The Future of Controlling

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Excellence in Management Education

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Finance as a latecomer: We have proposed five hypotheses …

		In the perception of the controllers surveyed …
H1: Most controlling functions are not adequately prepared for digital disruption.	←	▪ only 21% of controlling functions have a clear and coherent strategy for digitalization ▪ only 25% of controlling functions invest sufficiently in digitalization.
H2: In most companies, systems and data are not ready for the future.	←	▪ only 29% of companies have high data quality. ▪ only 17% of companies have harmonized IT systems.
H3: In most companies, controlling has only just begun to embrace the data science challenge.	←	▪ only 22% of companies with data scientists employ them in the controlling function. ▪ only in 17% of companies, controllers and data scientists work closely together.
H4: In most companies, controlling does not adequately drive digitalization at the corporate level.	←	▪ only 36% of companies invest sufficiently in digitalization company-wide. ▪ only 69% of companies have a central budget for digitalization activities.
H5: In a digital world, the influence and role of controlling is at risk.	←	▪ only 56% of digital steering committees include the controlling function. ▪ in 50% of companies with a Chief Data Officer, he or she does *not* report to the CFO or Head of Controlling.

Source: Schäffer/Weber (2018)

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… and an agenda for the digital controller

Agenda for the digital controller

1 Invest in data & system quality!
- Garbage in, garbage out

2 Enable management!
- Self-service
- Digital boardroom
- Debiasing

3 Make steering more agile!
- Lean and integrated processes
- Speed matters
- Trial and error
- Campus concepts

4 Make controlling lean!
- Standardization
- Shared service & outsourcing
- Automation / Robotics

5 Be a business partner!
- Co-manage the transformation
- Challenge business model, resource allocation, incentives, and prevailing culture

6 Develop analytics!
- Big data and new metrics
- Predictive analytics
- Simulation and bandwidth forecasts

7 Develop new competencies!
- Statistics, information technology, communication and social skills

8 Challenge established controlling mindset!
- Efficiency, accounting and going concern vs. dealing with high uncertainty, cash-flows, loose control

Source: Schäffer/Weber (2016)

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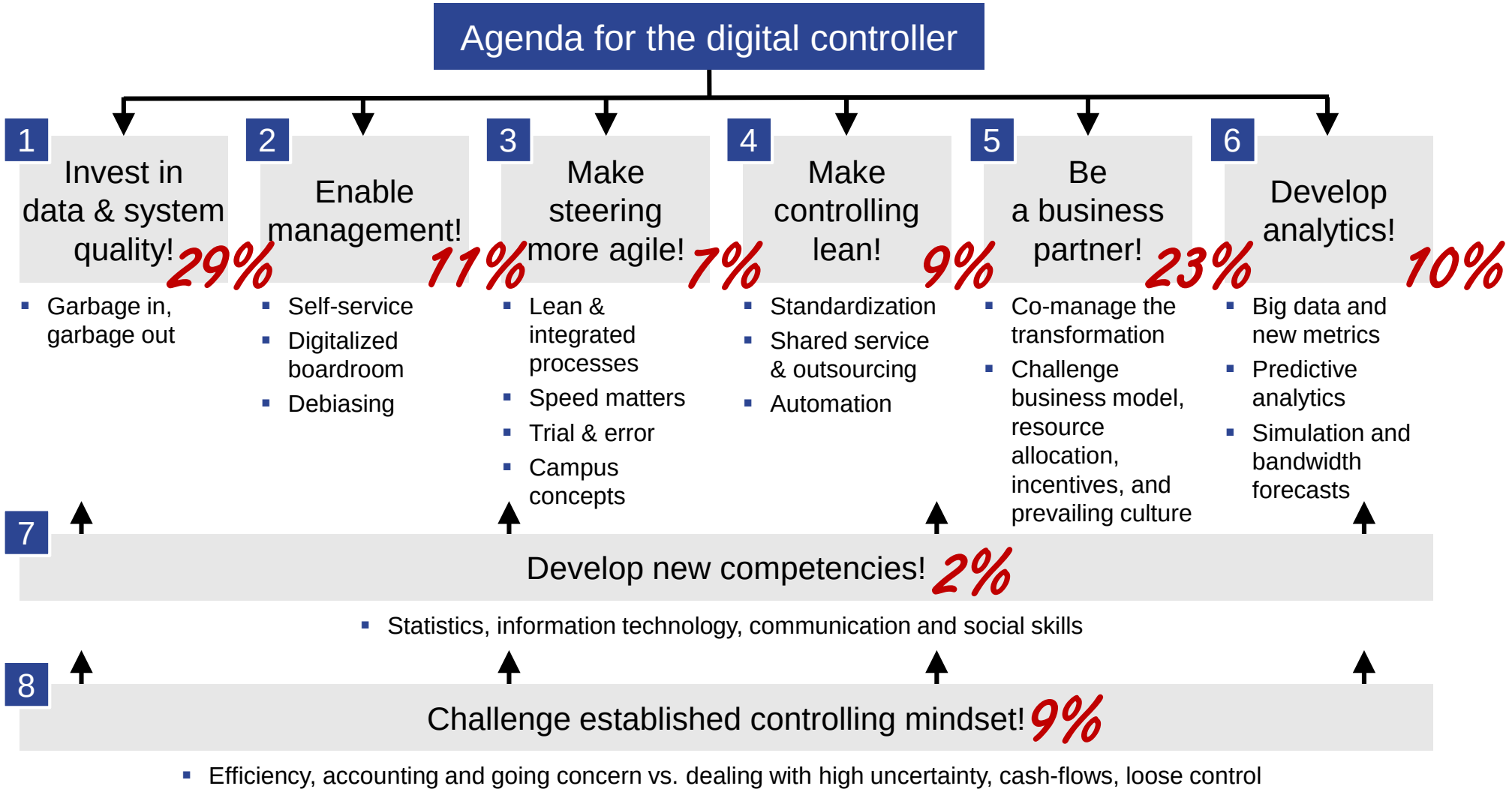
Where do participants in our workshops and seminars perceive their controlling to be strongest?



Source: Schäffer/Weber (2016); CCM People Development Seminare; CCM round table

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It’s a marathon, not a sprint.

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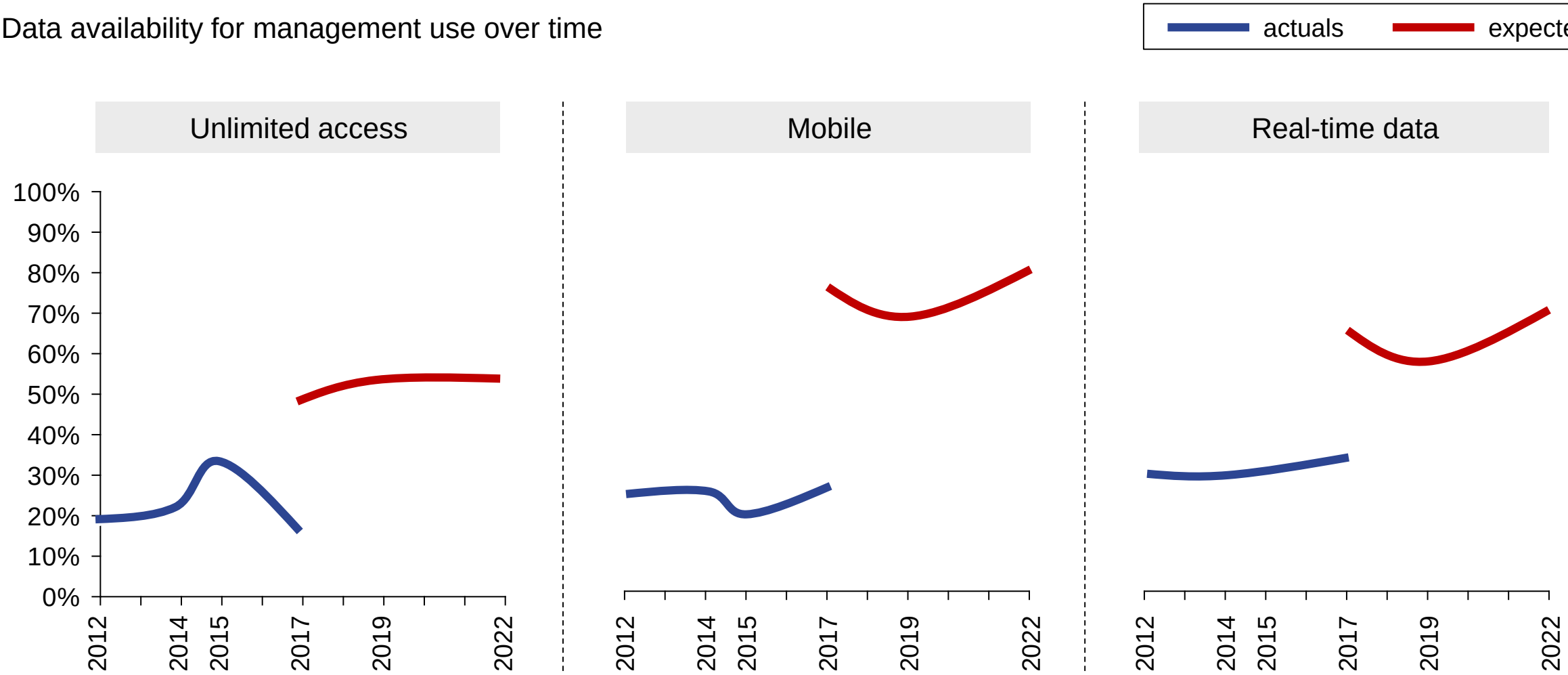
Although expectations remain high, actual changes in the extent of self-service BI use are minimal

Data availability for management use over time



Source: Schäffer/Weber (2018)

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What can be automated, will be automated.

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A lot of traditional controller tasks will disappear: whatever can be automated, will be automated!

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Efficiency heat map: Standardization, shared service use, and automation for main controlling processes (values 6 and 7)

	Today			Expected in five years		
	highly standardized	high shared service use	highly automated	highly standardized	high shared service use	highly automated
Management reporting	47%	15%	18%	84%	42%	67%
Cost accounting	47%	21%	20%	80%	46%	65%
Operational planning & budgeting	46%	13%	7%	86%	22%	50%
Financial forecasting	38%	12%	10%	84%	23%	55%
Risk management	31%	12%	5%	61%	21%	35%
Mid- and long-term planning	28%	13%	4%	63%	17%	24%
Project & investment controlling	19%	9%	3%	63%	21%	29%
All processes	37%	13%	10%	75%	27%	46%

- Standardization drives automation drives efficiency.
- The use of shared services is only expected to increase at a comparatively moderate rate.
- General claims are not sufficient – we need process-specific analyses.
- Creativity and strategy based tasks are largely there to stay; machines and humans will continue to interact.

Source: Schäffer/Weber (2018)

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It is not only about efficiency – predictive analytics have significant potential to increase forecasting effectiveness

Characteristics of a good forecast	Are you happy?	Impact of predictive & prescriptive analytics on forecast quality	
Timely	63%	Management action triggered when KPIs no longer fall within pre-determined range.	
Actionable	48%	Driver trees provide explicit patterns of causality. Prescriptive analytics can help to identify initiatives.	
Accuracy*	72%	Impact of biases and opportunistic behavior is minimized.	
Aligned	46%	———	
Cost effective	44%	Automation frees up significant resources.	

* accurate enough and free of systematic error

Source: WHU Controller Panel (2016); Morlidge/Player (2010); CTcon

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Competencies & Roles

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Which competencies does the controller of the future need? The WHU Delphi Study has identified six competency areas

Finance & Controlling Expertise

- Expertise in company's finance & controlling processes
- Expertise in finance & controlling related concepts and frameworks
- Knowledge of financial metrics
- Knowledge of non-financial metrics
- Expertise in financial accounting

Technology & Analytics Expertise

- Expertise in IT systems and data architecture
- Expertise in data sourcing and data preparation
- Expertise in data visualization
- Expertise in business intelligence tools (reporting, analytics, and planning tools)
- Expertise in statistical model building
- Expertise in statistical model interpretation
- Expertise in programming
- Knowledge of digital technologies and trends
- Expertise in data protection and data security

Management Expertise

- Expertise in project management
- Expertise in change management
- Expertise in agile techniques

Business Acumen

- Knowledge of company's business model, value drivers, and industry
- Knowledge of success factors of traditional business models
- Knowledge of success factors of digital business models
- Strategic thinking

Communication & Collaboration Skills

- Presentation and storytelling skills
- Collaboration and discussion skills
- Negotiation skills
- Leadership and motivation skills
- Coaching and mentoring skills
- Assertiveness

Personal Competencies

- Analytical thinking
- Problem solving orientation
- Critical thinking and reflection
- Personal integrity and backbone
- Ambiguity tolerance and openness
- Execution skills
- Perseverance and grit

Source: Schäffer et al. (2019)

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New tasks require new competencies. However, most of the future competencies identified in the WHU Delphi Study are not entirely new

Required competencies today

- Expertise in company's finance & controlling processes
- Knowledge of financial metrics
- Expertise in financial accounting
- Presentation and storytelling skills
- Negotiation skills
- Personal integrity and backbone
- Perseverance and grit

Change in level or type of requirement

- Expertise in finance & controlling related concepts and frameworks
- Knowledge of non-financial metrics
- Expertise in IT systems and data architecture
- Expertise in data sourcing and data preparation
- Expertise in data visualization
- Expertise in business intelligence tools (reporting, analytics, and planning tools)
- Expertise in project management
- Expertise in change management
- Knowledge of company's business model, value drivers, and industry
- Knowledge of success factors of traditional business models
- Collaboration and discussion skills
- Leadership and motivation skills
- Coaching and mentoring skills
- Assertiveness
- Analytical thinking
- Problem solving orientation
- Critical thinking and reflection
- Execution skills
- Strategic thinking
- Ambiguity tolerance and openness

New requirements

- Expertise in statistical model building
- Expertise in statistical model interpretation
- Expertise in programming
- Knowledge of digital technologies and trends
- Expertise in data protection and security
- Expertise in agile techniques
- Knowledge of success factors of digital business models

Source: Schäffer et al. (2019)

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The WHU panelists consider themselves highly competent in some, but by far not all competencies identified in the WHU Delphi Study

Finance & Controlling Expertise

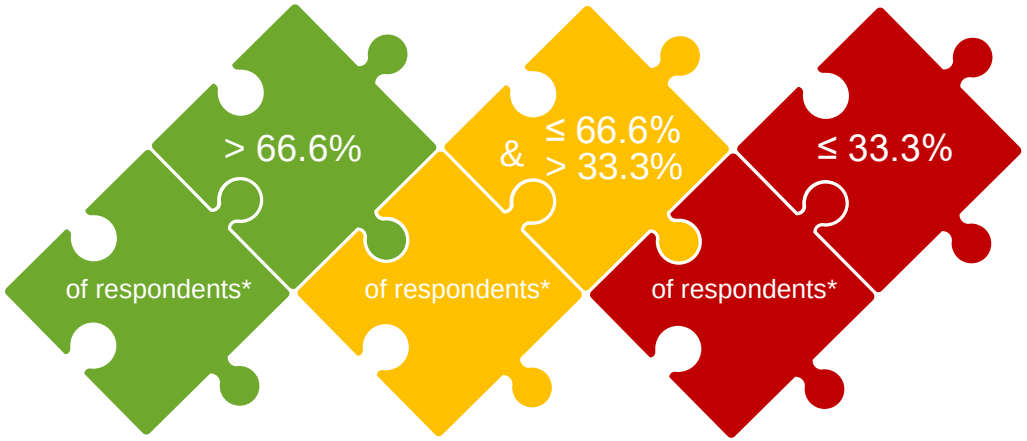
- Expertise in company's finance & controlling processes
- Knowledge of financial metrics
- Expertise in finance & controlling related concepts and frameworks
- Expertise in financial accounting
- Knowledge of non-financial metrics

Technology & Analytics Expertise

- Expertise in data visualization
- Expertise in data preparation
- Expertise in business intelligence tools (reporting, analytics, and planning tools)
- Expertise in IT systems
- Knowledge of digital technologies and trends
- Expertise in data protection & data security
- Expertise in data architecture
- Expertise in statistical model interpretation
- Expertise in data sourcing
- Expertise in statistical model building
- Expertise in programming

Management Expertise

- Expertise in project management
- Expertise in change management
- Expertise in agile techniques



Business Acumen

- Knowledge of company's business model, value drivers, and industry
- Knowledge of success factors of traditional business models
- Strategic thinking
- Knowledge of success factors of digital business models

Communication & Collaboration Skills

- Collaboration skills
- Discussion skills
- Presentation and storytelling skills
- Coaching and mentoring skills
- Assertiveness
- Leadership and motivation skills
- Negotiation skills

Personal Competencies

- Analytical thinking
- Problem solving orientation
- Personal integrity and backbone
- Critical thinking and reflection
- Perseverance and grit
- Execution skills
- Ambiguity tolerance and openness

Source: WHU Controller Panel (2019)

*consider themselves "highly competent" (values 6 and 7)

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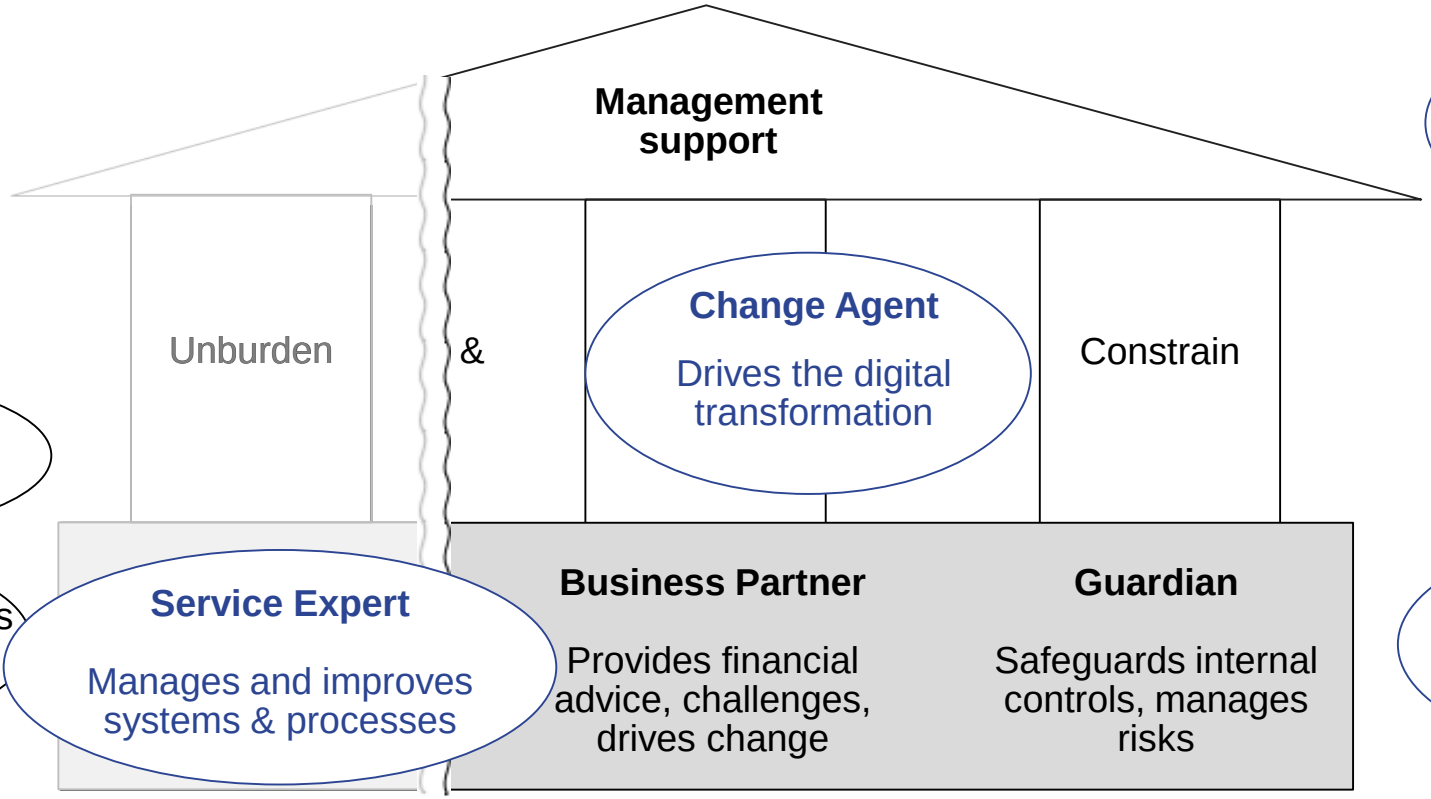
Are we asking too much? Is the controller of the future required to be a jack of all trades, master of none (or to put it in German, an "egg-laying, milk-bearing wooly sow“)?

Source: Marketing campaign by KSP Krieg Schlupp Partner for Volkswagen (2016)

“Business as usual” is not an option: role making is key!



Reporting as we know it will largely disappear.

Standardized processes will be centralized and automated.

Predictive analytics will result in largely automated forecasts.

Planning w… leaner pr… forms of … dialogue.

Analytics translator

Bridges data science and decision making

Pathfinder

Bridges business with data scientists, scouting trends and technologies

Decision Scientist

Combines data science, business acumen and communication skills

Data Scientist

Conducts analyses to derive data-driven insights

Source: Weber/Schäffer (2008; 2016); Schäffer/Weber (2015)

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The WHU Delphi Study identified a total of nine *potential* future controller roles; some of which are closely related

Person ≠ Role

Service Expert

Ensures execution, coordination, and continuous improvement of operational controlling processes.

↑

Scorekeeper

Conducts routine tasks in operational controlling processes.

Functional Lead

Defines and communicates controlling policies and guidelines; provides methods and subject matter expertise.

&

Guardian

Monitors financial target achievement, risks, and opportunities; ensures compliance with guidelines.

Change Agent

Drives transformation, the use of new technologies, and the development of new business models.

Business Partner

Provides advice to managers, challenges them, and proactively works on business problems and opportunities.

Data Engineer

Ensures data quality and data governance; develops or implements reporting, analytics, and planning solutions.

Data Scientist

Conducts analyses of big data; builds and maintains statistical and machine learning models.

→

Decision Scientist

Ensures that data science addresses relevant questions and that results of big data analyses are translated into initiatives.

Source: Schäffer et al. (2019)

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Which roles are bundled and taken on by a single person? Results from the WHU Campus for Controlling

11%

Service Expert

Ensures execution, coordination, and continuous improvement of operational controlling processes.

9%

Functional Lead

Defines and communicates controlling policies and guidelines; provides methods and subject matter expertise.

11%

Change Agent

Drives transformation, the use of new technologies, and the development of new business models.

15%

Scorekeeper

Conducts routine tasks in operational controlling processes.

12%

Guardian

Monitors financial target achievement, risks, and opportunities; ensures compliance with guidelines.

25%

Business Partner

Provides advice to managers, challenges them, and proactively works on business problems and opportunities.

6%

Data Engineer

Ensures data quality and data governance; develops or implements reporting, analytics, and planning solutions.

4%

Data Scientist

Conducts analyses of big data; builds and maintains statistical and machine learning models.

7%

Decision Scientist

Ensures that data science addresses relevant questions and that results of big data analyses are translated into initiatives.

Campus results

Which controller roles are taken on by you?

Please indicate how much of your work time is spent on each role by distributing 100% between them.

Source: WHU Campus for Controlling (2019); n = 117

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Jack of all trades versus role-specific competency profiles for controllers

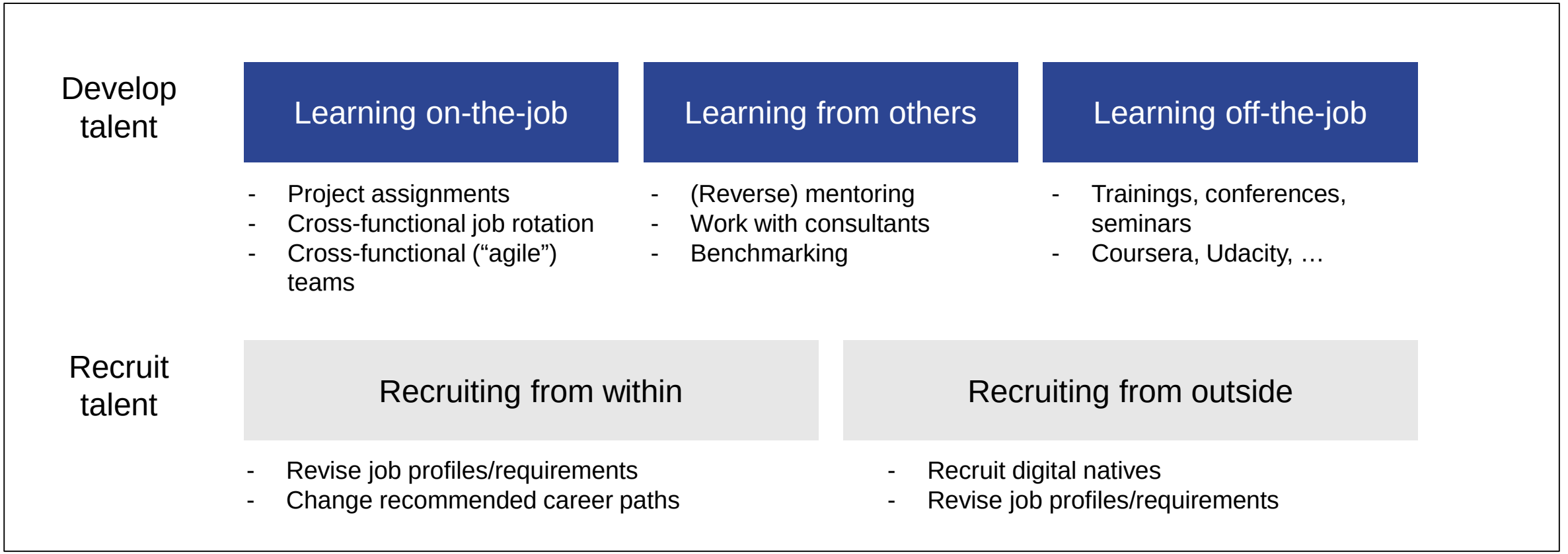
Competencies \ Roles	Score-keeper	Service Expert	Data Engineer	Guardian	Functional Lead	Data Scientist	Decision Scientist	Business Partner	Change Agent
Finance & Controlling Expertise									
Expertise in company's finance & controlling processes	Profound	Profound	Intermediate	Profound	Profound	Basic	Intermediate	Profound	Intermediate
Expertise in finance & controlling related concepts and frameworks	Intermediate	Profound	Intermediate	Intermediate	Profound	Basic	Intermediate	Profound	Intermediate
Knowledge of financial metrics	Intermediate	Profound	Intermediate	Profound	Profound	Intermediate	Intermediate	Profound	Intermediate
Knowledge of non-financial metrics	Intermediate	Intermediate	Intermediate	Intermediate	Profound	Intermediate	Intermediate	Profound	Intermediate
Expertise in financial accounting	Basic	Intermediate	Basic	Intermediate	Intermediate	Basic	Basic	Intermediate	Basic
Management Expertise									
Expertise in project management	Basic	Intermediate	Intermediate	Basic	Intermediate	Intermediate	Intermediate	Intermediate	Profound
Expertise in change management	Basic	Intermediate	Intermediate	Basic	Intermediate	Basic	Intermediate	Intermediate	Profound
Expertise in agile techniques	Basic	Intermediate	Intermediate	Basic	Basic	Intermediate	Intermediate	Intermediate	Profound
Technology & Analytics Expertise									
Expertise in IT systems and data architecture	Intermediate	Intermediate	Profound	Basic	Intermediate	Profound	Intermediate	Basic	Basic
Expertise in data sourcing and data preparation	Intermediate	Intermediate	Profound	Basic	Basic	Profound	Intermediate	Basic	Basic
Expertise in data visualization	Intermediate	Intermediate	Intermediate	Basic	Intermediate	Profound	Intermediate	Intermediate	Basic
Expertise in business intelligence tools	Intermediate	Intermediate	Profound	Intermediate	Intermediate	Profound	Intermediate	Intermediate	Intermediate
Expertise in statistical model building	Basic	Basic	Intermediate	Not at all	Basic	Profound	Intermediate	Basic	Basic
Expertise in statistical model interpretation	Basic	Basic	Intermediate	Basic	Intermediate	Profound	Profound	Basic	Intermediate
Expertise in programming	Basic	Basic	Profound	Not at all	Basic	Profound	Basic	Not at all	Basic
Knowledge of digital technologies and trends	Basic	Intermediate	Profound	Basic	Intermediate	Profound	Intermediate	Intermediate	Profound
Expertise in data protection and data security	Basic	Intermediate	Profound	Profound	Intermediate	Profound	Intermediate	Basic	Intermediate

Competencies \ Roles	Score-keeper	Service Expert	Data Engineer	Guardian	Functional Lead	Data Scientist	Decision Scientist	Business Partner	Change Agent
Business Acumen									
Knowledge of company's business model, value drivers, and industry	Intermediate	Profound	Intermediate	Intermediate	Profound	Intermediate	Profound	Profound	Profound
Knowledge of success factors of traditional business models	Basic	Intermediate	Intermediate	Profound	Profound	Intermediate	Profound	Profound	Profound
Knowledge of success factors of digital business models	Basic	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Profound	Profound	Profound
Strategic thinking	Basic	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Profound	Profound	Profound
Communication & Collaboration Skills									
Presentation and storytelling skills	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Profound	Profound	Profound
Collaboration and discussion skills	Intermediate	Intermediate	Intermediate	Intermediate	Profound	Intermediate	Profound	Profound	Profound
Negotiation skills	Basic	Intermediate	Basic	Intermediate	Intermediate	Basic	Intermediate	Profound	Intermediate
Leadership and motivation skills	Basic	Intermediate	Basic	Intermediate	Profound	Basic	Intermediate	Profound	Profound
Coaching und mentoring skills	Basic	Intermediate	Basic	Basic	Intermediate	Basic	Intermediate	Profound	Intermediate
Assertiveness	Basic	Intermediate	Intermediate	Intermediate	Intermediate	Basic	Intermediate	Intermediate	Intermediate
Personal Competencies									
Analytical thinking	Intermediate	Intermediate	Profound	Intermediate	Profound	Profound	Profound	Profound	Intermediate
Problem solving orientation	Intermediate	Profound	Profound	Intermediate	Profound	Profound	Profound	Profound	Profound
Critical thinking and reflection	Intermediate	Profound	Intermediate	Profound	Profound	Profound	Profound	Profound	Profound
Personal integrity and backbone	Intermediate	Intermediate	Intermediate	Profound	Intermediate	Intermediate	Profound	Profound	Intermediate
Ambiguity tolerance and openness	Basic	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Profound	Profound
Execution skills	Intermediate	Profound	Profound	Intermediate	Intermediate	Intermediate	Profound	Intermediate	Profound
Perseverance and grit	Intermediate	Intermediate	Intermediate	Profound	Intermediate	Intermediate	Profound	Profound	Intermediate

Required competency level (median): Not at all | Basic | Intermediate | Profound

Source: Schäffer/Brückner (2019)

Closing the gap between actual and target competencies requires a combination of different levers



Source: Schäffer/Brückner (2019); Lombardo/Eichinger (2006)

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Your feedback is welcome!

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