Operations

- E2E planning
- Procurement strategy and transformation
- Manufacturing
- Supply chain management
- Digital supply chain
- Cost-out
- Operating model

Digital

- Digital and IT strategy
- Technology, sourcing and optimisation
- Driving transformation
- ERP advisory
- Cybersecurity and privacy
- Data, AI and analytics
- Digital operating model

Strategy

- Strategy design
- Strategy execution
- Strategic innovation
- Economics
- M&A pre-deal
- M&A post-deal
- M&A vendor and exit support

Communication

- Sustainability and strategy
- Leadership and culture
- Digital and IT

Finance

- Strategy and operations
- Business transformation
- Business performance management

Commercial

- Commercial strategy
- Customer centricity and CX
- Branding value proposition and portfolio
- Go-to-market and channel
- Marketing operating model
- Sales operating model
- Monetisation and pricing
- Commercial technologies
- Digital customer engagement
- Commercialising sustainability
- Commercial capability development



Our guiding principles



Start with people

Transformation is always driven by and lived by people. Not stakeholders, resources or FTEs. People. Every single person has a perspective, an idea, a hope, a question. Speak to them. Value their opinions. Let them guide you. Leverage the wisdom of the crowd.

And let your approach to transformation be coloured by what you learn. Does it feel meaningful to the people involved?



Own the energy

There is energy in every interaction. Take responsibility for it. In the conversation. In the meeting. In the project. With the team. With the client.

Whatever situation you are in, it is your responsibility to create energy that is productive. Bring your expertise, listen to the music and smell the coffee. Design all touchpoints with as much attention to energy as to content.

Energy can be managed, created and destroyed. It is not given, and you own it.



Lead with curiosity

Asking is more sophisticated than guessing. Any conversation, any transformation, any complex problem is best solved collectively. You have a view, a perspective, but there is always a gift in uncovering what it might be that we do not get or see.

Transformation is only truly co-created if we balance advocacy with inquiry. Be curious about other people's perspectives. Ask "why" more often than "how". And listen. Especially when you disagree or do not understand.



Embrace the irregular

Very few processes involving people are linear – transformation is more like a dance than mechanics. Embrace the unexpected, diversity, interruptions and opposing views because this is an invitation to think differently and broaden your perspective.

Do not see the irregular as a problem. Think of it as an opportunity to try something different. This is how we grow and help others grow.



Connect with your inner nerd

We are experts and enthusiasts. In most cases, what clients really want is someone – a small team – who has done it before. Who knows what good looks like and can make their organisation embrace the unknown and dance along.

The starting point for this is the need to truly know our area of expertise and geek out on it. To connect with our inner nerds to really turn our craft into something that inspires others. We do not only know our craft – we love it too. And only when we truly master something will we be able to cut through complexity and arrive at simple solutions.



Find your way

Our job is to find a way to make transformation happen. Often there is no blueprint, no "five steps to heaven", and we must pave the way as we walk. One step at a time, react, course correct and adapt.

We need plans to scope our efforts. But sticking to a detailed plan and ignoring what happens around us is not only dangerous; it is an insult to the future because it will always surprise us.

It is your obligation to find out what works. To find a way to make it happen despite the odds, fears and organisational obstacles.



Love to help

At the core, we help our clients transform.

We should always ask what is helpful in everything we do. That is why we are here. That is how we define consulting, and it is what Implement is all about. We help our clients, we help our colleagues, and we help anywhere we can. We help because it is good business and because it makes a difference. Sometimes we help when we are asked for it. Sometimes we just help because we can sense it is needed in order to progress beyond what is asked.

And we ask for help. Only by asking for help can we truly aspire to help.



Live

We aspire to help the most forward-looking leaders in the most ambitious organisations solve their most worthwhile problems. That is a big promise, and it calls for us to bring our absolute best in every interaction and conversation. Doing that again and again, project after project, year after year is extremely rewarding – and extremely demanding.

Which is why our promise is bigger. We want to do this in a regenerative way that is sustainable. You have one life. Live it. And find your own balance between work and leisure, between love and PowerPoint. For your own sake, and because we think it makes you better suited to help others transform.