



Potentials and challenges: Digitalisation for resource efficiency

A report for the Federal Ministry for Economic Affairs and Climate Action



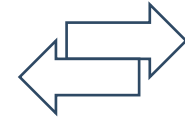
Ways to enhance resource efficiency and circularity



USE LESS



MULTIPLE USE



SUBSTITUTE

Process

material savings +
waste avoidance

reuse +
recycling

new/exchanged
material selection

Product-
design

durability, reparability
material-/energy efficiency

recyclability,
upgradeability

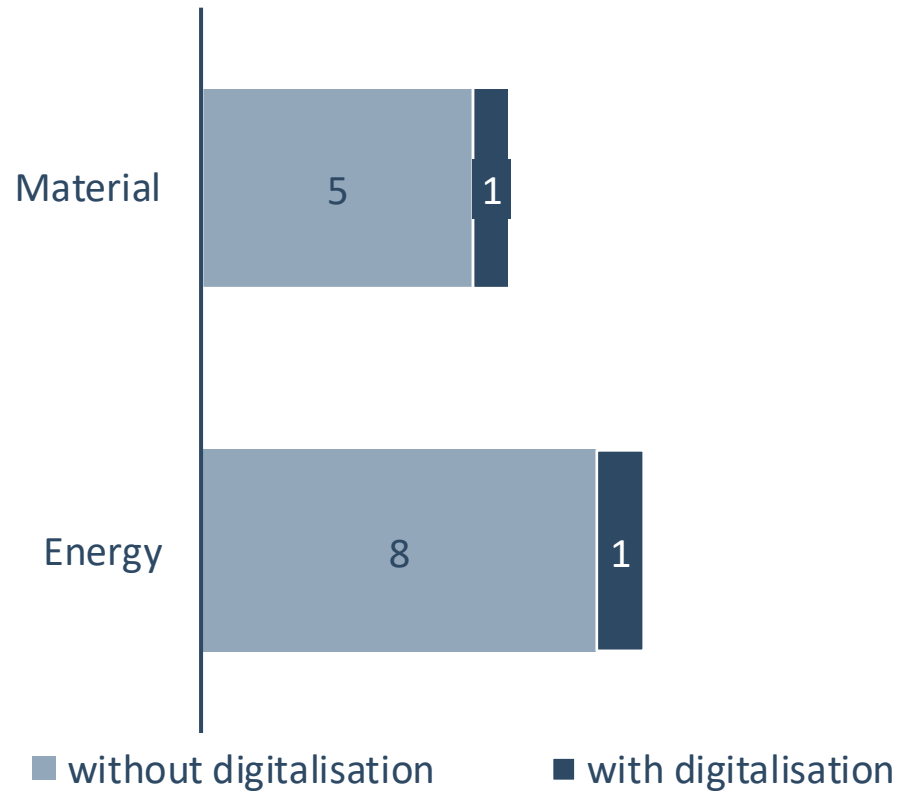
low problem substance content,
alternative raw materials
(renewable/recycled)

Source: Neligan et al. (2021)

Potential: 1 Percent of industrial value added

Industry, weighted with turnover

Savings (last 5 years), in %



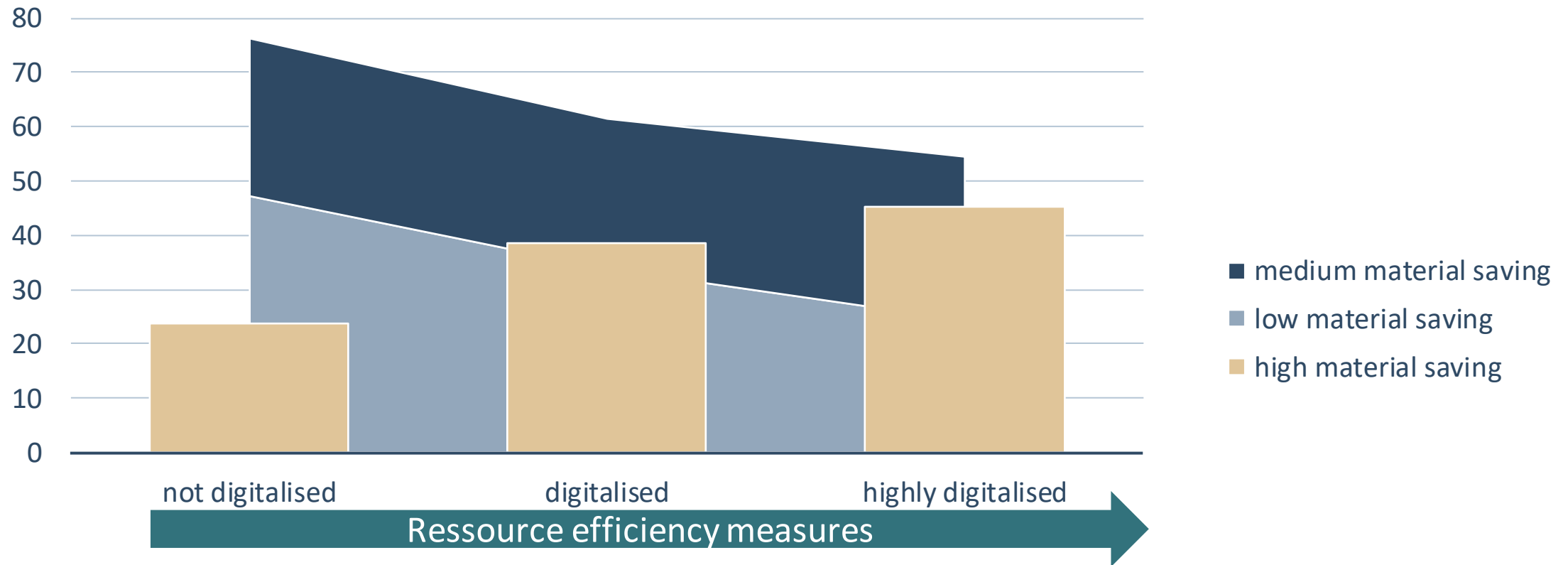
Savings potential, in %



Source: Neligan et al. (2021); Basis: IW-Zukunftspanel (2020), own calculations; extrapolation based on BGR (2019)

Digitalisation: Enabler for resource efficiency

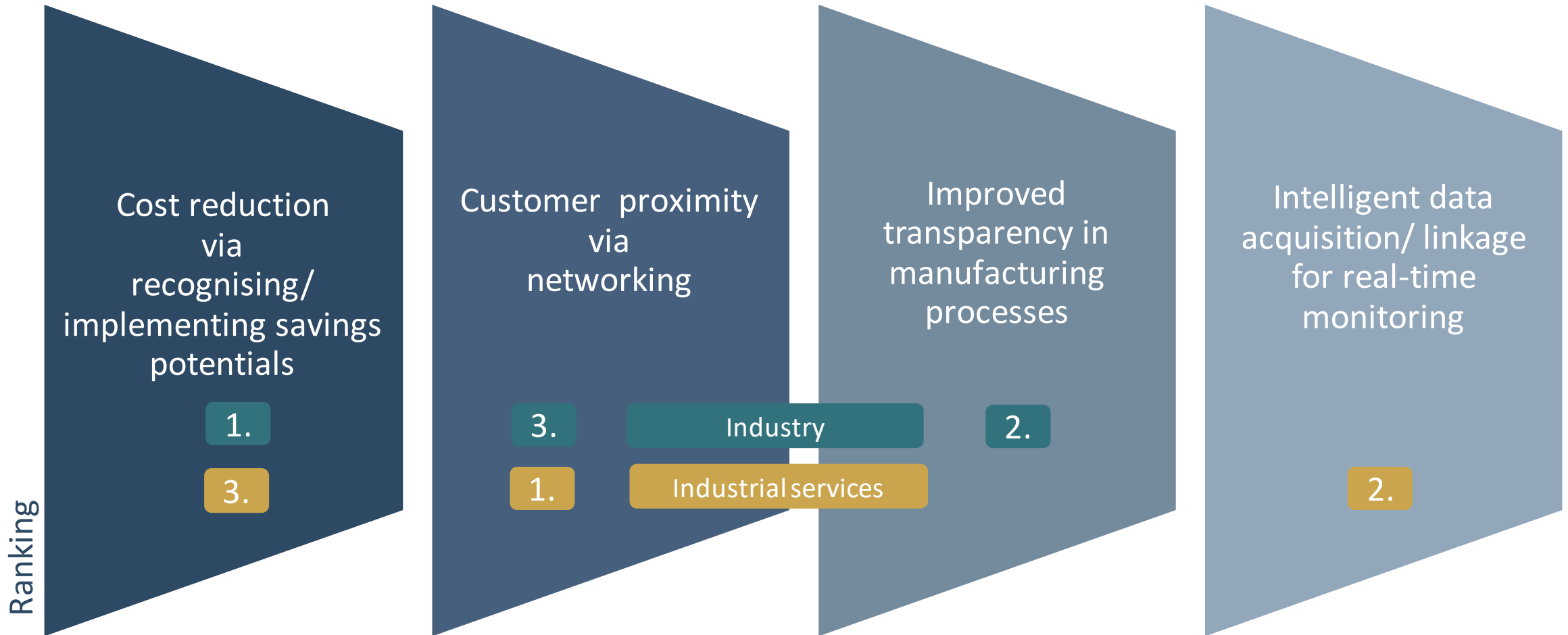
in percent of companies by material savings success, total



Typification of companies by degree of digitalisation in resource efficiency measures, in percent of companies by material savings success in the last 5 years: total: industry + industrial services providers
Source: Neligan et al. (2021); Basis: IW Zukunftspanel (2020), own calculations

Why use digitalisation for resource efficiency?

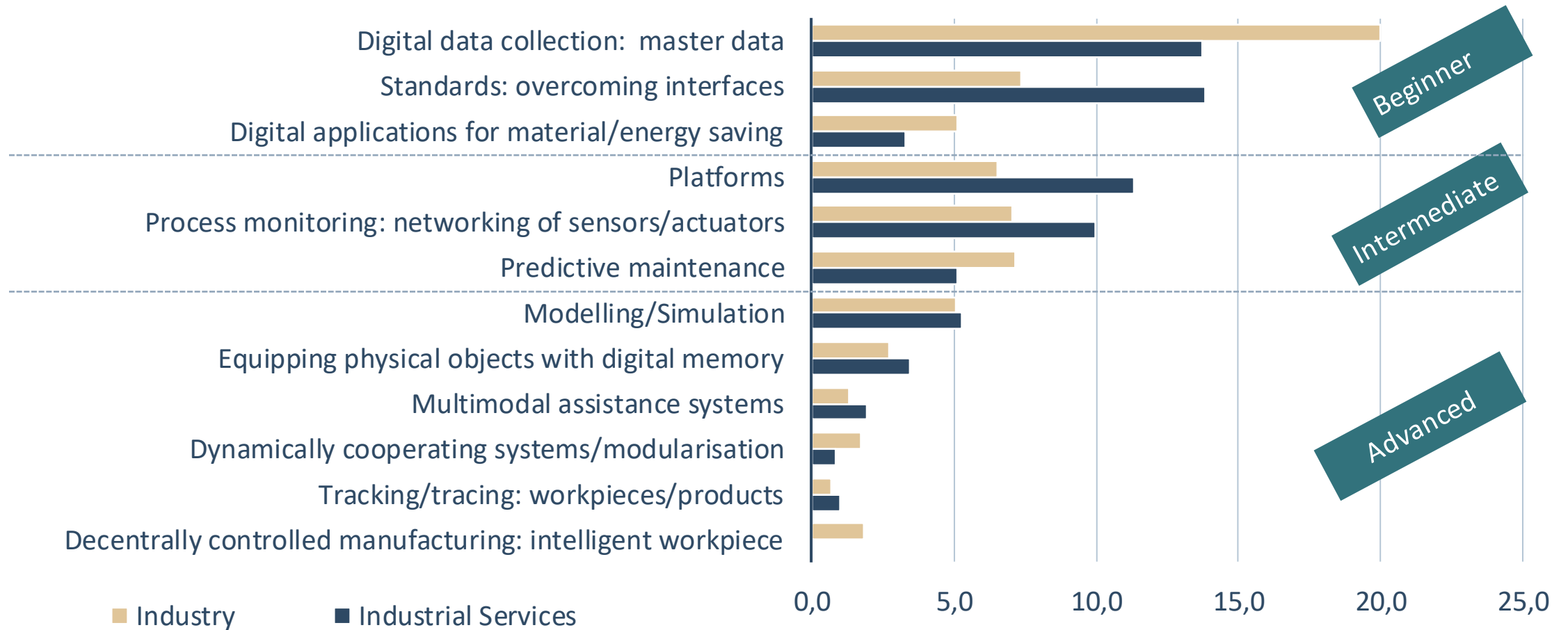
Top-3 advantages according to a company survey, ranking



Source: Neligan et al. (2021); Basis: IW-Zukunftspanel (2020), own calculations

Resource efficiency: small steps towards more digitalisation

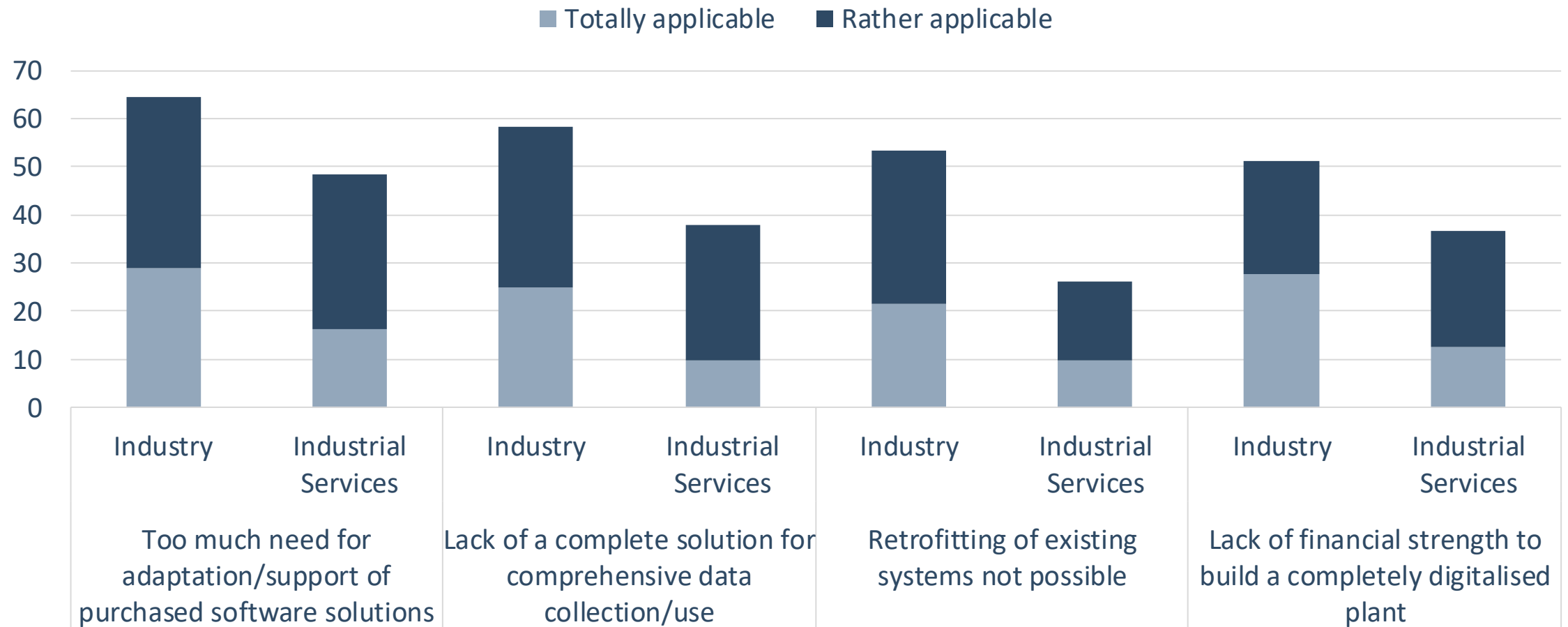
Digital tools, only "to a large extent" in percent of companies by sector



Only companies with digitalised resource efficiency measures
Quelle: Neligan et al. (2021); Basis: IW-Zukunftspanel (2020), own calculations

Lack of complete solutions, retrofittability + financial strength

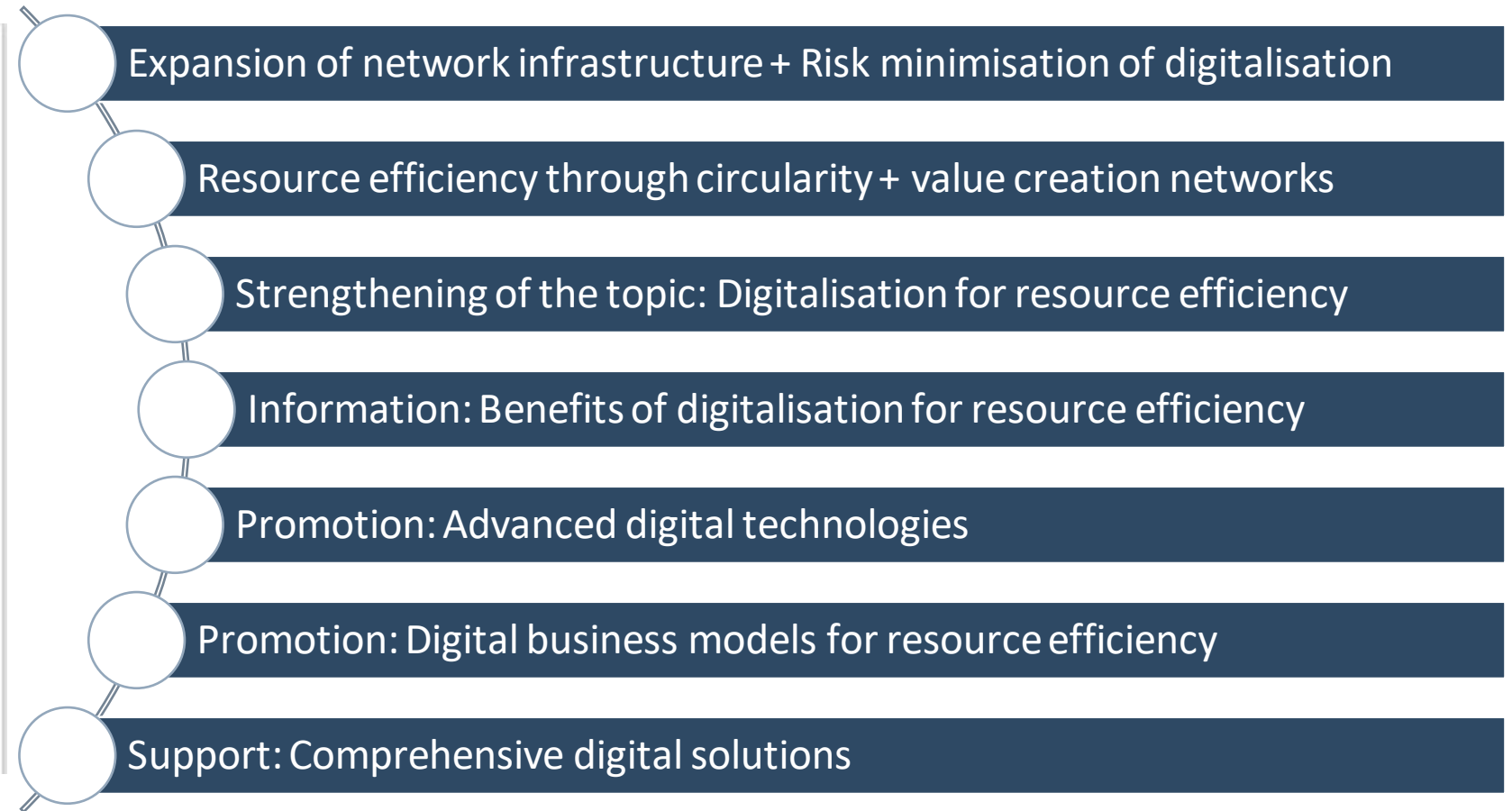
Challenges, in percent of companies by sector



Source: Neligan et al. (2021); Basis: IW-Zukunftspanel (2020), own calculations

Linking, knowledge transfer, infrastructure + competences

7 Goals - Recommendations for policy action



Quelle: Neligan et al. (2021)



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