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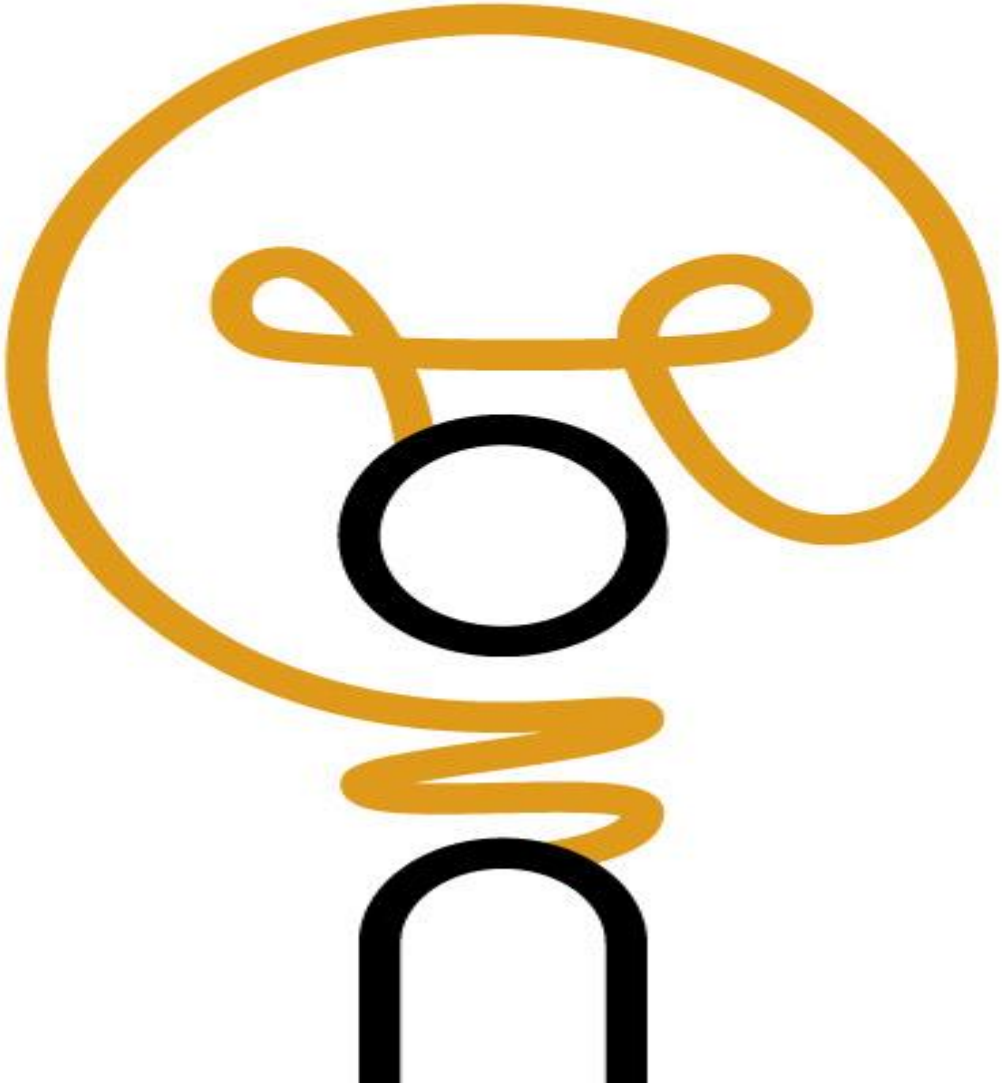
Learn how innogy Czech has increased agility and optimized costs by utilization of AWS Cloud



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Petr Bohac,
Manager, Retail IT Infrastructure

AWS User Group – Prague – 11.12. 2019

Who we are…

innogy Czech

- operational company of innogy for the Czech Republic
- in 2016 rebranded from former RWE name
- revenues 42,7 bil. CZK in 2017
- in 2017 supplied 28,4 TWh of gas and 2,6 TWh of power
- 1,6 million customers and 4,000 employees
- 65,000 kilometers of gas grid

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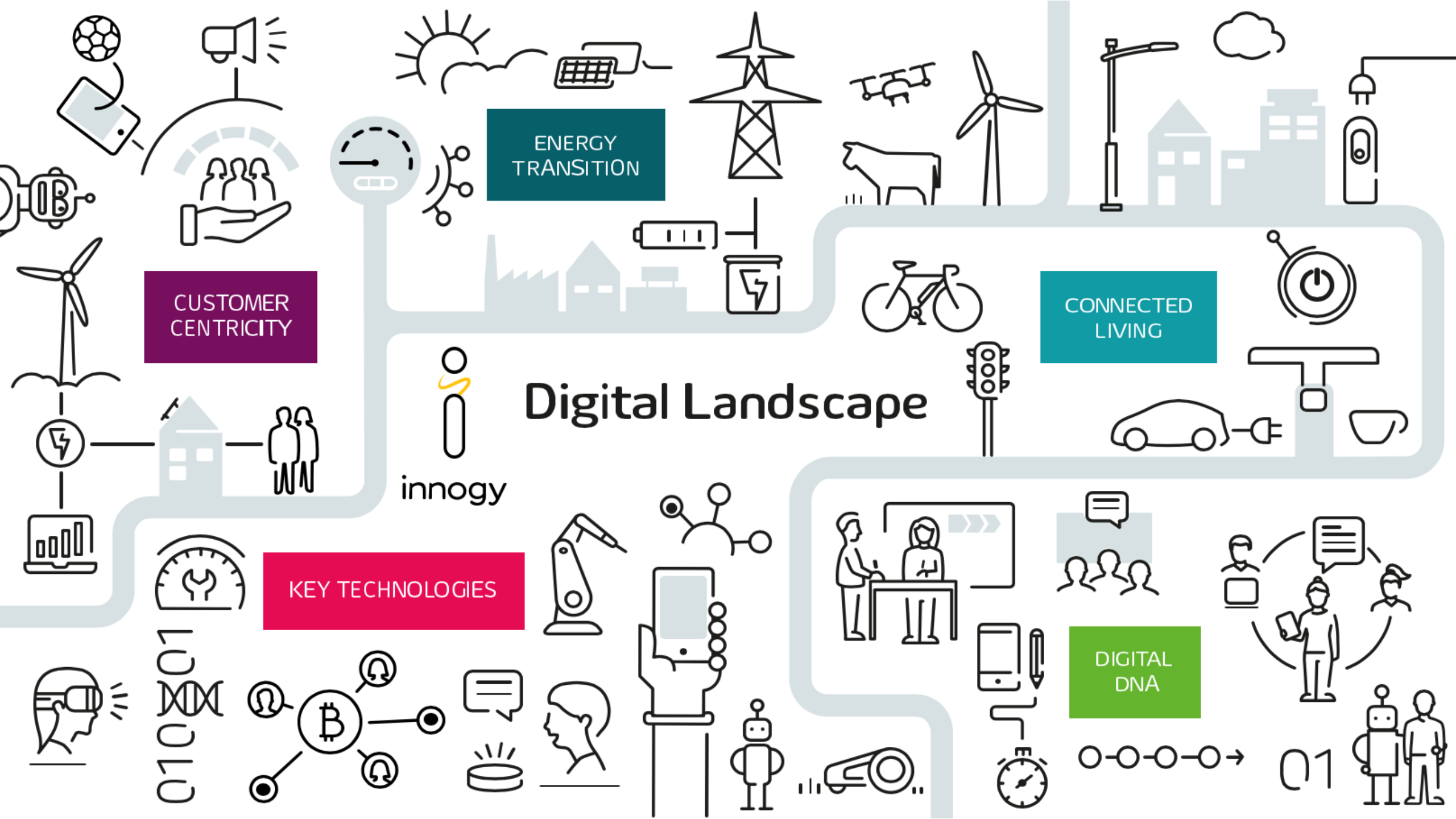
- leading European energy company
- three business areas of Renewables, Grid & Infrastructure and Retail
- supplies reliable energy at a fair price to around 16 million power customers and 7 million gas customers in 11 European countries
- number 3 provider of offshore wind power in Europe
- we are dedicated to developing so-called “smart grids” or efficient and intelligent monitoring and control systems


ENERGY TRANSITION
CUSTOMER CENTRICITY
CONNECTED LIVING
Digital Landscape
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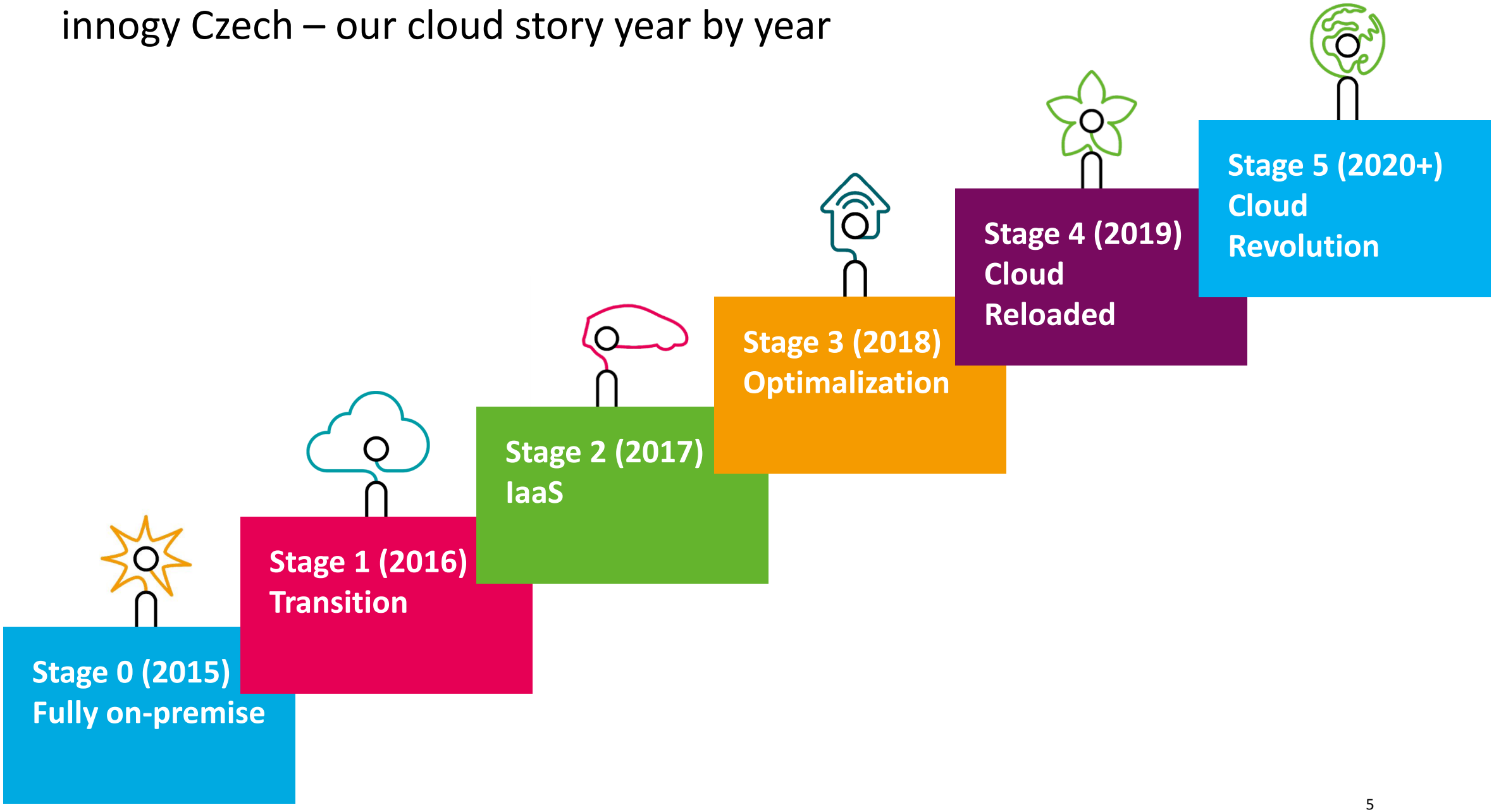
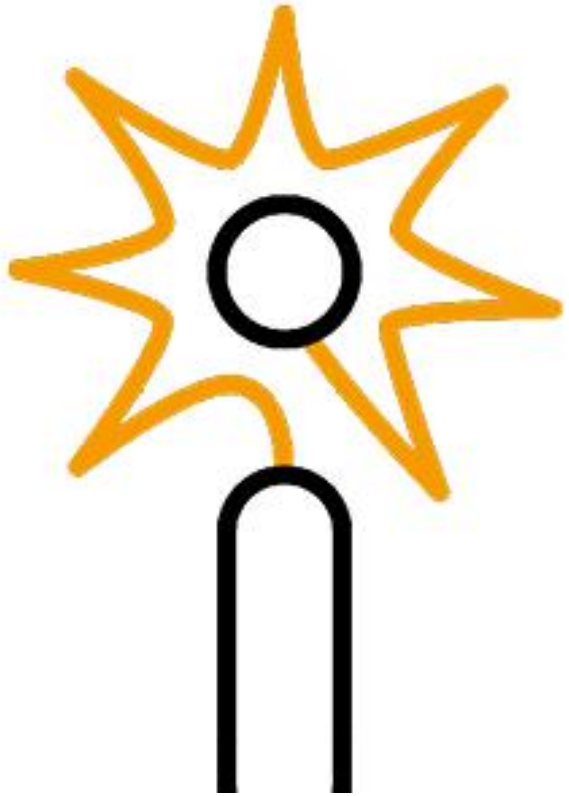
KEY TECHNOLOGIES
DIGITAL DNA

innogy Czech – our cloud story year by year



Stage 0 : On-Premise (2015)



- We hosted all our applications in a data center in Brno, Czech Republic.
- DC building was getting close to the requirement of major construction repairs. Location was in danger of potential flood risk.
- HW and SW in DC required another round of major overhaul and massive capital investment.
- We had to choose to either move to a new data center in Germany or migrate to the public cloud, which would align with the organization's cloud-first strategy.
- A decision was made and we start the migration to AWS during the year 2016.

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Stage 1 : Transition (2016)

- During the course of the year 2016, multiple waves of transitions from on-premise to AWS have been performed. (conversion from AIX to Intel)

- We decided to use Lift-and-Shift migration approach and not increase complexity by rearchitecting of the applications and used solutions.

- Over the year we did run into multiple obstacles, which caused a small delay in migration. Last planned wave was finished in Q1 of 2017. (Snowball)

- We migrated nearly all our solutions: SAP CRM, non-SAP CRMs, Web solutions, SAP ISU, SAP BW, SAP PO, SAP HR, ETRMs and many others…

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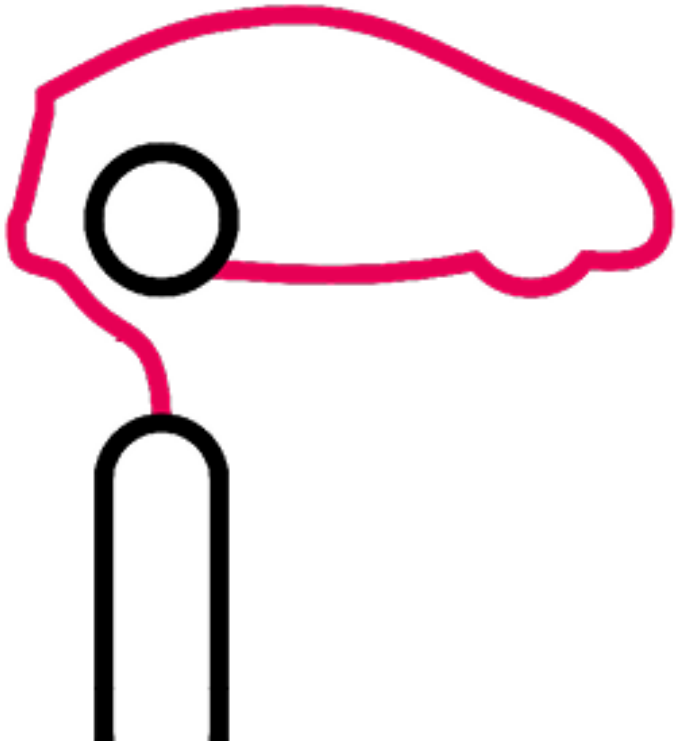
Switching from old to renewable power and storage solutions

Conventional power generation

Energy conversion with power to gas:
The natural gas network has particularly great potential for storage, which is precisely why innogy tests this in a pilot project in Ibbenbüren: a promising option for long-term storage and even more efficient use of green power.

Stage 2 : IaaS (2017)



- With completed migration, we started to see the first real benefits of cloud usage.
- We realized changes or improvements of internal processes are required and we focused on performing those.
- Proper splitting of applications and creation of cost reports per application for responsible managers.
- Transparency started to bring the interest of first application owners. We ware able to identify obsolete or not needed infrastructure.
- Usage of cloud technology definitely requires a learning curve and will not happen magically overnight.

Stage 3 : Optimization (2018)

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- With financial reporting under control, the next move was looked at optimization of most critical or expensive applications.

- Testing flexibility of cloud Akka Rightsizing (BW on HANA, instance size changes for month/year closing peaks, instance number change)
- Start of sampling options for the move from Iaas to PaaS (RDS migrations)
- POCs and Rapid Prototyping (NetApp On-TAP, Redshift, F5, NetLoad, Fortigate)

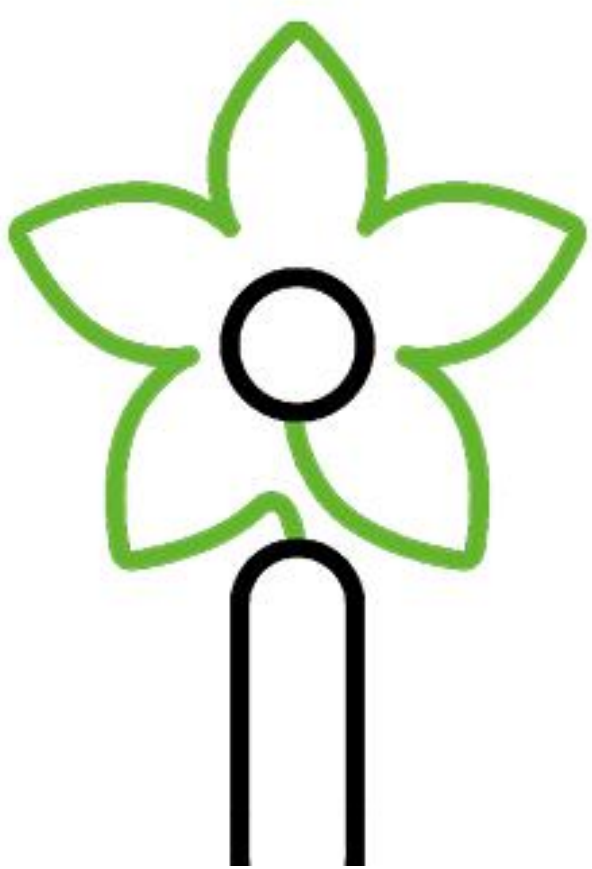
- Outstanding results achieved, 22% cost savings with same scope and quality.

There will be no energy transition without digital transformation

innogy aims to lead the green energy transition

With intelligent power grids and efficient energy storage solutions, innogy is not only safeguarding our future supply but also contributing to the energy transition in Germany and other European markets.

Stage 4 : PaaS (2019)



- Replace databases running in an instance with RDS (where possible - SAP?).
- Continue with Rightsizing thru smaller applications. Target is for Application teams to know how and why to optimize their infrastructure.
- Look at new areas which we could possibly improve with cloud solutions. (virtual desktops for customer services, AWS Connect for Call Center)
- Organization changes required for future activities in the area of DevOps or Machine Learning.

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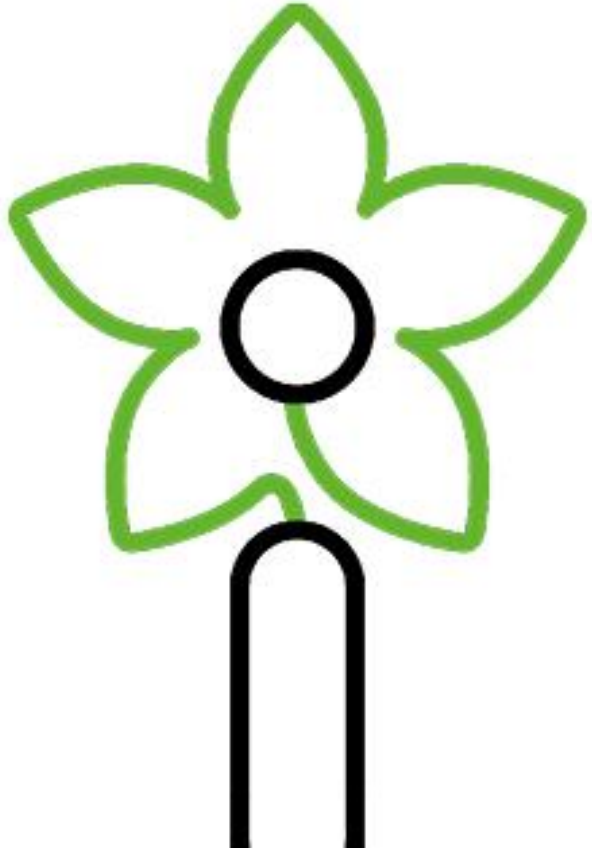
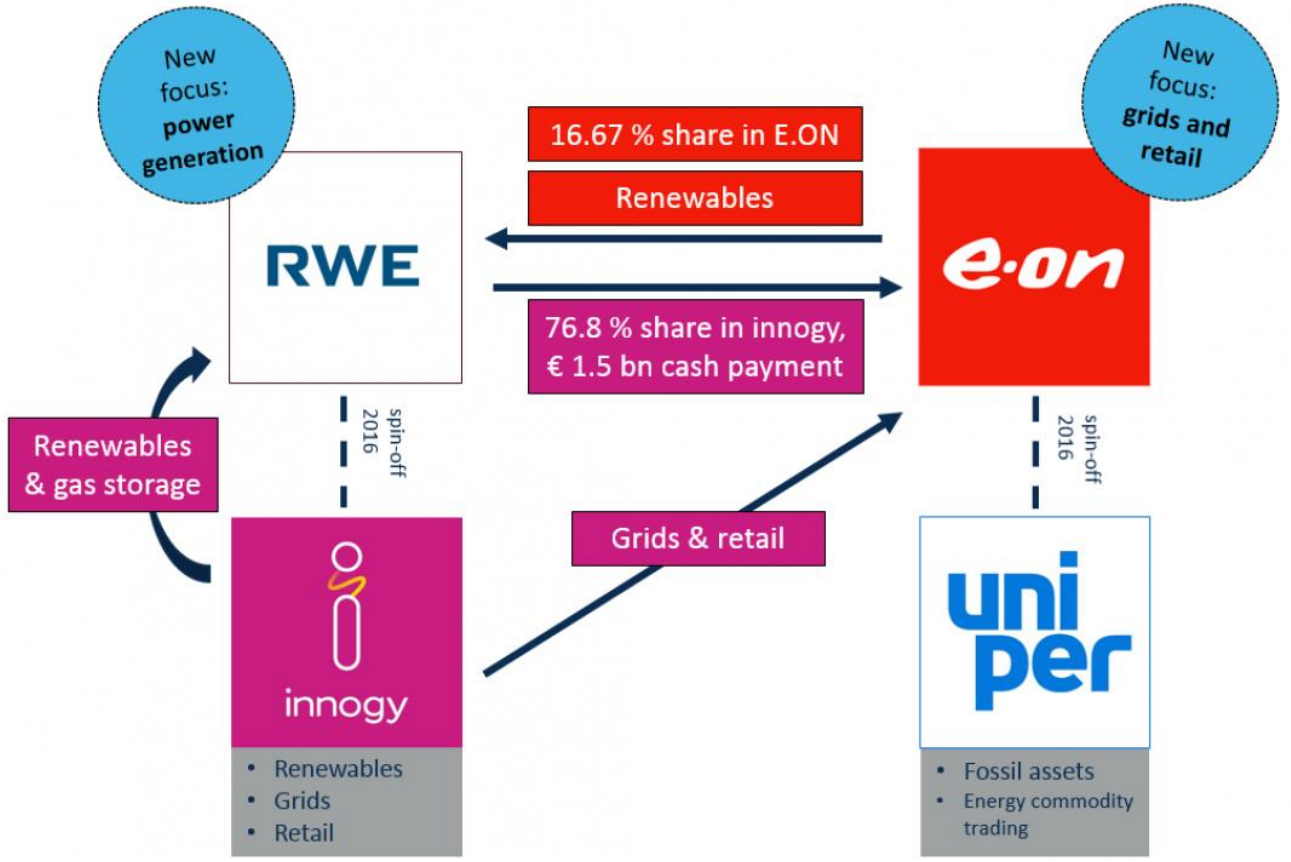
Stage 4 : AWS Reloaded





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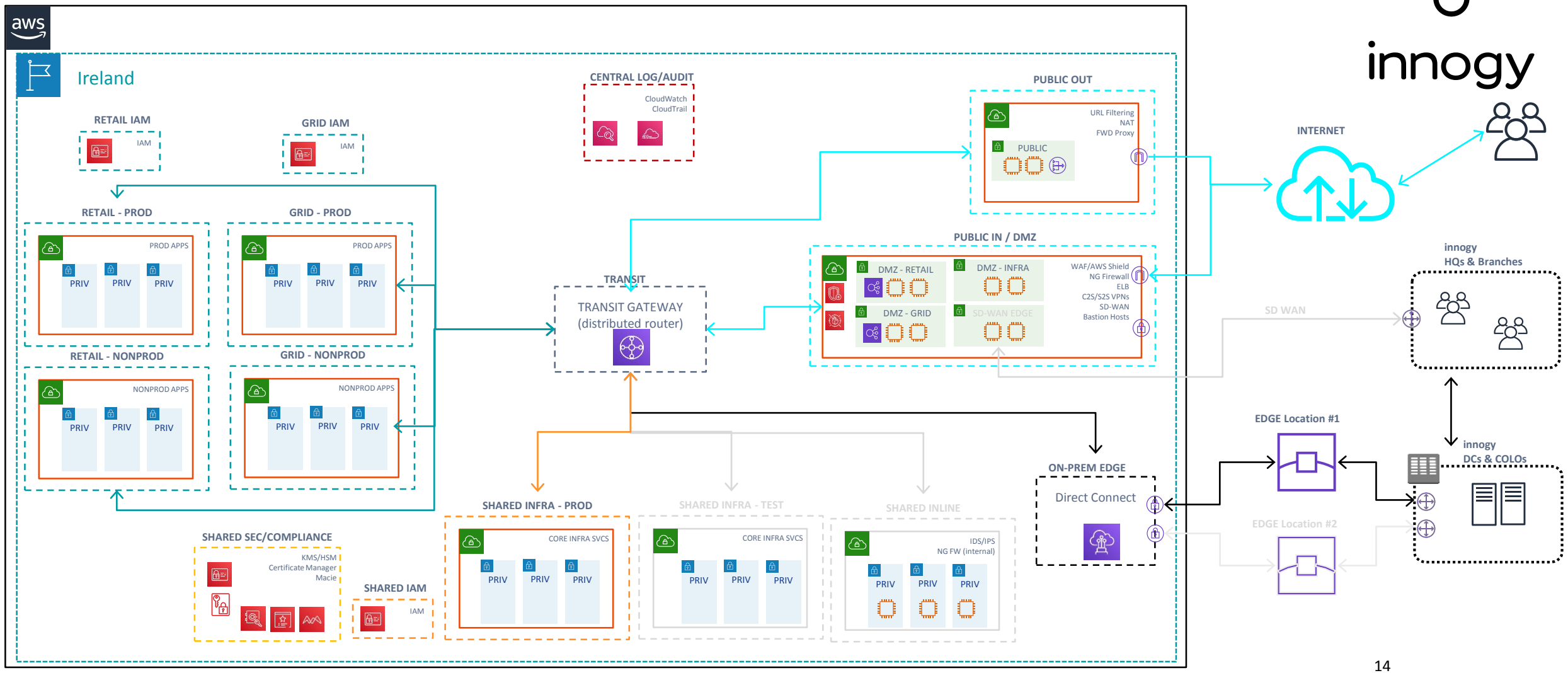

Stage 5 : AWS „Revolution“

- Optimize landscape we will have after half of the company duplication.
- More extensive usage of AWS EMR and extension of existing Machine Learning models with additional use cases.
- We want to influence the developer's mindset and utilize CI/CD and DevOps approach.
- Merge to the infrastructure of a new company owner.

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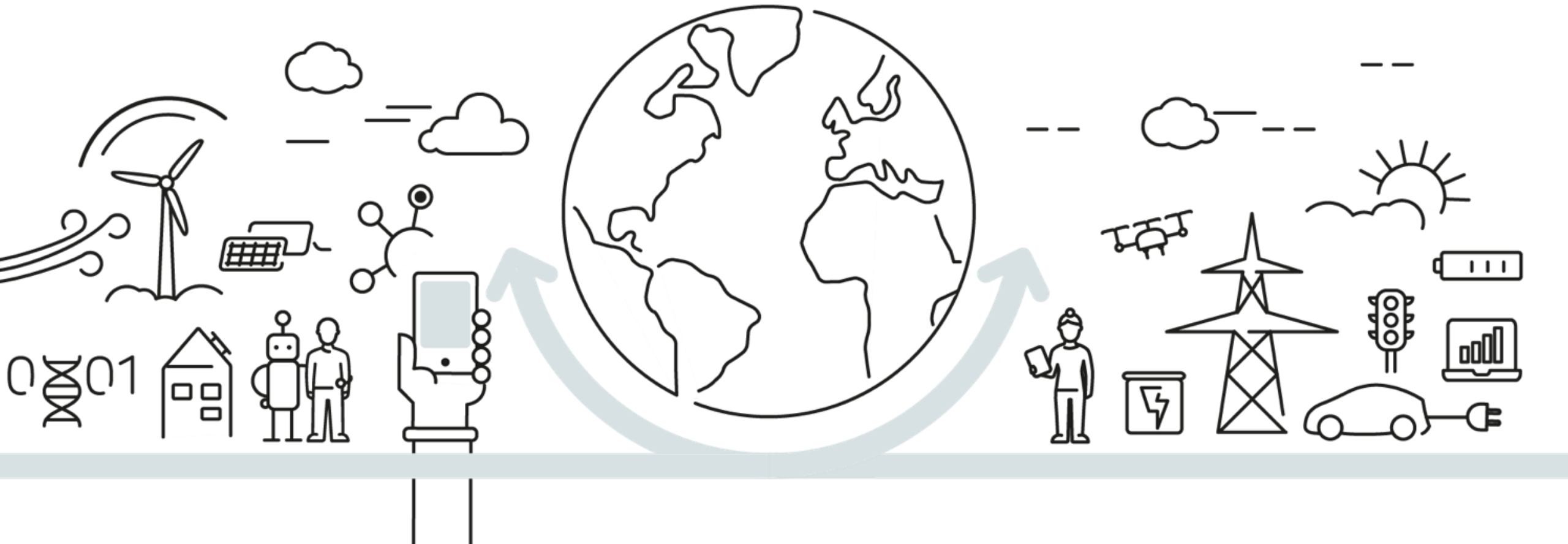
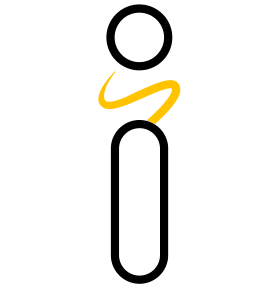
Our planet will be a better place when we create a sustainable world in which innogy inspires how people live and work.





Thank you!

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