



Frankfurt School

Managerial Accounting

COURSE OVERVIEW

Session	Topic	Hilton / Platt
1	The Changing Role of Managerial Accounting	Chapter 1
	Basic Cost Management Concepts	Chapter 2
2	Product / Job Costing	Chapter 3
	Transfer Pricing	Chapter 13
3	Cost-Volume-Profit Analysis	Chapter 7
	Inventory Costing (Absorption vs. Variable Costing)	Chapter 8
4	Decision-Making: Relevant Costs and Benefits	Chapter 14
	Responsibility Center, Performance Measures & Controls	(Chapter 12/13)
5	Activity-Based Costing	Chapter 5
6	Activity Analysis, Cost Behavior, and Cost Estimation	Chapter 6
	Budgets – Financial Planning and Analysis	Chapter 9
7	Standard Costing and Direct Cost Variances	Chapter 10
8	Signaling Effects of Incentives	
	Sustainability and Controlling	



SIGNALING EFFECTS OF INCENTIVES

€€€

IMAGINE THE FOLLOWING SITUATION:

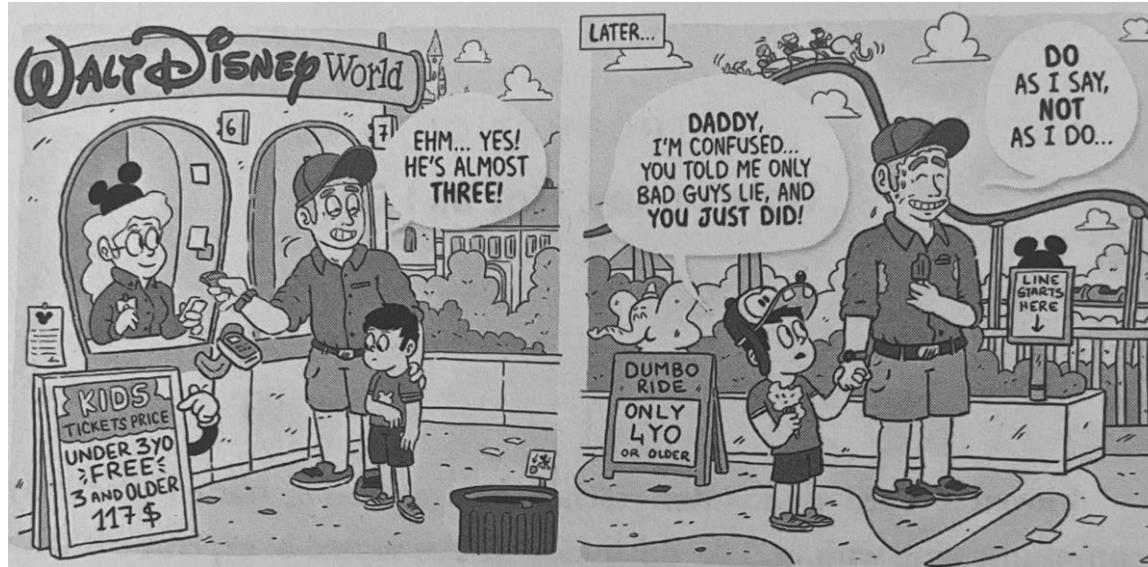


*50€ for the student with
the best exam!*

What would you think?

SIGNALS

SIGNALS ARE EVERYWHERE



Source: Uri Gneezy "Mixed Signals"

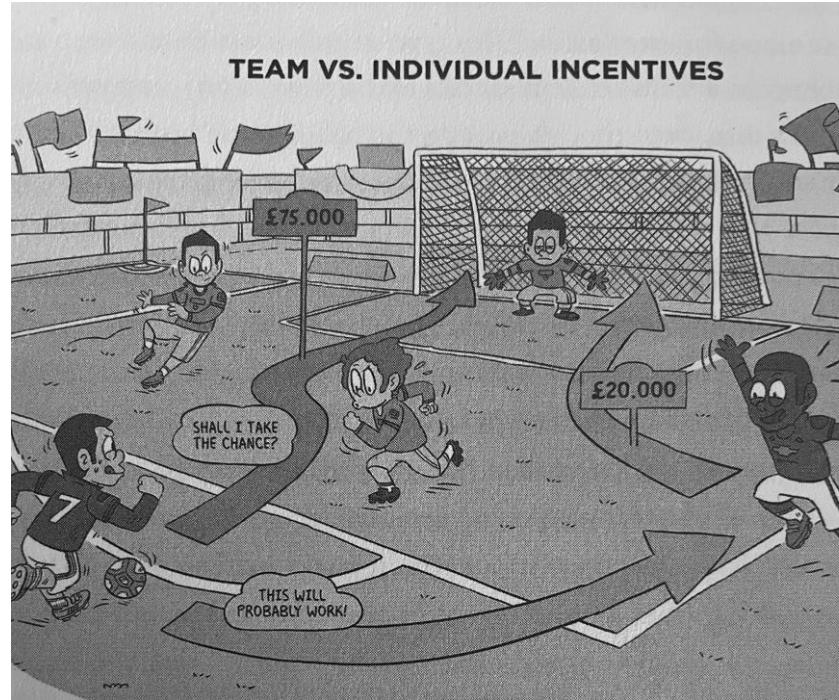
SIGNALS

MIXED SIGNALS

- **Incentivizing short-term, but encouraging long-term**
 - CEO appointments
 - Short-term bonuses but appointed for long-term success
 - Teacher bonus
 - Based on standardized (short-term) student tests
- **Incentivizing individual, but encouraging team**
 - Goal bonus for soccer player
 - Alexis Sánchez (ManU 2019) received £75,000 for a goal and only £20,000 for an assist
 - Teammate Pogba received £50,000 for a goal and only £20,000 for an assist
 - Yet, the main goal is winning the game

SIGNALS

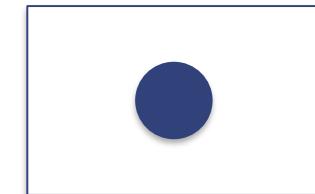
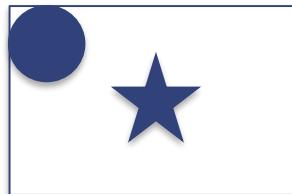
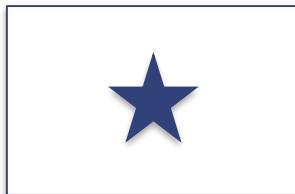
MIXED SIGNALS



Source: Uri Gneezy "Mixed Signals"

SIGNALS

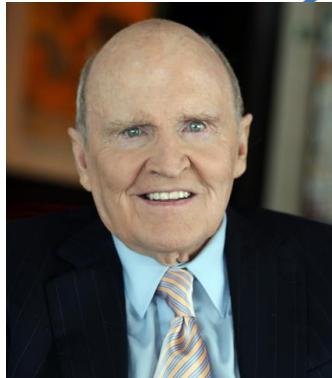
WE ALL HAVE A STORY



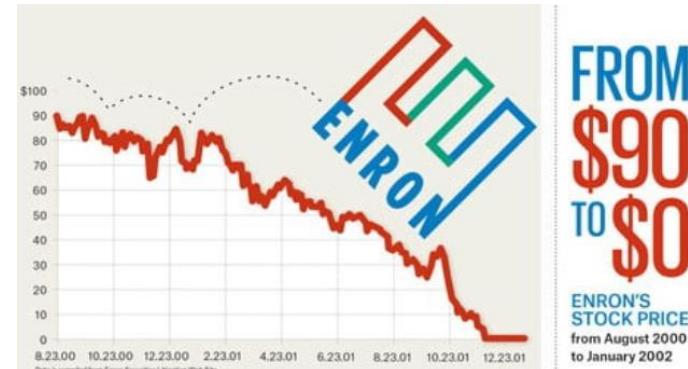
- What is your story?
- Difficulty with incentives:
we are all story tellers and we can interpret a lot in different incentives
- Maybe even well thought through incentives might leave room for interpretation

SIGNALS

...AND YOU CAN ALSO PICK A STORY (CONFIRMATION BIAS)



VS.



SIGNALS

TYPICAL TYPES OF SIGNALS

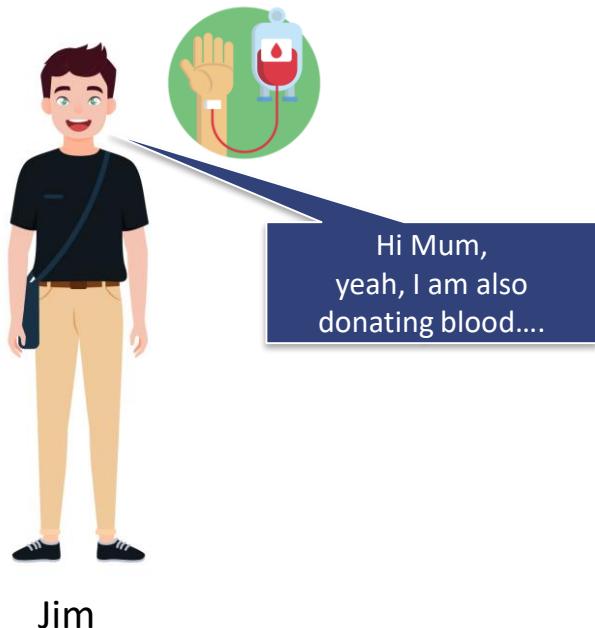
- Social signaling
 - What do others think about me?
- Self-signaling
 - What do I think about me?

INCENTIVES

- Incentives are neither good nor bad
- It depends on the attached signal
- ...and the story we tell with the signal

EXAMPLE

BLOOD DONATIONS



EXAMPLE

BLOOD DONATIONS

- Now the blood bank decides to pay \$50
- This not only affects the blood banks bank account...
- ...it also alters the signal of donating blood



I cannot tell
my mum
anymore...



It pays better
than my other
job!

What problem can result from this?

How can we solve this?

A CASE STUDY (1)

CASE: APPRENTICES

THE ENVIRONMENT

- German retail chain operating 315 grocery stores
- 1-2 apprentices in a store
- Apprentices in the store have the tasks of regular store employees
- They work 40 hours (Monday till Saturday)
- They have 1-2 day of vocational school
- Receive a fix wage of around €800 without any variable component
- They have an annual vacation of 36 days
- Store manager is direct supervisor

CASE: APPRENTICES

APPRENTICES CASE – BONUS PAYMENTS FOR ATTENDANCE



Chief Human
Resources Officer –
South Germany

I think my apprentices are staying at home although not being sick

A different region tried an attendance bonus (for all employees at once) and it seems to work....

How to proceed?

?



CASE: APPRENTICES

APPRENTICES CASE – BONUS PAYMENTS FOR ATTENDANCE

Design the intervention!

CASE: APPRENTICES

THE INTERVENTION

Attendance Bonus

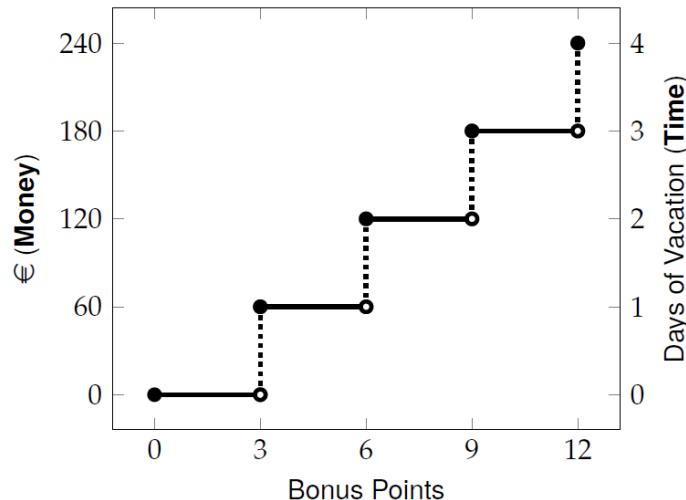
- One point for every month without unplanned absence
- **Three points** correspond to **one unit of bonus**

Money Treatment:

- One unit of bonus is EUR 60
- Maximum bonus of EUR 240 (1/4 of monthly salary)

Time Treatment:

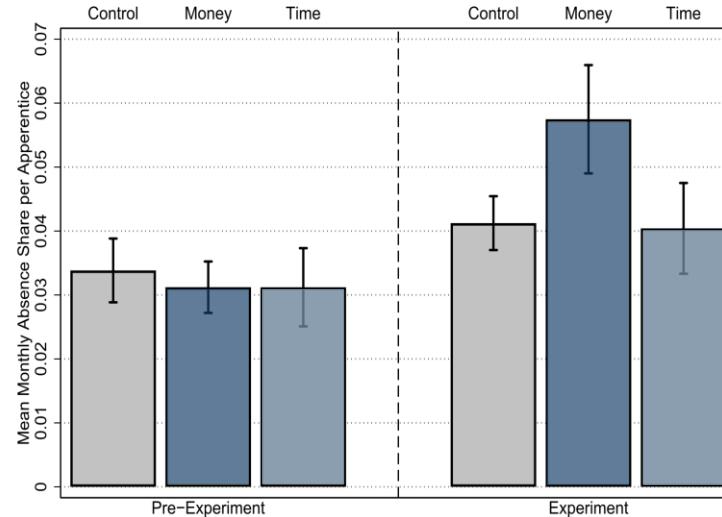
- One unit of bonus is 1 day of vacation
- Maximum bonus of 4 days of vacation



Points (For each month without absence)	Euro Amount	Additional Vacation Days
3	60,-	1
6	120,-	2
9	180,-	3
12	240,-	4

CASE: APPRENTICES

TREATMENT EFFECTS



KEY INSIGHTS:

- 1) While prior the pilot (i.e. the experiment) the absence share of apprentices are comparable due to the randomization
- 2) The financial bonus increased absence of apprentices by 50% (although it was intended to decrease absence!)
- 3) The time (vacation) bonus does neither lead to a positive nor a negative effect

CASE: APPRENTICES

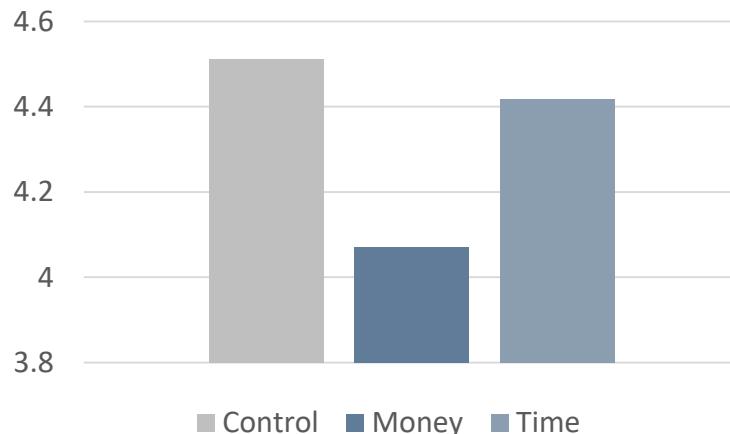
APPRENTICES CASE – BONUS PAYMENTS FOR ATTENDANCE

Why? Which signal went wrong?

CASE: APPRENTICES

MECHANISM

Survey: Intrinsic Motivation to Come to Work



With attendance bonus:

- substantially weaker feeling of obligation to come to work
- weaker guilty conscience when calling in sick when actually being healthy

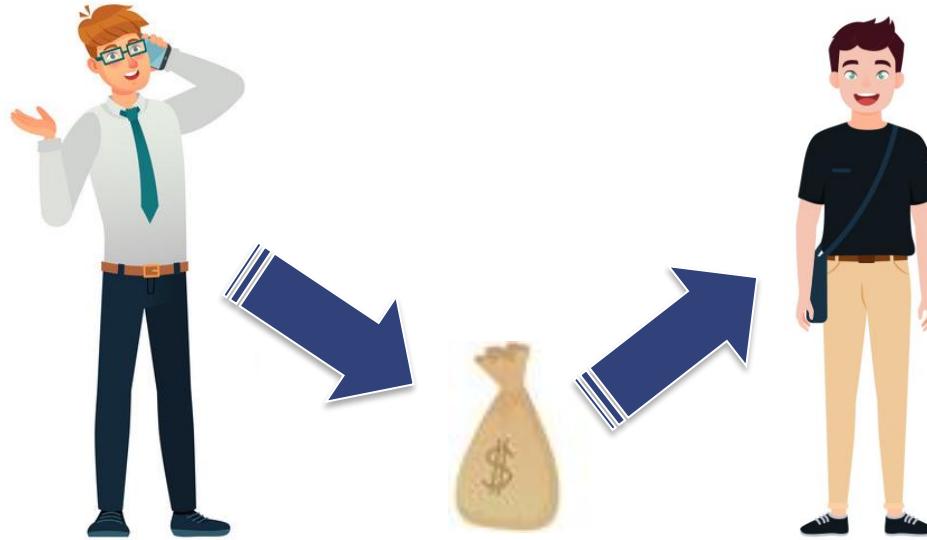
➤ Lower intrinsic motivation

KEY INSIGHTS:

- 1) The attendance bonus makes apprentices to think that regularly coming to work is extraordinary and worth rewarding
- 2) When updating this (ex-ante unclear) norm they possibly conclude that the costs of coming to work are too high

SIGNALS AT WORK

BONUSES: EMPLOYER – EMPLOYEE RELATIONSHIP



SIGNALS AT WORK

POSSIBLE SIGNALS



Maybe...

- the working task is costly to execute
(Benabou and Tirole 2003, Alfitian et al. 2023)
- it was not expected to execute the task
(Alfitian et al. 2023)
- the KPI is important
(Manthei et al. 2023)
- the KPI might be used for promotion
(Manthei et al. 2023)
- others are behaving differently
(Sliwka 2009)
- forgone Bonus is the worse that can happen
(Gneezy and Rustichini 2001)
- the employer likes to do something good for me
(Vogelsang 2023)

SIGNALS AT WORK

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(*Vogelsang 2023*)

A CASE STUDY (2)

CASE: TALKING

THE ENVIRONMENT

- German retail chain (discount supermarket)
- Germany is divided in different regions with independent regional manager
 - Each sales territory manager has 6-8 district managers
 - Each district manager has 6-8 store managers
 - Each store manager has approx. 7 FTEs
- Gross monthly wage store manager: €3000 | Gross monthly wage district manager: €6000
- Only small additional bonus
- 5% of store managers are promoted to district managers (and all district managers are former store managers)

CASE: TALKING

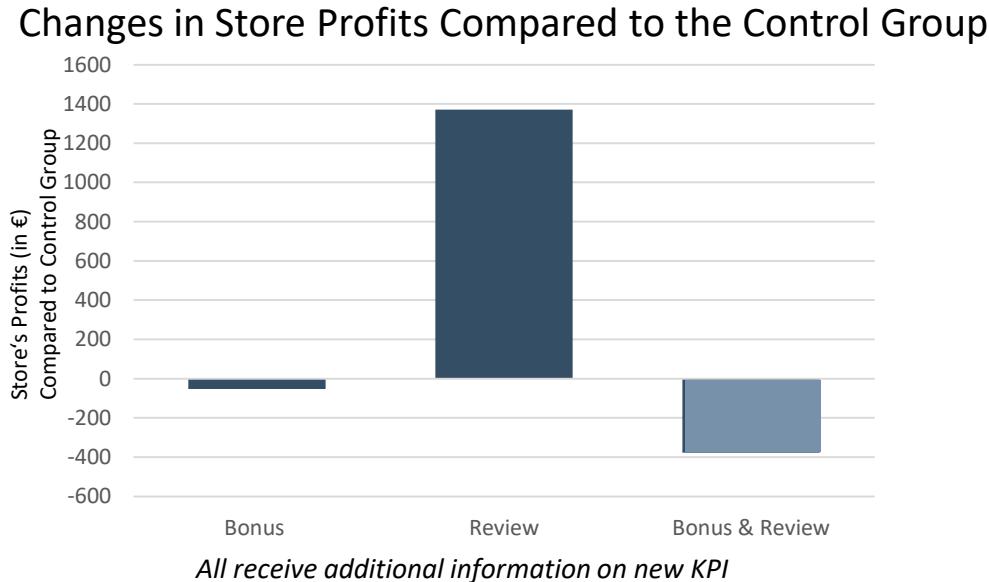
THE INTERVENTION

- Pilot with store managers of a discount retailing organization
- Random allocation of four treatments (all receive product margin information):
 - 1) **Control Group:** only Information
 - 2) **Bonus:** Financial bonus for increases in simplified profits
 - 3) **Performance Review:** Supervisor (district manager) conversations about profits (biweekly)
 - Conversation Guideline: What done to increase profits? What were problems? What are next steps?
 - 4) **Bonus and Performance Reviews:** A combination of 2) and 3)

	Bonus	No Bonus
Performance Review	63 store managers	51 store managers
No Performance Review	50 store managers	60 store managers

CASE: TALKING

TREATMENT EFFECTS



KEY INSIGHTS:

- 1) Performance Reviews increase profits by approx. 7% (highly statistically significant)
- 2) This positive effect completely vanishes when performance reviews are implemented together with a financial bonus (Bonus&Review)

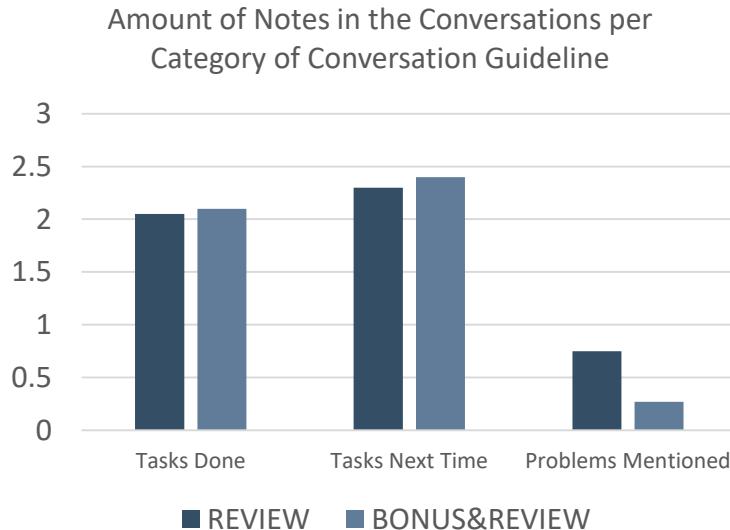
CASE: TALKING

SUPERMARKET CASE – BONUS PAYMENTS AND REVIEWS

Why? Which signal went wrong?

CASE: TALKING

MECHANISM



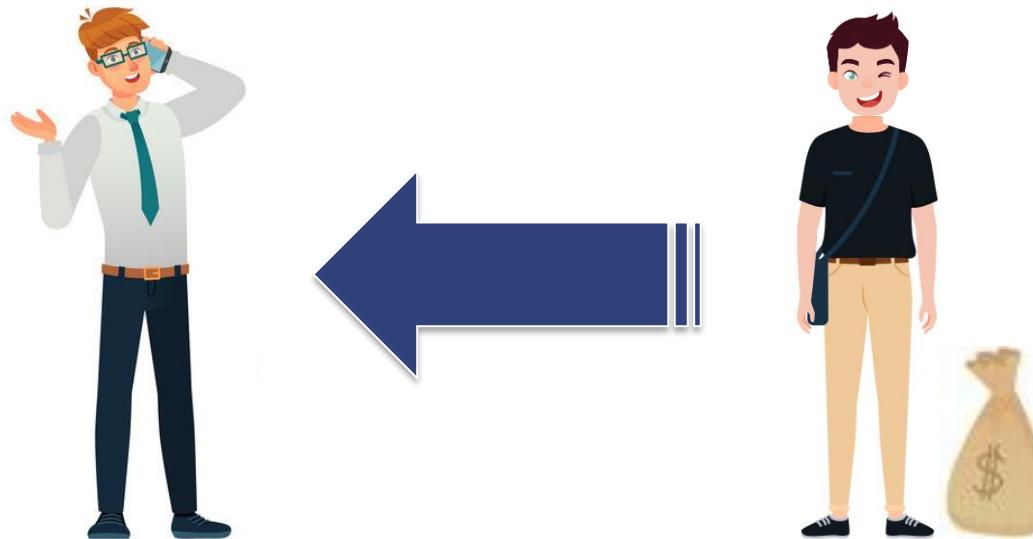
- Key difference “problems” and “tasks done/planned”: Reporting a problem leads to a stronger involvement of the supervisor
- The bonus thus shifted the nature of conversations towards stronger self-reliance
- „If I mention a problem (ask for help) and also receive a bonus this shows my supervisor that I cannot work on my own“

KEY INSIGHTS:

- 1) The detrimental effect of the financial bonus results from a change in the nature of the review conversations
- 2) With a financial bonus, store managers are less open to talk about problems with their supervisors (this can be interpreted in a way that they are less willing to ask for help)

SIGNALS AT WORK

BONUSES: EMPLOYEE – EMPLOYER RELATIONSHIP

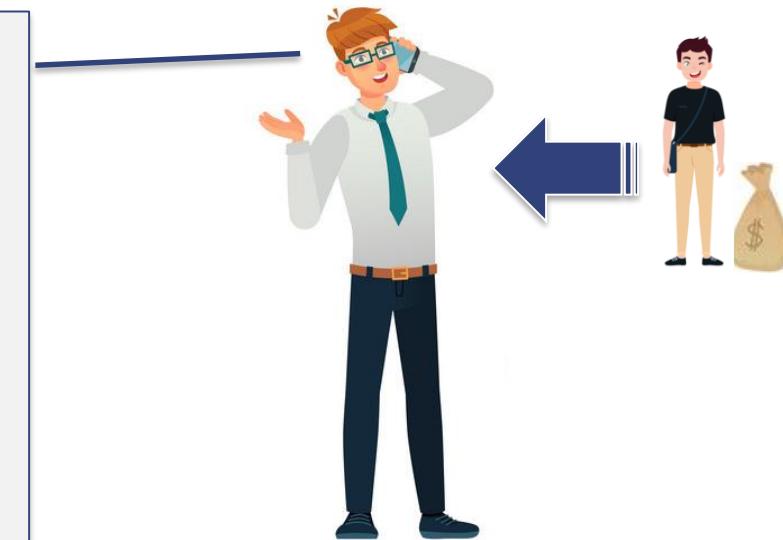


SIGNALS AT WORK

BONUSES: EMPLOYEE – EMPLOYER RELATIONSHIP

Maybe...

- he does only care about money
(*Benabou and Tirole 2006, Manthei et al. 2023*)
- he needs money (has money problems)
- ...



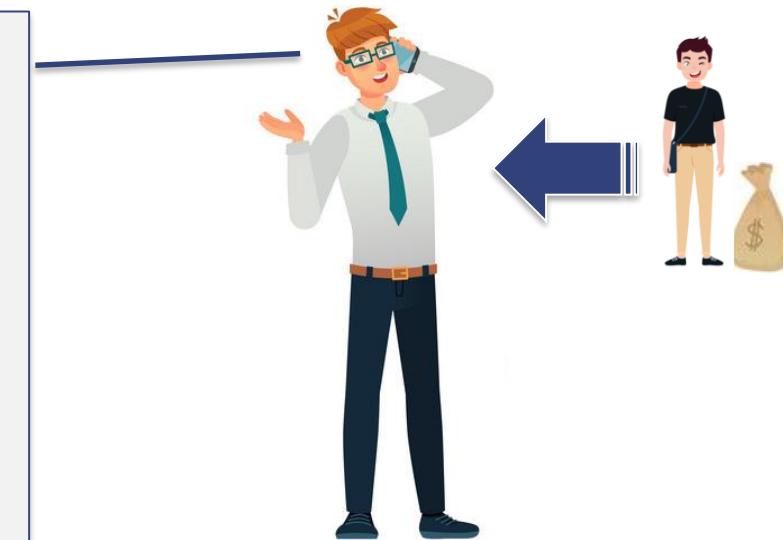
SIGNALS AT WORK

BONUSES: EMPLOYEE – EMPLOYER RELATIONSHIP

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- he does only care about money
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- ...

Employee: “If I fear that my supervisor would think about me as someone who is motivated by extrinsic rewards I might be better off in the long run if I decrease my performance and signal that I am rather intrinsically than extrinsically motivated”



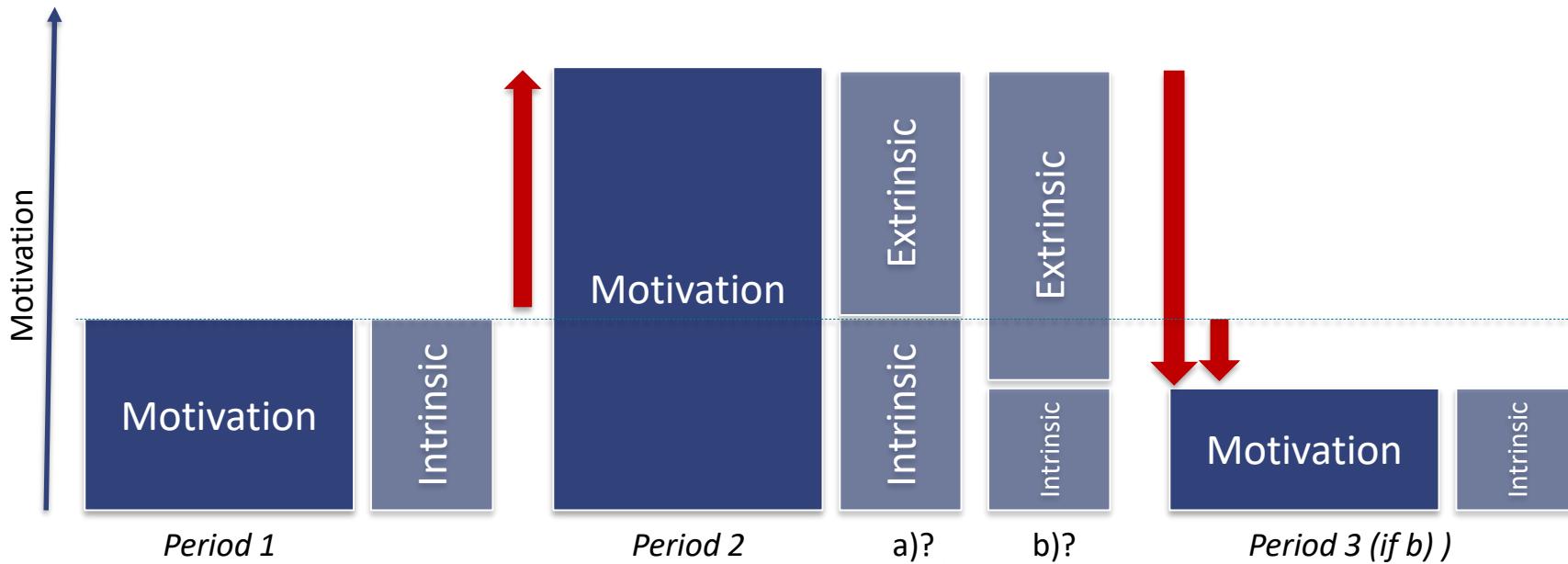
THE LONG RUN

MOTIVATION CROWDING-OUT

- The described effects are commonly referred to as motivation crowding-out (or backfiring)
- Crowding-out can happen immediately in the incentivized period (as described)
- But it can also first happen AFTER the incentivized period
- A classical paper is Deci et al. 1971:
 - *Period 1:* Control Group = no incentive Treatment Group = no incentive
 - *Period 2:* Control Group = no incentive Treatment Group = **incentive**
 - *Period 3:* Control Group = no incentive Treatment Group = no incentive

THE LONG RUN

MOTIVATION CROWDING-OUT



SUSTAINABILITY AND CONTROLLING

SUSTAINABILITY

SHOULD MANAGERS DO EVERYTHING TO MAXIMIZE SHAREHOLDER WEALTH?



SUSTAINABILITY

SHOULD MANAGERS DO EVERYTHING TO MAXIMIZE SHAREHOLDER WEALTH?

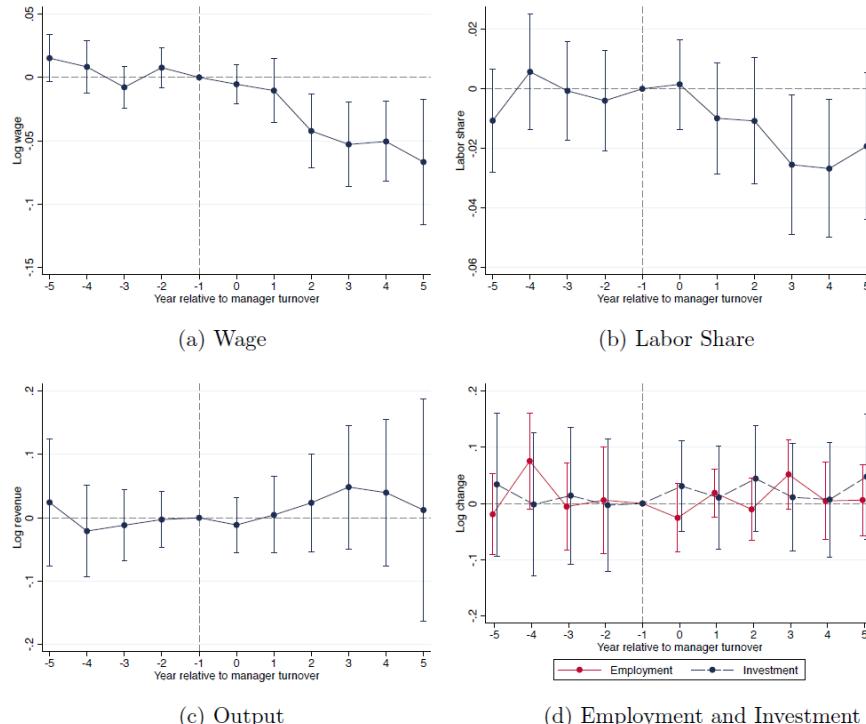
“There is one and only one social responsibility of business – to...increase its profits”

Milton Friedman, Nobel Laureate in Economics



SUSTAINABILITY

ACEMOGLU ET AL. 2022: ECLIPSE OF RENT-SHARING: THE EFFECTS OF MANAGERS' BUSINESS EDUCATION ON WAGES AND THE LABOR SHARE IN THE US AND DENMARK



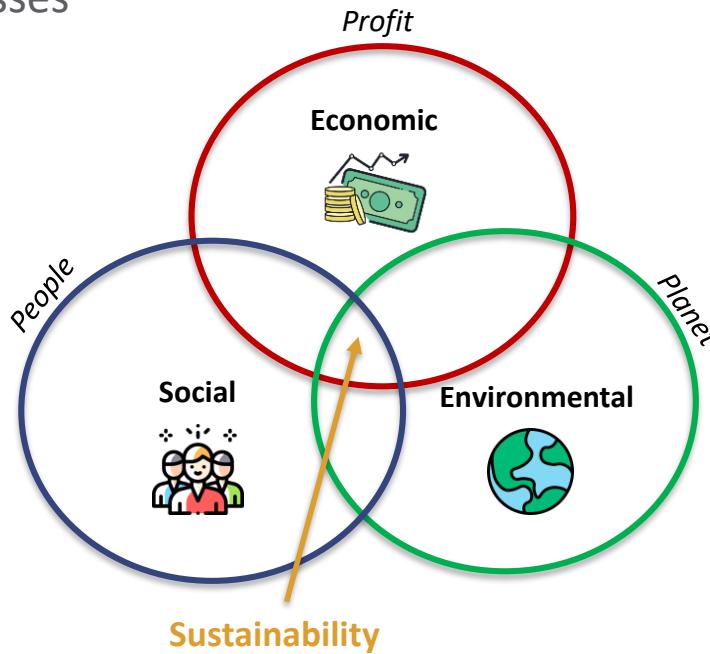
This figure plots event-study estimates and 95% confidence intervals, where events are manager transitions from a non-business manager to a business manager in the US. The sample includes firms that have non-business managers in all years, and firms that have one non-business to business manager transition event during the sample period. Panel (a) uses worker-level data and the matching estimator is described in Section 3. Panels (b), (c), and (d) use firm-level data and include firm fixed effects, industry \times year fixed effects, state \times year fixed effects, and initial size quintile by year fixed effects. Firm-level regressions are weighted by employment. The dependent variables are log hourly wage and log annual income in Panel (a), the labor share in Panel (b), log sales in Panel (c), and log employment and log capital expenditure in Panel (d). The labor share is defined as total wage bill divided by sales. Investment rate is calculated from the Compustat data. All standard errors are clustered at the firm level.

„Within five years of the appointment of a business manager [MBA graduate from a business school] , wages decline by 6% and the labor share by 5 percentage points in the US, and by 3% and 3 percentage points in Denmark.”

SUSTAINABILITY: APPROACHES (1)

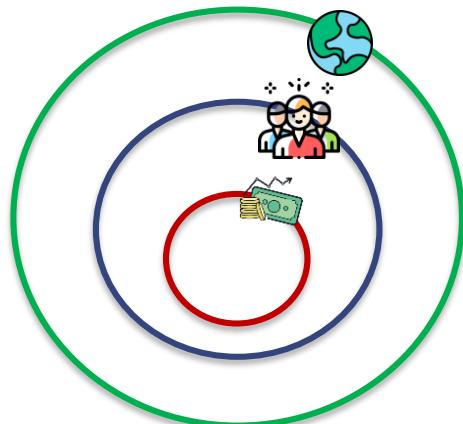
TRIPLE BOTTOM LINE

- John Elkington (1997)
- Sustainability + Businesses



SUSTAINABILITY: APPROACHES (1)

TRIPLE BOTTOM LINE



- Without environment, no society
- Without society, no economy



To achieve sustainability we have to comply with social and environmental conditions



This does NOT mean that businesses have to put financial gains last!

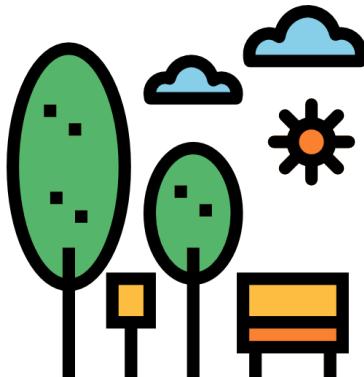
BUT: Economic decisions are part of a strategy to make more money while getting closer to social and ecological sustainability

SUSTAINABILITY: APPROACHES (1)

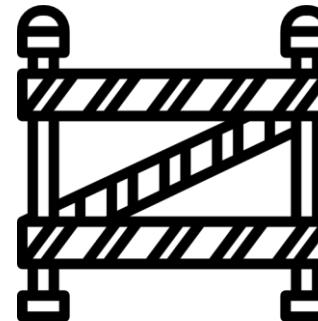
WHY CARE ABOUT ENVIRONMENT AS A COMPANY?



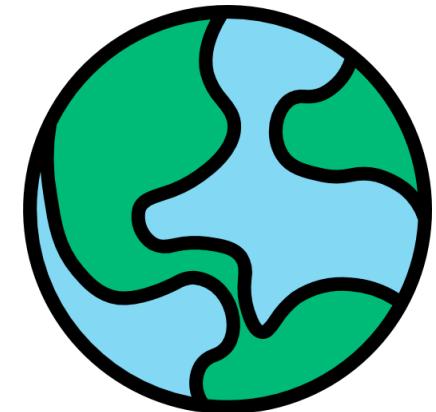
Interest of internal & external stakeholders



Environmental costs can be huge



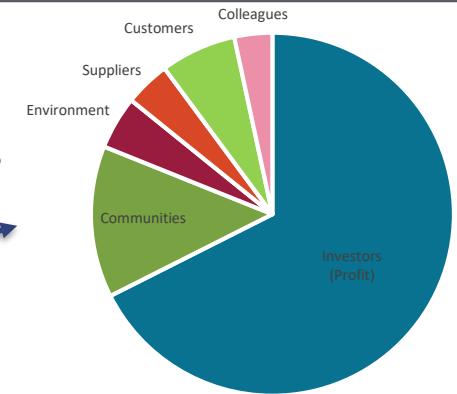
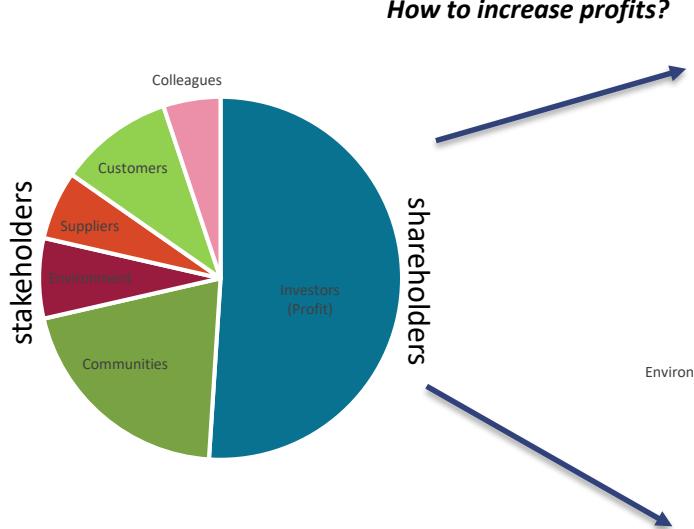
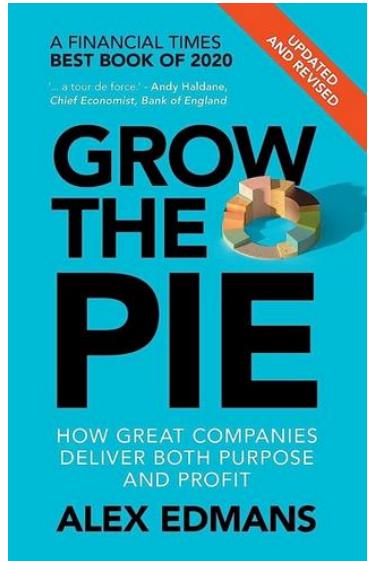
More and more regulations



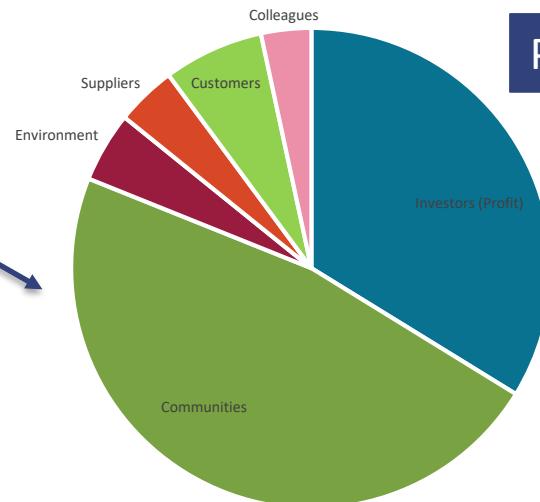
Society becomes more environmentally aware

SUSTAINABILITY: APPROACHES (2)

GROWING THE PIE



Pie-Splitting



Pie-Growing

SUSTAINABILITY: APPROACHES (2)

GROWING THE PIE

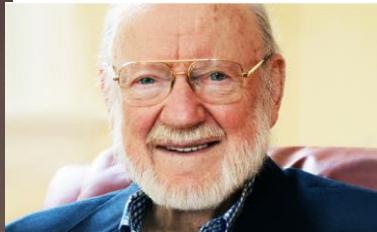


- 1978: William Campbell (scientist at Merck) discovered that a specific drug would also cure onchocerciasis (river blindness)
- 18 million people were infected, 100 million more at risk, 34 developing countries. Some complete villages were infected (by the age of 15 and went blind by 30)
- BUT: \$2 mio. to set up distribution channel + \$20 mio. per year to produce
- AND: Neither the people nor their governments could pay for it

Roy Vagelos (CEO)



William Campbell



SUSTAINABILITY: APPROACHES (2)

RIVER BLINDNESS



<https://www.merck.com/stories/mectizan/>

SUSTAINABILITY: APPROACHES (2)

GROWING THE PIE



- 21st of October 1987: Roy Vagelos announced that he would give Mectizan for free
- Established the Mectizan Donation Program (MDP)
- Huge impact!
- + the decision (although against immediate profits) **grew the pie**
 - Most of the pie increases went to the countries, communities and citizens
 - But MDP grew Mercks reputation
 - This attracted both investors and stakeholders
 - Roy reports that many shareholder explicitly stated that they joined Merck because of MDP
- Now: Merck is one of the biggest pharmaceutical companies (worth > \$200bio.)



SUSTAINABILITY

OK, BUT ... WHY THE MANAGERIAL ACCOUNTANTS?



Can a new way of accounting save our planet? | Richard Mattison |
TEDxBathUniversity

SUSTAINABILITY

OK, BUT ... WHY THE MANAGERIAL ACCOUNTANTS?

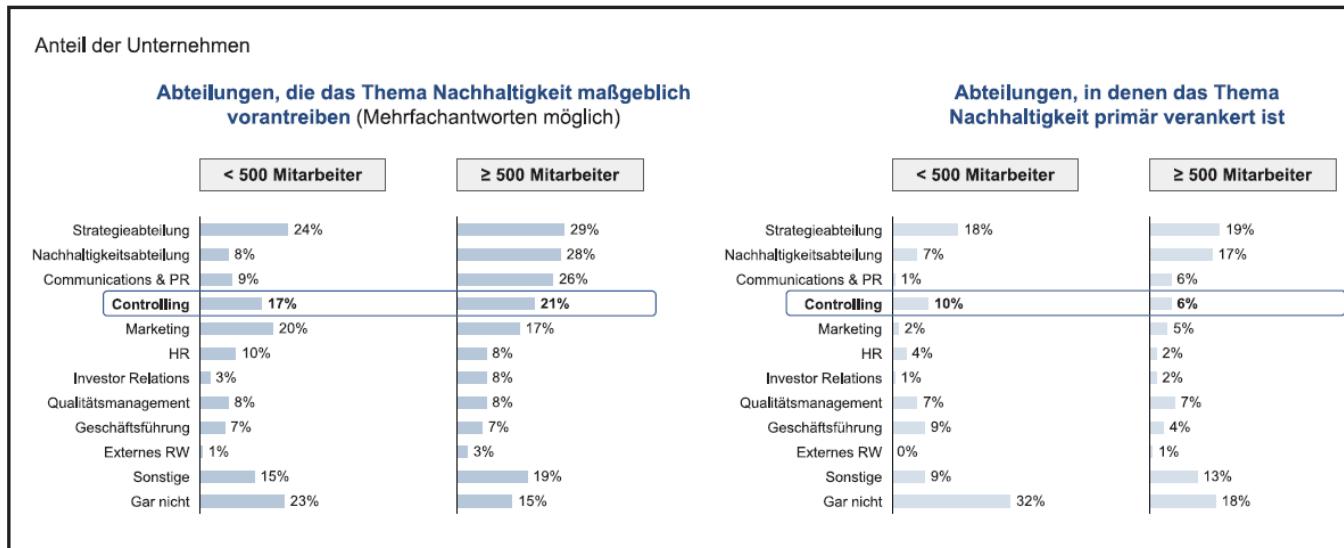


Abb. 2: Organisatorische Verankerung des Nachhaltigkeitsgedankens

SUSTAINABILITY

BALANCED SCORE CARD 2.0

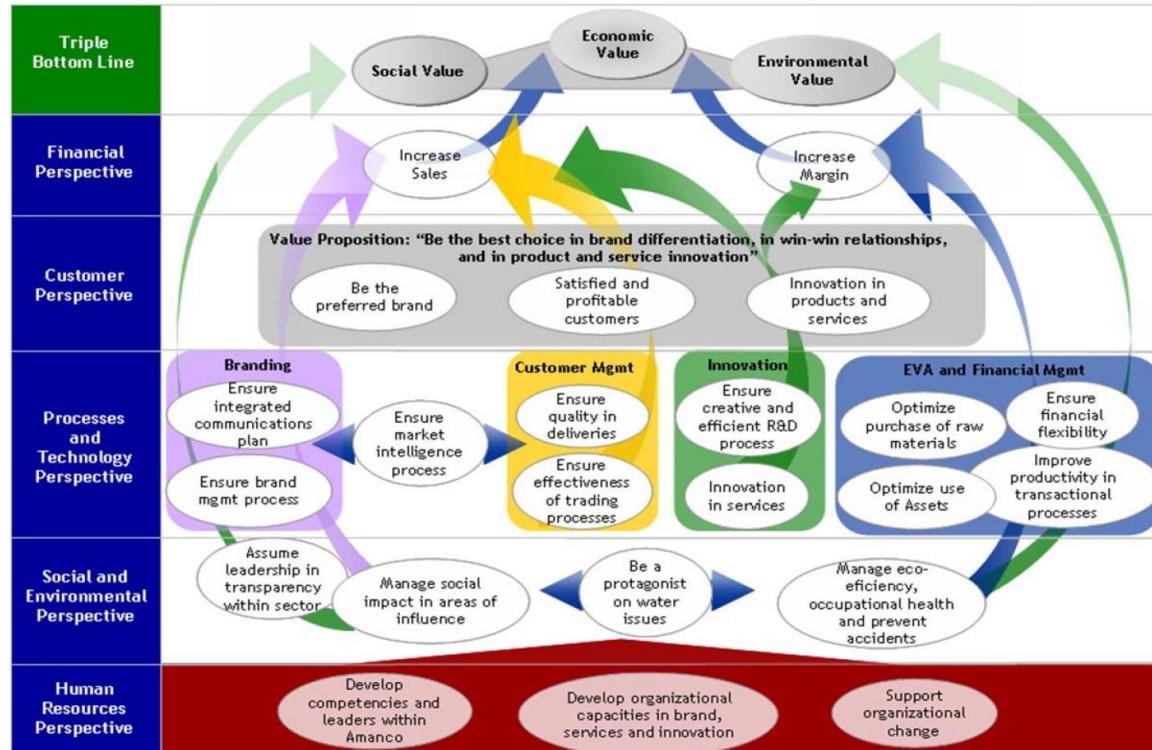


Figure 2: Amanco's strategy map for triple bottom line performance

CASE: CAR PRODUCTION (ILLUSTRATIVE)

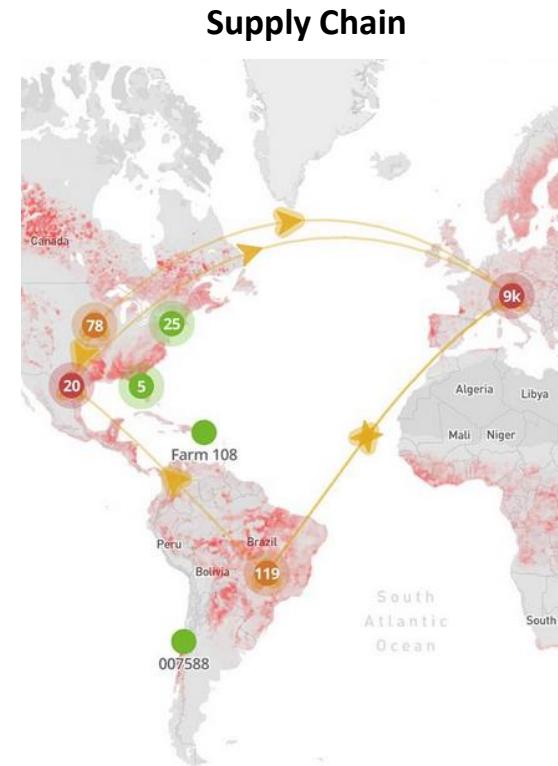
BMW



- BMW produces cars in Germany
- But the material needed comes from around the world

Design a measure for the **cost** of
the product that incorporates
sustainability aspects!

Design a measure for the **benefit**
of the product that incorporates
sustainability aspects!

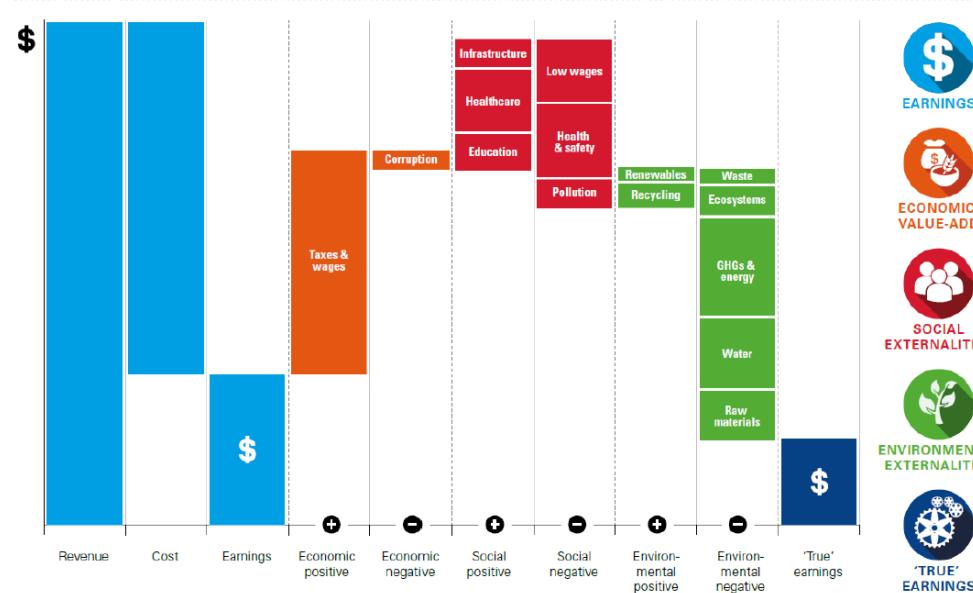


SUSTAINABILITY

PRICING & COSTING – FULL COST ACCOUNTING

KPMG True Value

Figure 14 / 'True' earnings bridge for gold mine in South Africa



SUSTAINABILITY

PRICING & COSTING – FULL COST ACCOUNTING

PWC Total Impact

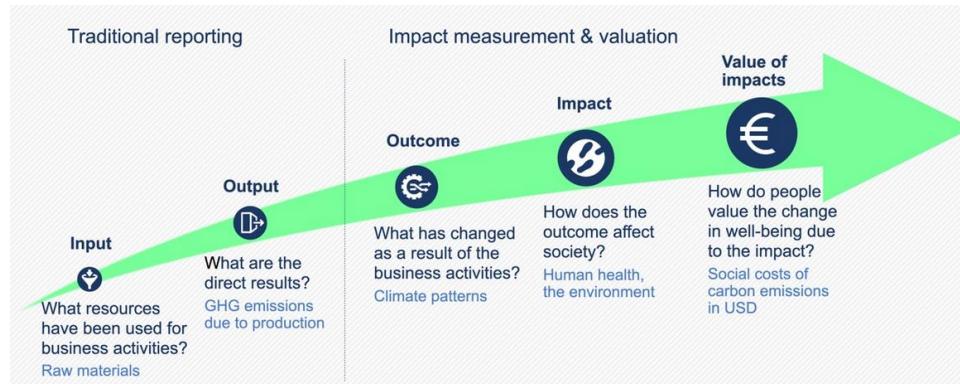


SUSTAINABILITY

VALUE BALANCING ALLIANCE



"We are an alliance of multinational companies coming together with a common goal: to create a way of measuring and comparing the value of contributions made by businesses to society, the economy, and the environment – a metric not previously reflected in a company's balance sheet. **The Alliance translates environmental and social impacts into comparable financial data.** Our members test the methodology to ensure feasibility, robustness, and relevance."

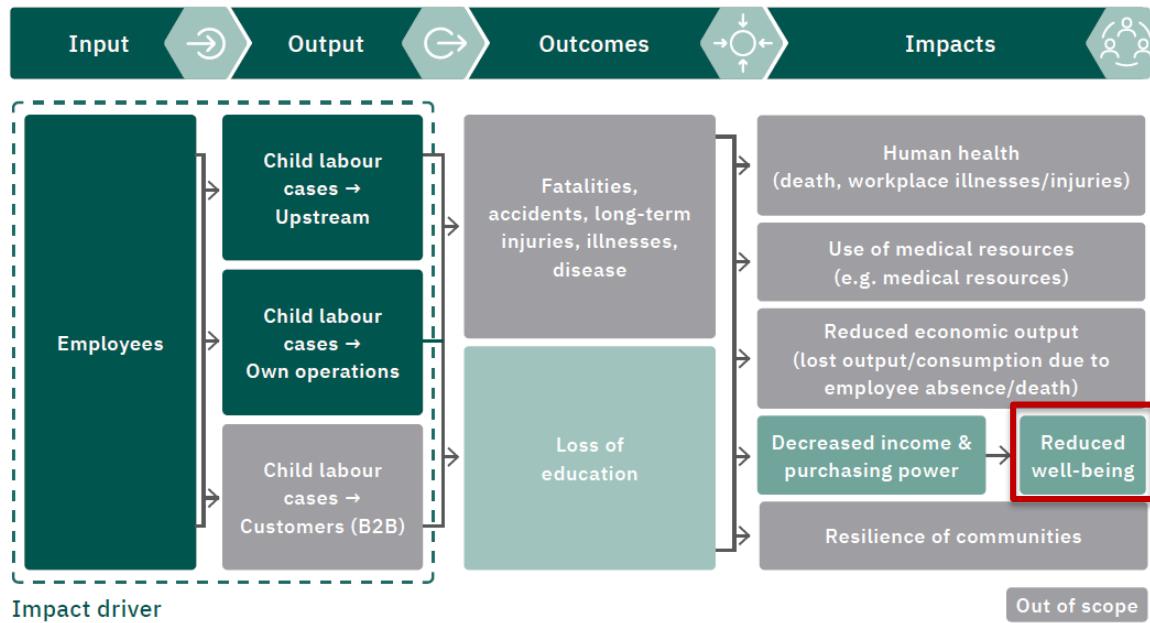


SUSTAINABILITY

VALUE BALANCING ALLIANCE



EXAMPLE: CHILD LABOR



Calculation to derive here is complex and relies on my assumptions....

<https://www.value-balancing.com/en/downloads.html>

But maybe it is the only way....

Figure 4: Simplified impact pathway Child Labour

DISCUSS

Is this the right way? Trying to
quantify everything?

SUSTAINABILITY

GREENHOUSE GAS EMISSIONS

- Social impact of one ton of CO₂
 - 50\$ (Environmental Defense Fund 2023)
 - 201€ (Umweltbundesamt 2023)
- VBA:

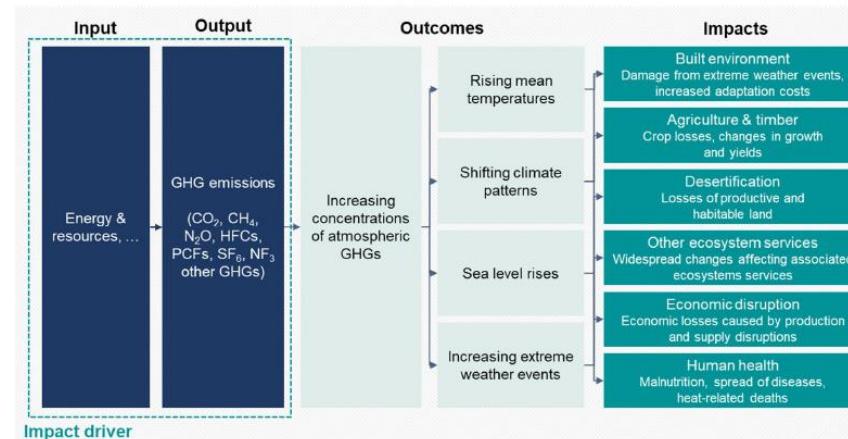
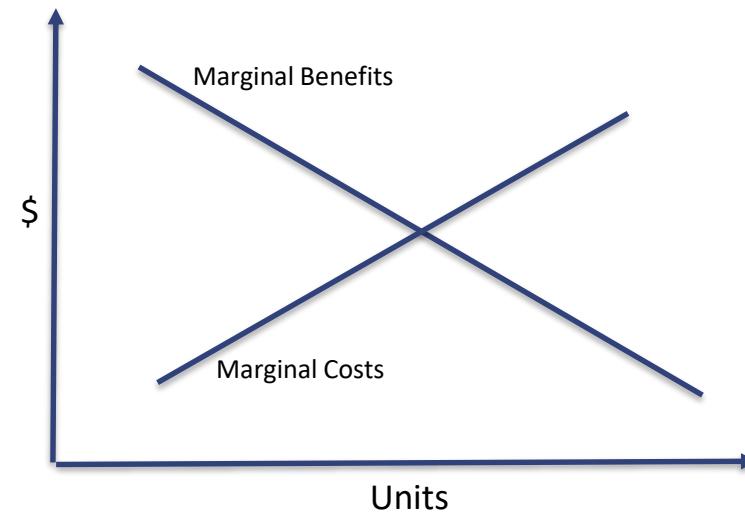


Figure 1: Simplified impact pathway GHGs

SUSTAINABILITY

GREENHOUSE GAS EMISSION REDUCTION: THE TRADE-OFF

- Top managers usually have financial incentives to increase profits
- These days, managers are also getting financial incentives for, e.g., CO₂ reduction
- This trade-off is very often topic in discussions
- How should they decide?



SUSTAINABILITY

EU TAXONOMY?

- Yes, the EU is doing a lot in terms of regulation
- ...but we are unable to cover this here

SUSTAINABILITY

WHAT ARE THE NEW AND EXCITING FIELD IN MANAGERIAL ACCOUNTING?

- Incentives
 - How to add new incentives?
 - How to incentivize potentially intrinsically motivated behavior?
- Optimal Design of Dashboards
 - More KPIs may lead to information overload
- Other Management Controls
 - Do we need new control systems in organizations?
- Product Costing
 - Should we include external costs in our product costs?
- Cost Estimation
 - How do we estimate external costs
-

SUSTAINABILITY

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- Other Management Cont...
- Do we need...
- Product Costing
 - Sh...
– ...in our product cost?
- Cost Estimation
 - How to estimate external costs
-

Great topics for bachelor theses ! 😊

**THANKS
FOR YOUR
ATTENTION**





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