Purpose Driven IT Transformation

Accelerating the Sustainability Shift

Sustainable IT

I&T – P&T – D&E
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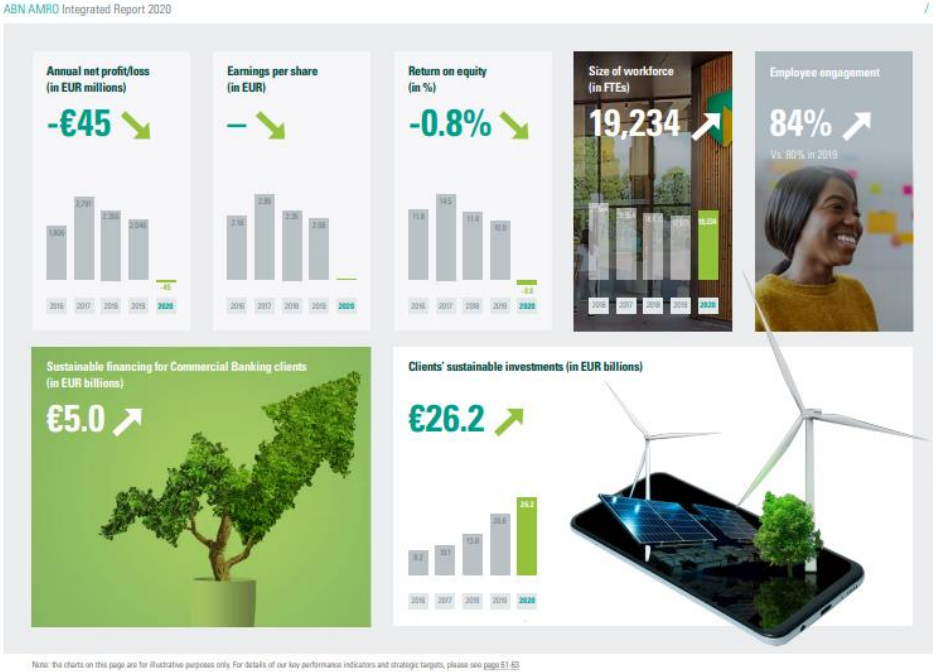
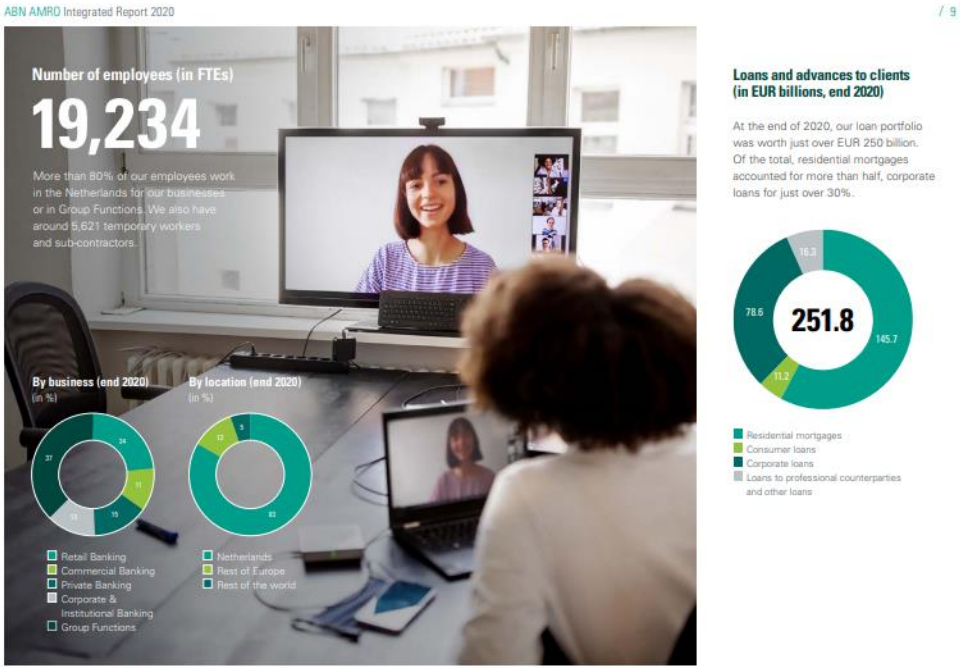
Version 0.9 - Basic
Status: Final

Audience: AMEC LEAP

About ABN AMRO - “A personal bank in the digital age”





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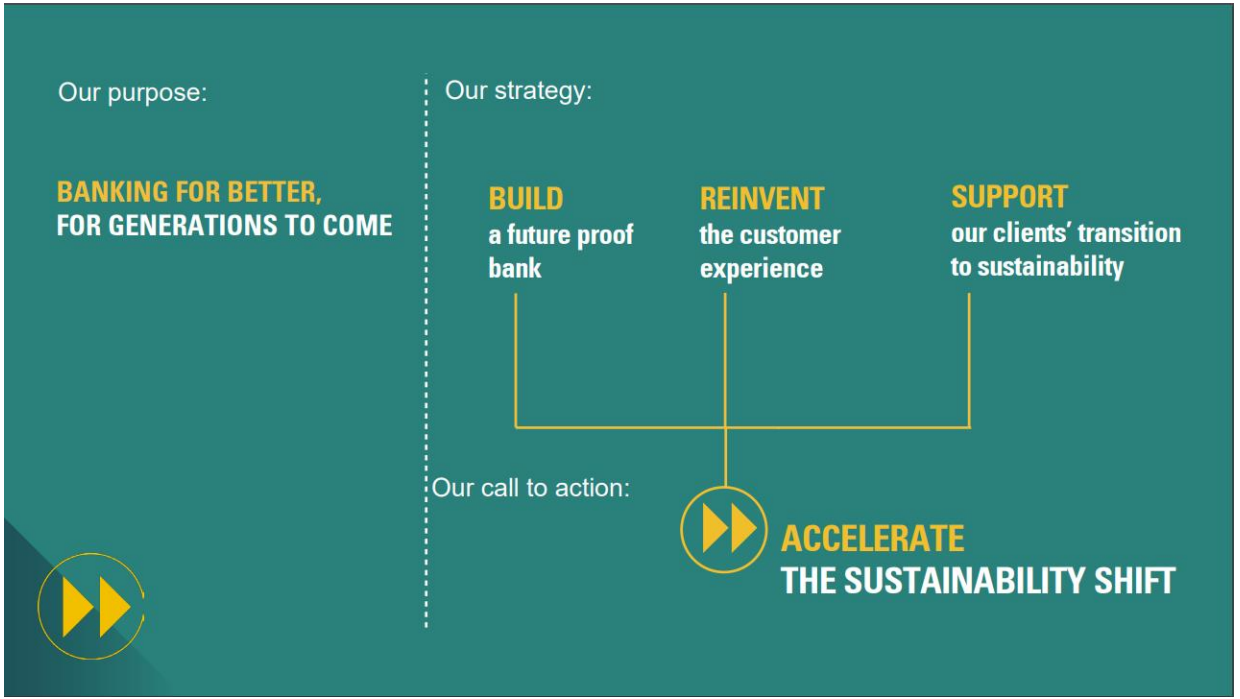
Introduction – Purpose, Strategy & Call to action

More conditions towards clients.
> When/what do we fund

More conditions towards our business
> What do we offer, how do we operate

More conditions towards our IT !
> What do we offer, how do we operate



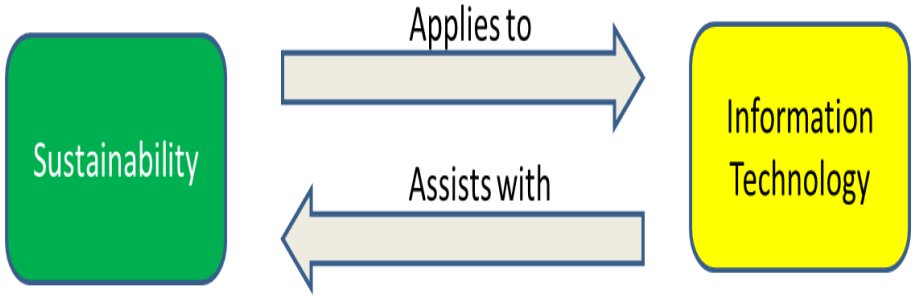
Our purpose and strategy - ABN AMRO Bank

Introduction - Abstract

- **IT Contributes to Sustainability Solutions**
- **IT is Subject to the same challenges**

Supply Efficiency
- **Emissions**
  - **(Reduce)**
- **Energy**
  - **(Renewable)**
- **Materials**
  - **(Circular)**

Demand Efficiency
- **Reductions**
  - **(Lowering Demand/Usage)**
- **Product-Service Efficiency**
  - **(Extended/Optimized use)**



Status - Sustainable IT

Added with?

Initial

Data Center efficiency

Renewable Energy

Next

- **Sustainable IT Product Selection**
- **Sustainable IT Designs**
- **Sustainable Consumption**
- **Sustainable Decommisioning**

IT Internal Targets ***

- **50% Lowered CO2 footprint by 2025***
- **100% Circular IT Assets by 2030****

Now measuring/reporting on

- **Energy/CO2 footprint**
- **IT Asset circularity levels**

* baseline 2019
** earlier if possible
*** not part of AAB impact reporting (yet)

S-Rating Used as a design driver and Rating model for IT products/workloads

S-Rating for workloads in the DC/COLO/Cloud

A sustainability rating is developed for backend (DC based) IT products

- The sustainability rating will be given to IT products in addition to the already used CIA-rating (confidentiality, Integrity, Availability)
- The sustainability rating is based on the **resource dynamics of the product/workload** and is divided into several stages
- The stages rank from 100% of the resources allocated to the workload all the time (label F) to a 100% dynamic resource allocation only when the product is in use.
- Current products/workloads can be rated and a target can be set for a future average rating on sustainability. Next to that, a minimum rating can be set as guideline for future IT products acting as **a Design Driver**.
- This is a basic/limited/start Model, looking at efficient resource usage, we are working to develop a holistic 'IT Sustainability Quality Model' (with the VU).

Sustainability Rating – S

Enhancement to current workload classification structure: CIA-S

Sustainability Rating (S)	Resource and Footprint Dynamics Archetypes / Characteristics Applicable on Product/Workload and/or Business process level	Typical / background
0 Label A	**'Always-off or default-off'** Resources scaling back to 0, when no workload present/needed. Footprint 100% dynamic when workload in use (autoscaling *)	Excl. listener/orchestrator/backup Compute scaling down to 0 Data scaling down to 0 *Driven by sessions/transactions/analytics/etc.
1 Label B	**'Always-off or default-off'** Resources not scaling back to 0, when no workload present/needed. Footprint 100% dynamic when workload in use (autoscaling *)	Excl. listener/orchestrator/backup Compute scaling down to 0 Data not scaling down to 0 (persistent Data footprint remains)
2 Label C	**'Partly-off' -** minimal 3 of 3: 1. No permanently allocated OTA Footprint 2. No permanently allocated DR Footprint 3. No permanent allocated Peak load Footprint	Additional resources reside in consumable platform(s) Typical Bursting / On demand provisioning
3 Label D	**'Partly-off' -** minimal 2 of 3: 1. No permanently allocated OTA Footprint 2. No permanently allocated DR Footprint 3. No permanent allocated Peak load Footprint	Additional resources reside in consumable platform(s) Typical Bursting / On demand provisioning
4 Label E	**'Partly-off' -** minimal 1 of 3: 1. No permanently allocated OTA Footprint 2. No permanently allocated DR Footprint 3. No permanent allocated Peak load Footprint	Additional resources reside in consumable platform(s) Typical Bursting / On demand provisioning
5 Label F	**'Always-on or Default-on'** All resources permanently allocated and active. Footprint 100% all the time (incl. DR/Peakload/OTA)	All capabilities/capacities (e.g. resources) always allocated and active.

WvdZee Febr. 2020

Toolbox - Sustainability measures can be found at every level of the IT stack.

Sustainability measures

WvdZee

IT stack	Possible measures
Applications	Shared functions (SaaS, 3rd party API) Rationalisation of applications
Analytics	Limit AI/ML to necessary Smart and efficient algorithms
Data	Smart data management Sharing, deduplication, clean, tiering
Software	Cloud native software design Efficient programming, code re-use
Architecture	Event driven architecture, Microservices, Loosely coupled architecture
Infrastructure	Serverless containers (as a Service) Processors (CPU vs GPU vs TPU vs QC)
Data centres / Hardware	% green energy and reuse of heat Shared and refurbished assets, DC PUE
Change management	Turn off DTA environments Limit number of changes

Toolbox draft = In Development