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EMA – estimating the benefit side

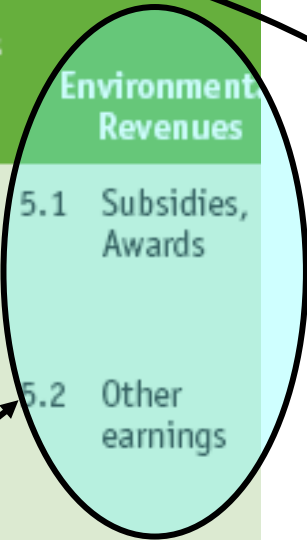
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Environmental Cost/Expenditure Categories

| 1 | 2 | 3 | 4 | 5 |
|--|---|---|--|-----------------------|
| Waste and Emission Treatment | Prevention and Environmental Management | Material Purchase Value of Non-Product Output | Processing Costs of Non-Product Output | Environment Revenues |
| 1.1 Depreciation for related equipment | 2.1 External services for environmental management | 3.1 Raw materials | 4.1 Labour costs | 5.1 Subsidies, Awards |
| 1.2 Maintenance and operating materials and services | 2.2 Personnel for general environmental management activities | 3.2 Packaging | 4.2 Energy costs | 5.2 Other earnings |
| 1.3 Related Personnel | 2.3 Research and Development | 3.3 Auxiliary materials | | |
| 1.4 Fees, Taxes, Charges | 2.4 Extra expenditure for cleaner technologies | 3.4 Operating materials | | |
| 1.5 Fines and penalties | 2.5 Other environmental management costs | 3.5 Energy | | |
| 1.6 Insurance for environmental liabilities | | 3.6 Water | | |
| 1.7 Provisions for clean-up costs, remediation | | | | |

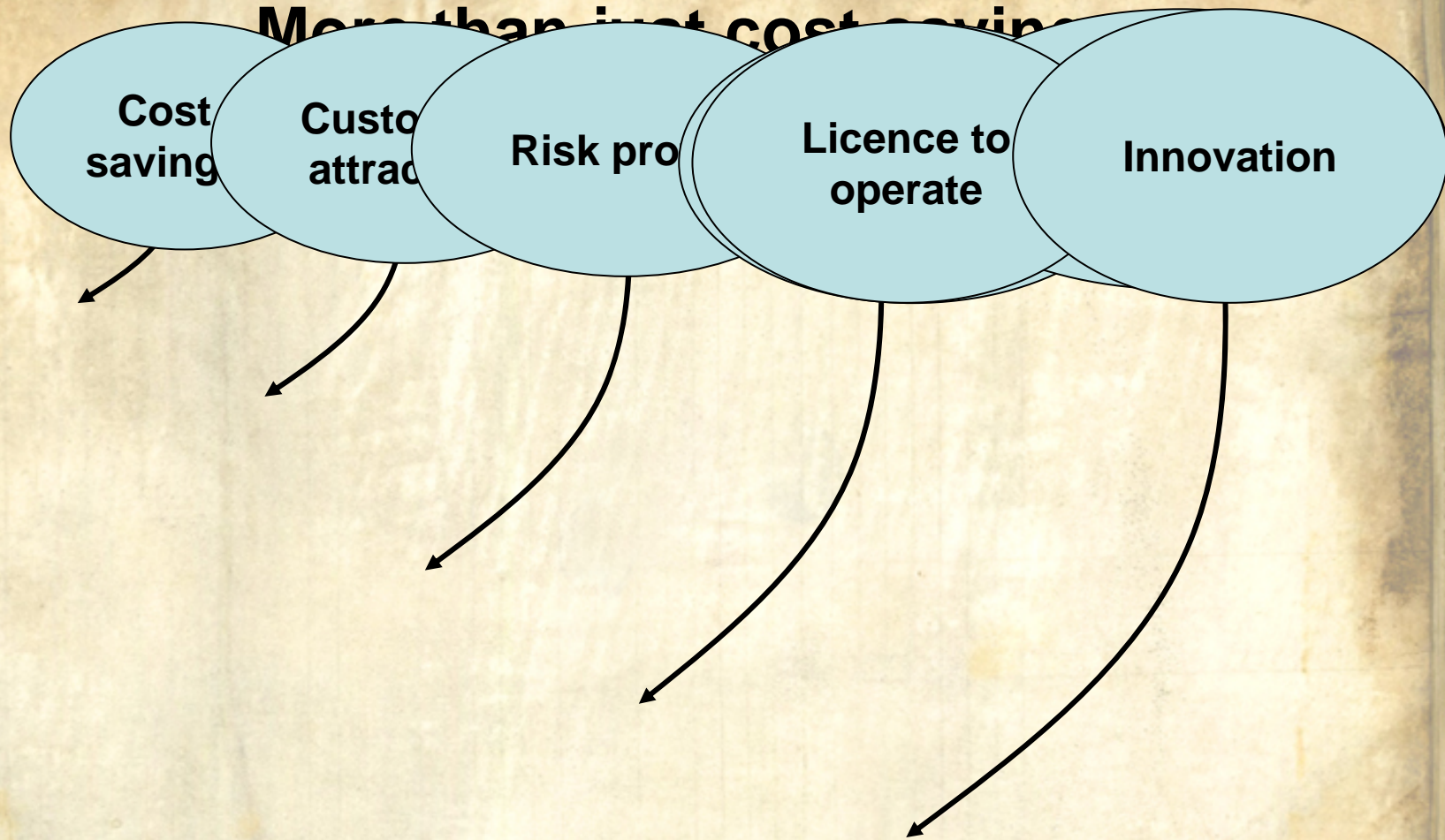


EMA FOCUS:
 Cost savings
 Certain Revenues

Source:
 UNDSO: "Environmental Management Accounting, Procedures and Principles", United Nations, New York, 2001, p. 19.

Environmental benefits:

More than just cost saving



Customer attraction

| Value Drivers | Customer attraction (sales) |
|-------------------------------------|------------------------------------|
| Environmental benefits | |
| Environmentally different. products | Sales |
| recyclable waste | Sales |
| non environmental products | Sales due to halo effect |
| Tradable permissions | Deemed value |

Customer attraction

- Sales contribution of environmentally differentiated products:
 - May have a big impact on shareholder value
 - Which products can be labeled as environmental ?
 - Official logo, regulation or selling point what matters
 - Partly environmental products
 - % of sales or % of sales increase



Cost reduction

| Value Drivers | Customer attraction (sales) | Cost reduction and efficiency improvement |
|--|--|--|
| Environmental benefits | | Cost reduction (resource savings, O&M, Fees and tax) |
| Cleaner production measures | contribution to sales | cost reduction |
| Efficiency improvement, defects | | Cost reduction on fees, fines, reduction on monitoring cost |
| Reduction of emissions and discharges | | Cost reduction |
| | | |

Risk reduction

| Value Drivers | Customer attraction (sales) | Cost reduction and efficiency improvement | Risk profile | Reputation and brand value | Human, natural or financial capital | Licence to operate |
|--------------------------------|--------------------------------|--|---|----------------------------|---|---------------------------|
| Environmental benefits | | | | | | |
| Risk reduction measures | Sustaining or increasing sales | Cost reduction in fines, penalties, reduced interest rate, reduction in monitoring and reporting costs | Reduction in expected costs of accidents, willingness to pay for cost reduction | Goodwill | Value of access to loans or venture capital (future cash flows) | Sustain future cash flows |

Risk reduction

- Usual risk
- Extreme risk:
 - Much more money should be spent on prevention if your business is at stake, e.g. it would go into bankruptcy due to high clean-up and compensation costs or would lose its operation permit. Applying statistical rules would require a high number of occurrences, and should not be applied for unique or events with extreme magnitude.
 - You cannot buy insurance for these risks
 - Willingness to pay for risk avoidance must exceed the expected cost of extreme risks

Environmental PR

- Szöveg

| Environmental benefits | Value Drivers | Customer attraction (sales) | Cost reduction and efficiency improvement | Risk profile | Reputation and brand value |
|--|---------------|---------------------------------|---|--------------|-----------------------------------|
| Environmental PR (exhibitions, environmental report) | | Sales increase or stabilisation | Substitution cost of marketing | | Deemed travel costs of attendants |

Reputation

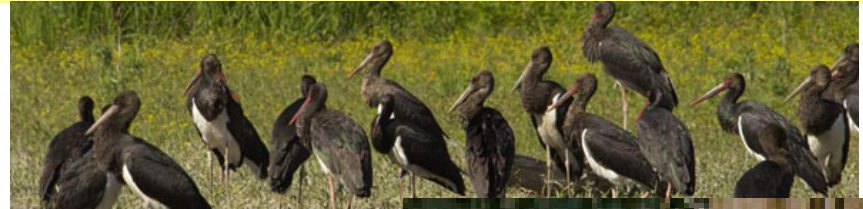
- Marketing value of environmental programs:
 - Actual increase in sales due to an environmental program
 - Substitution costs for marketing is a proxy
 - Value of time spent by stakeholders on company exhibitions, reading the reports, attending to conference presentations can be estimated as another proxy for marketing value



"Miss Wimbush, get me my PR man!"

Applicable methods

- Travel cost method:
- The *travel cost method* is based on the assumption that time is value. People spending time on a company presentation at a conference sacrifice their time, pay the travel costs to get there and may pay some attendance fee, too.



Willingness to pay

- is a widely used method in resource economics for measuring the value people contribute to environmental amenities. It is subjective by nature and can be used for measuring risk acceptance of managers or their willingness to pay for risk avoidance.

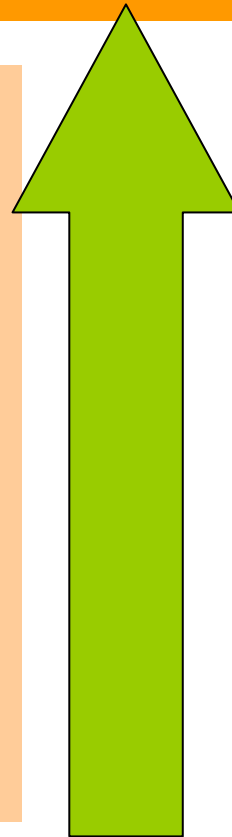
Replacement costs

- approximate the value of a measure by the saved cost of an alternative measure. Better working conditions, for example, might result in decreased turnover of employees. The value of decreased turnover can be estimated by the saved replacement and training costs of new entrants.
- Lower estimate estimate
- PV of dental prosthesis costs as an estimate for your real teeth

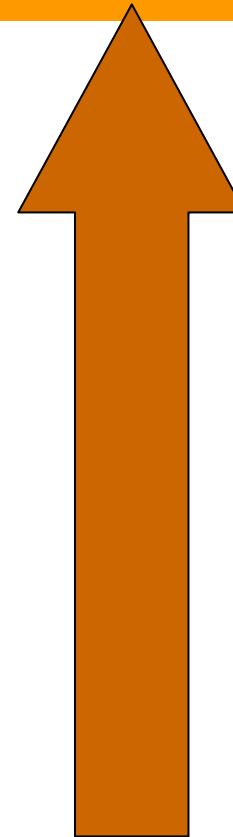


Tangibles vs. intangibles

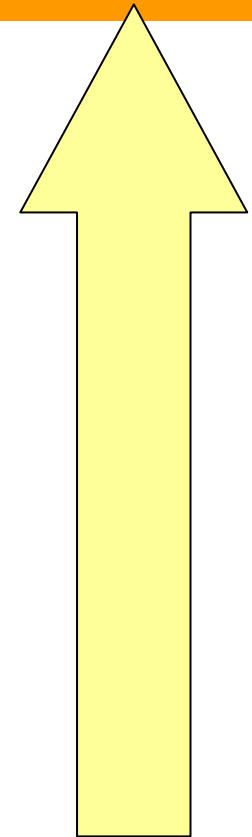
- Customer attraction
- Reputation
- Risk reduction
- Cost avoidance



More
strategic



Potential
Impact on
Company value



Difficulty
In estimation