Chapter 17
Sustainability and Technology Acceleration—How to Surf the Killer Waves: A Systems Thinking Approach to Become Fit for the Future

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17.1 "WHY"—Fundamental Change Is Imminent: One Individual—Two Perspectives

17.1.1 The Individual in the Business Context: Addressing the Key Decision Maker as a Member of the Economy

Today's *Key Decision Makers* such as entrepreneurs, executives, C-suite members, investors, and strategy influencers are confronted with unprecedented challenges. Swinging from one quarterly result to the next without losing the liana to satisfied shareholders, has been the pressuring theme for the board room's agenda for a long time; at least for listed companies.

Setting and pursuing strategic goals in the four quadrants: short-term vs. long-term and top-line vs. bottom-line (a.k.a. *Growth*, *Productivity, "Innovation"*[1] and *Re-engineering*), as shown in Fig. 17.1, has been part of their regular routine.

Furthermore, living in VUCA(D)[2] times, additional pressure is building up on executives at an exponential rate. So much, that even more long-term oriented, family-owned businesses experience an incredible heat.

More and more stakeholders are demanding more and more. From all the dimensions of change in the external environment, the next technological breakthrough seems to be the issue that gets by far the most attention from *Key Decision Makers* and *Key Stakeholders* of any organization.

[1]Innovation is often referred to as product innovation, however, innovation happens in all four quadrants, hence the labeling of this quadrant in quotation marks.

[2]Originating from the US Military VUCA stands for: Volatile; Uncertain; Complex; Ambiguous. D as in Disruptive has been added to emphasize market effects (Lawrence & Steck, 1991).

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T. Wunder (ed.), *Rethinking Strategic Management*, CSR, Sustainability, Ethics & Governance, https://doi.org/10.1007/978-3-030-06014-5_17

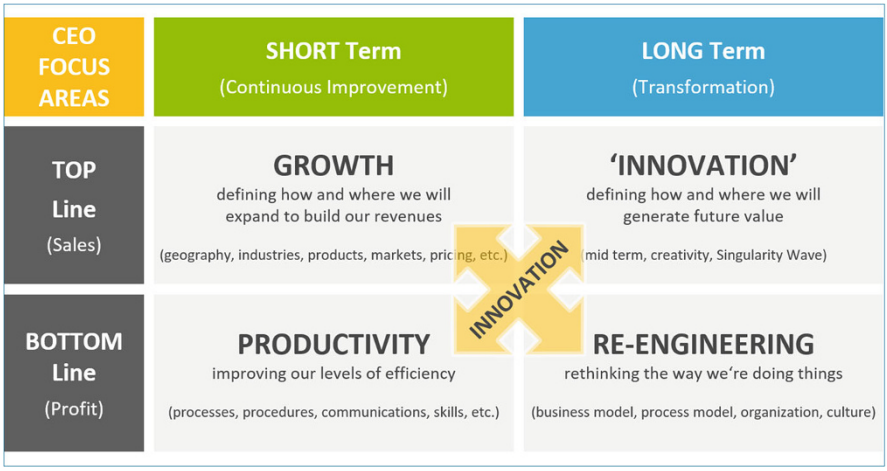

Fig. 17.1 The four CEO's focus areas. Source: ©Sustainable Growth Associates™

The wave of technological advancements (short: *Technology Acceleration Wave* or *Singularity*[3] *Wave*) on concepts such as robotics, artificial intelligence, big data, bio-informatics, block chain, additive manufacturing, Internet of Things (IoT), just to name a few, can quickly become the perceived savior or killer for any organization. Hence, intense action can be observed in all four quadrants, mostly applying a reductionist approach to find a singular solution for an allegedly singular problem.

But how to deal in particular with the "U" and "C" of VUCAD, i.e. the uncertainty and complexity? How can executives be confident that their decision to embrace—or ignore—a given technology is the right thing to do, instead of a high-risk gamble with their organization and its stakeholders? Even if the decision is right, how can they be sure that they capitalize on a given technology in the right way?

In other words, is there a way to simplify complexity without forgetting about key aspects and is there a set of instruments, like a radar, compass, sonar, log, etc. for *Key Decision Makers* to successfully navigate these unchartered waters covered by the fog of VUCAD while keeping up the necessary speed?

To fully comprehend and embrace the answer to this question, a second unprecedented trend requires our full and immediate attention, best looked at from an alternate perspective.

[3]The term *Singularity Wave* as synonym for *Technology Acceleration Wave* references to the exponentially growing advancements in any kind of technologies, a trend which is well captured in the landmark Time magazine 02.2011 article "2045, The year man becomes immortal" (Grossman, 2011) and was elaborated by, among others, the Singularity University (Singularity University, 2018). See also Chap. 18.

17.1.2 *The Individual in the* Private *Context: Addressing the Parent, Partner, Friend, Explorer, etc. as a Member of the Society*

The before mentioned individual in the business context, the *Key Decision Maker*, does have a private life as well. Embedded in family structures, personal networks, social organizations, etc. he or she is an integral part of the unprecedented success in the development of our species—as the beneficiary as well as the person accountable.

Over several decades, most countries have been enjoying a constant improvement in their Human Development Index (HDI).[4] As illustrated in Fig. 17.2, on average people are getting older, receiving better education, and enjoying a higher living standard.

This trend on national level results from countless technological, economic, and social innovations, e.g. in agriculture, medicine, transportation, food, manufacturing, ICT, mobile communication, education, social media, semi-conductors, etc. Hence, this *Societal Success Story* is—apart from pure luck and vast numbers of trial and error—due to foresight, entrepreneurial thinking, perseverance, and wits on an individual as well as an organizational level. As such, it is directly or indirectly linked to an individual's or an organization's strategic intent—their *Key Decision Makers' Agenda*.

If these societal national advancements aren't evidence enough that "overall,"[5] our species has been doing the right things, then what is?! And who wouldn't want this trend to continue: for the people in different nations having a longer life expectancy, better access to education, and a higher living standard?

This seems to prove the inevitable relevance and purpose of the economy to carry this *Success Story* forward. Doesn't that justify and require business to continue taking its role and responsibility to make that happen?

However, obviously this is not a complete picture.

There is a downside to this development, which must no longer be ignored, and which can be visualized when the HDI development is related to our planet's capability to sustain us, expressed by the Ecological Footprint (EFP).[6]

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[4]"The Human Development Index (HDI) is a summary measure of average achievements in key dimensions of human development: a long and healthy life, being knowledgeable and having a decent standard of living. It does not reflect on inequalities, poverty, human security, empowerment, etc." (United Nations Development Program, 2018). The maximum HDI value of 1 is broken down in quarters, defined as low, medium, high and very high development.

[5]The term "overall" in this case is about national statistical figures and does not take into account the variances affecting individuals and organizations who may see themselves confronted with opposite trends due to societal break-downs, wars, hunger, etc.

[6]"Ecological Footprint accounting measures the *demand on* and *supply of nature*. On the demand side, the *Ecological Footprint* measures the ecological assets that a given population requires to produce the natural resources it consumes and to absorb its waste, especially carbon emissions. (...) On the supply side, a city, state or nation's *Biocapacity* represents the productivity of its ecological assets. These areas, especially if left unharvested, can also absorb much of the waste we generate, especially our carbon emissions." (Global Footprint Network, 2018). The EFP is measured in global hectare per person.

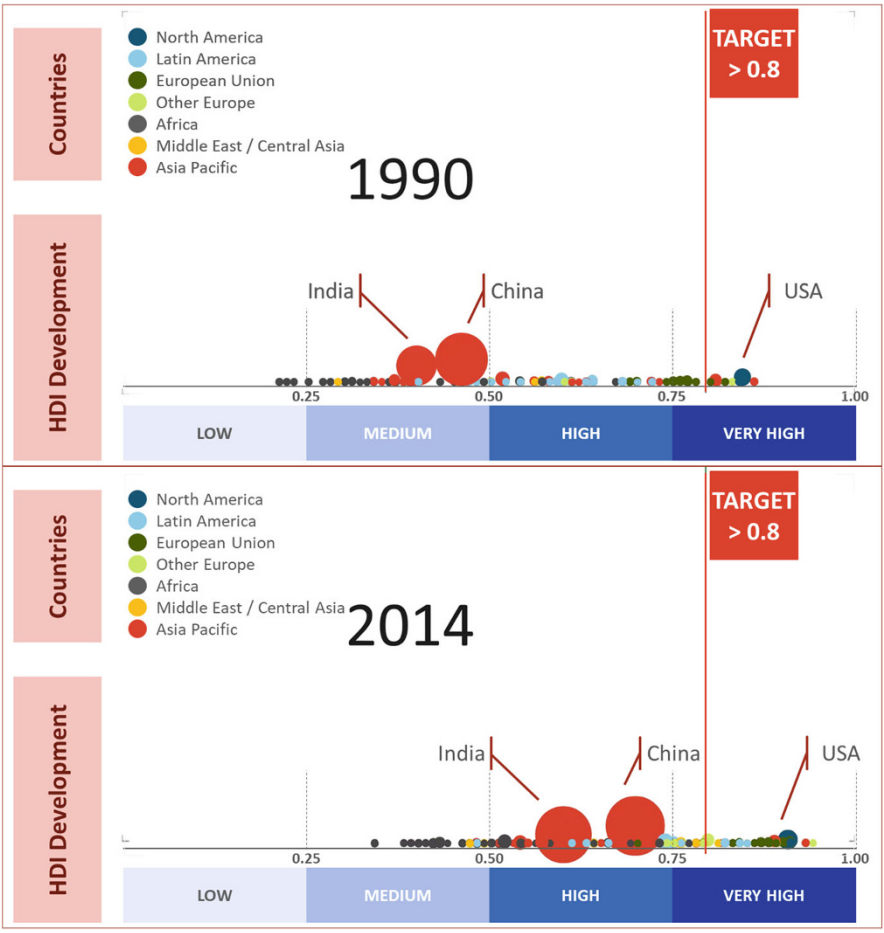

Fig. 17.2 Human Development Index (HDI) Development 1990–2014 (diameter indicating population size, data from United Nations Development Programme UNDP)

While the individual countries advance their HDIs, their ecological footprints move way above the maximum threshold, marking our biosphere's limited capacity to provide its eco-services that enable us to produce the resources we consume and enjoy, and to absorb the waste we produce. Metaphorically speaking, our species is eating up the planet at an exponential rate, as illustrated in Fig. 17.3.

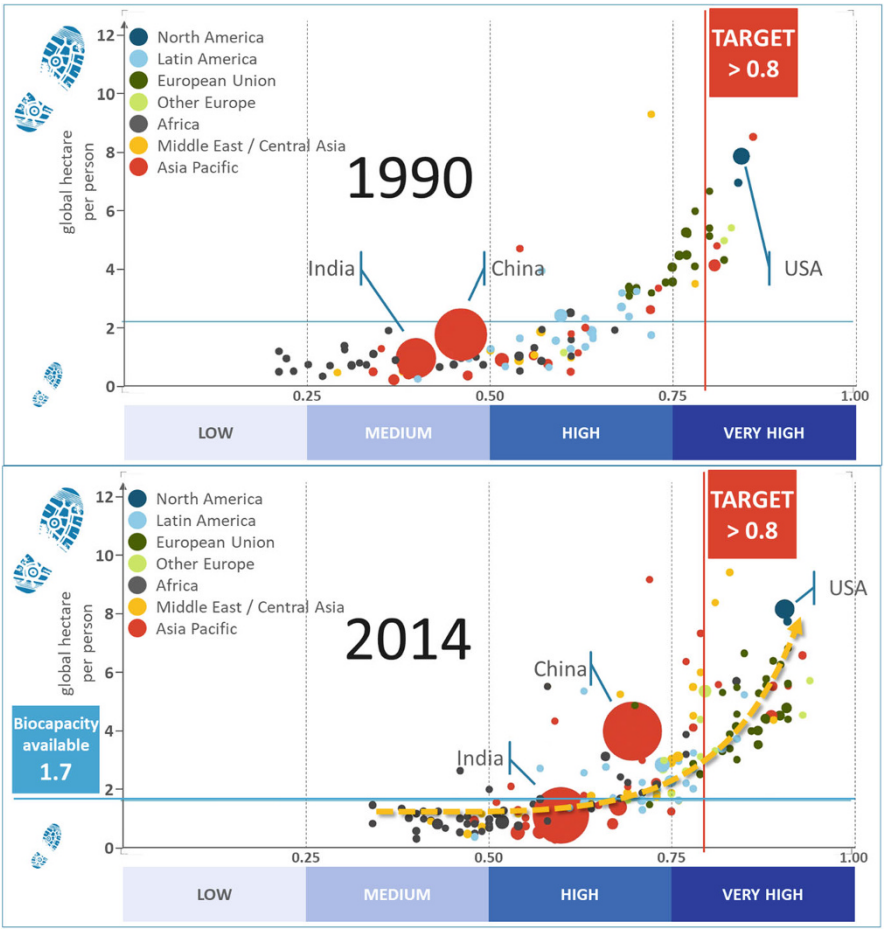

Fig. 17.3 Human Development Index (HDI) development vs. Development of Demand for Earth's Eco Services of 1990 vs. 2014 (Circle diameter indicating country population size). Refer to The Natural Step (2018b) for an animated version

The dramatic consequences of this malpractice can no longer be denied and comprises by far more than just the increasing signs of climate change, indicated also by scientists' proposed epoch dating: the Anthropocene.[7]

[7]"The Anthropocene defines Earth's most recent geologic time period as being human-influenced, or anthropogenic, based on overwhelming global evidence that atmospheric, geologic, hydrologic, biospheric, and other earth system processes are now altered by humans. The word combines the root 'anthropo,' meaning 'human' with the root '-cene,' the standard suffix for "epoch" in geologic time. The Anthropocene is distinguished as a new period either after or within the Holocene, the current epoch, which began approximately 10,000 years ago (about 8000 BC) with the end of the last glacial period." (Anthropocene.info, 2018); see also Chap. 1.

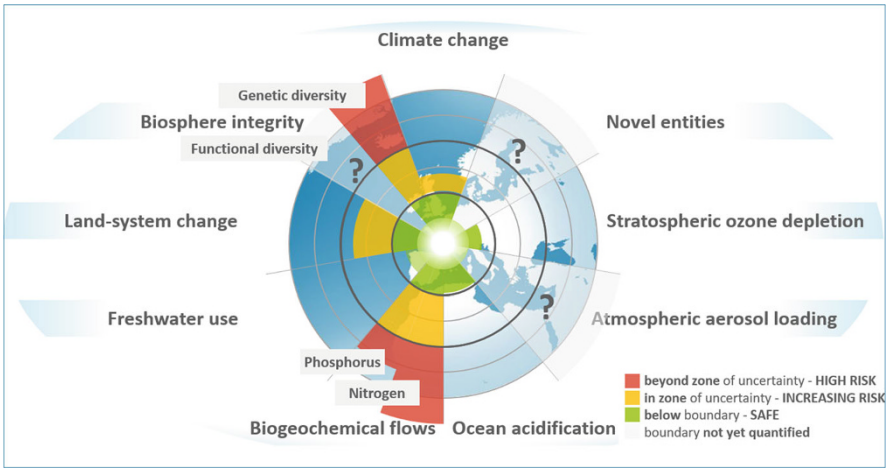

Fig. 17.4 Planetary Boundaries (social challenges not considered) (Adapted by SGA from Steffen et al. (2015))

Our planet is seriously ill due to the action of just one species we ironically named *Homo sapiens (Latin: "wise man")*. Various symptoms of patient Earth are well expressed by the so called *Planetary Boundaries*, a concept developed by a team of internationally renowned scientists led by Johan Rockström.

Rockström et al. (2009) identify nine critical Earth-system processes, which regulate the stability and resilience of the Earth, and propose, to the extent possible, quantitative planetary boundaries, illustrating a "safe operating space" (Rockström et al., 2009) within which humanity can continue to develop and thrive for generations to come (Steffen et al., 2015).

Figure 17.4 illustrates, how critical the situation already is in several categories (indicated in orange and red), while for some, such as *Biosphere Integrity* (e.g. insects for pollination) and *Novel Entities* (e.g. micro-plastics in the oceans), sufficient scientific data is not even yet available (indicated with "?").

To further complete the picture of our *success story,* we should also look at social aspects on a consolidated global scale. Inspired by the initial Planetary Boundaries, economist Kate Raworth developed the idea into a "safe *and just* operating space" with her "*Doughnut"* (Raworth, 2012) by adding *Social Boundaries*. Visualized with twelve social indicators from a variety of sources,[8] she shows that despite us

[8]"The 12 dimensions of the social foundation are derived from internationally agreed minimum social standards, as identified by the world's governments in the UN Sustainable Development Goals." (Raworth, 2018); Illustrative indicator sources: FAO, World Bank, WHO, UNDP, UNESCO, UNICEF, OECD, IEA, Gallup, ITU, UN, Cobham and Sumner, ILO, UNODC, and Transparency International. See also Chap. 1.

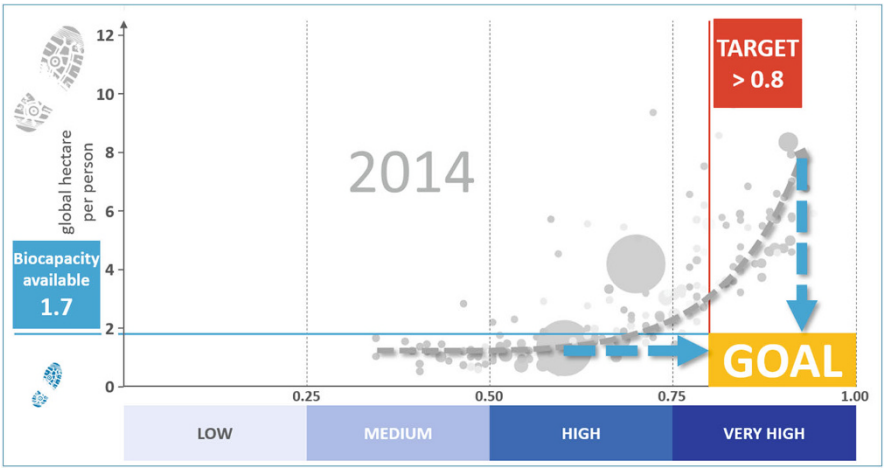

Fig. 17.5 HDI vs. EFP—Goal and Need for Action (Adapted by Sustainable Growth Associates™)

crossing these planetary boundaries, there is still a huge part of society where people's basic needs and rights are not met (leading to various knock-on effects). With that and other models she challenges current views on economics, taking into account relevant aspects currently left out (Raworth, 2017).

In a nutshell, while at first glance the HDI development and similar models indicate that nations societies overall *seem to be* **doing the right things**, they obviously *seem not to be* **doing things right**. If society in total does not adapt its behavior, it will be crushed by this development (The Natural Step, 2018a)—as from here referred to as one of the two "killer waves," the *Sustainability Wave.*

As attempting to turn back the clock on the HDI development is neither a feasible nor desirable solution, there is only one *Goal* that should be pursued to meet our needs: "*The Lower Right Corner*" as illustrated by Fig. 17.5.[9]

But how can the contradiction of businesses' activities, being a main driver for societal advancement on one hand, yet again a main driver for ecological breakdown on the other hand be resolved?

Since—according to Albert Einstein—we obviously "cannot solve our problems with the same thinking we used when creating them" another perspective seems to be required as prerequisite to reconcile economy, society, and environment.

[9]Alternatively, The Natural Step introduced the Funnel metaphor to depict our sustainability challenge where declining walls indicate decreasing space to maneuver which need to re-open. Kate Raworth visualizes and speaks about the "safe and just operating space" between the social foundation and environmental ceiling in her Doughnut.

17.2 "WHAT"—To Be Comprehended and Embraced: One Individual—The Systems Perspective

17.2.1 The Individual in the Systems *Context: Addressing the Reflected Integrator as Member of the New Leaders*

Summarizing the above, the following can be stated so far: Our economic behavior, essentially motivated and shaped by *Key Decision Makers* and *Influencers*, has—on average (!)—been leading to an impressive development of our societies' quality of living. However, overwhelming evidence shows that this development happens

- at the cost of significant parts of societies, not participating in, or benefiting from, this development,
- at the cost of our environment, as prerequisite to sustain all our lives, and
- at an exponential rate.

Hence, continuing this economic behavior is not sustainable, requiring any organization to fundamentally "Rethink Strategic Management."

It can be safely concluded that the way we so far understood the correlation of Environment, Society, and Economy—often referred to as People, Planet, Profit, or "Triple Bottom Line" (Elkington, 1997) does not reflect its true interdependence, nor the required trade-off mentality.[10]

An often cited, traditional picture depicts these systems as overlapping domains at best, with the Economy being too big to fail—a picture which can no longer be held up. Taking a systems perspective, the correlation of these three domains is better illustrated as nested circles with the individual in the center as shown in Fig. 17.6.

This picture might look as splitting hairs at first, however, it illustrates a fundamental consequence in its interpretation. While an outer circle can exist without the inner circles, this is not true, the other way around. The environment can exist without society, but society certainly not without the environment. Furthermore, there is no economy without a society, instead, it requires a healthy society to develop and uphold a healthy economy. With organizations being part of the economy, and individuals being part of organizations, individuals will fail when their organization fails, organizations will fail, when the economy fails, the economy will fail, when the society fails, and society fails, when the environment fails.

In other words, operating within the limitations of the outer systems—1st Environment, 2nd Society, and 3rd Economy—is imperative for any organization to become and remain sustainable. This is a fact that will overthrow almost all of today's organizations' way of doing business. Combined with the simultaneously occurring *Technology Acceleration Wave* any organization must live through a fundamental transformation process to become fit for the future, and given the outlined, negative

[10]As also reflected by Elkington in his "strategic product recall" of the Triple Bottom Line at its 25th anniversary (Elkington, 2018).

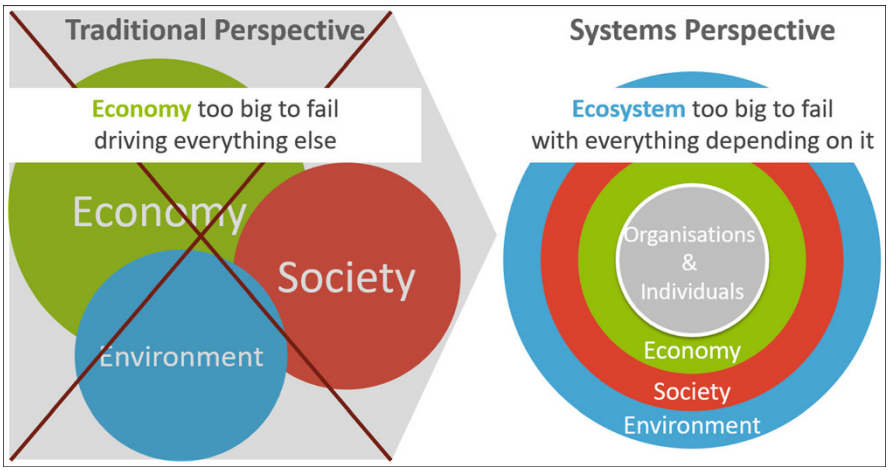

Fig. 17.6 Traditional vs. systems perspective of environment, society, and economy (Adapted by Sustainable Growth Associates™) (Graphics based on Senge et al. (2008, p. 102), text based on Doppelt (2008, p. 18))

socio-ecological symptoms, that transformation (achieving the Goal as illustrated in Fig. 17.5) has to happen ASAHP (As Soon As Humanly Possible).

Any *Key Decision Maker*, comprehending and embracing this conclusion, steps into a next level of awareness and chooses to take a systems perspective of the reflected *Integrator*, thus becoming a member of the constantly growing Group of *New Leaders*.

These *New Leaders* embrace change and show a sincere commitment to getting it done. They no longer ask the often-heard question of executives, taking the traditional "management" perspective,

"*Where is the business case of 'Sustainability'?*"
(Can we afford to invest in this initiative?)

instead, rephrase it into a "leadership" perspective

"Where is the 'sustainability case' for my business"?

or, in other words,

"*How can I use 'Sustainability' for my business to stay and thrive in business?"*
(Can we afford NOT to invest in this initiative?)

Answering this question requires to understand, what "Sustainability" in the *Sustainability Wave* truly means.

17.2.2 The New Definition of Success: Acknowledging the Rules of the Sustainability Game

The *New Leader* no longer doubts the dependency of his or her organization of the outer systems, but needs guidance on what this really means. While this guidance

has been available for many years, it appears that the findings of the numerous great minds behind it required their time to break through.

In the mid 80s, scientists from different branches, disciplines, and universities supported Dr. Karl-Henrik Robèrt, founder of the non-profit "The Natural Step®,"[11] in his quest to find the key causes of our unsustainable course by gaining consensus with an attitude of: *what is it that we CAN agree on?* The multi-disciplinary science review process, together with system thinking helped to find a principle-based scientific definition of sustainability and a method for operationalizing it, which can be summarized as "backcasting from sustainability principles."

The process and results have been repeated, improved, and confirmed by the science community. The resulting The Natural Step framework, or Framework for Strategic Sustainable Development (FSSD) (Broman and Robèrt, 2015) has been successfully applied by working with business and society and described in hundreds of publications over the past three decades. In more recent years, the interdependencies with and mechanisms behind societal sustainability have also been further explored, defined, and refined.

The FSSD as advocated and applied by The Natural Step® provides the structure and principled guidance the *Key Decision Maker* and *New Leader* is looking for, and which companies around the world such as Nike®, Interface®, Philips®, Pratt & Whitney®, Mövenpick Hotels & Resorts, Volvo®, Electrolux®, Scandic® Hotels, Scott Bader®, just to name a few, have already considered, selected, and used for the development of their people, business and/or enterprise, each in their own degree of progress on their journey.

At its core, the Framework introduces three ecological and five social Sustainability Principles (SPs) that are representing the key causes of unsustainability and can be used as the rules of the game to backcast from (illustrated in Fig. 17.7 and described in Fig. 17.8). To safeguard the sustainability of the superordinate systems *Environment,* respectively *Society* or, in other words, the possibility for humanity to flourish, these principles, or system conditions, *must not be systematically violated* by any of the subsystems Economy, Organizations, or Individuals.

As said, together, the SPs define the conditions, or the "rules" of the game within which needs to be played to allow the possibility to "win." As such, they are not "just another great idea" in the world of sustainability, where to be fair, a new concept seems to be introduced every day. Violating the SPs is in a way like disregarding gravity while jumping from a roof top without any means for a safe landing. In the case of socio-ecological sustainability the fall might take longer, given our perception of time, but the impact will be just as deadly, with the current generations deciding over both, their own fate as well as the fate of future generations now (as outlined in Sect. 17.1.2).

At the same time, the SPs offer a tremendous amount of freedom, while inspiring innovation and creativity in the same way design constraints, or design principles do. Describing what we must *not do*, the SPs also tell us what we *can do*: Anything

[11]Disclaimer: Both authors relate to The Natural Step Germany and the international TNS network.

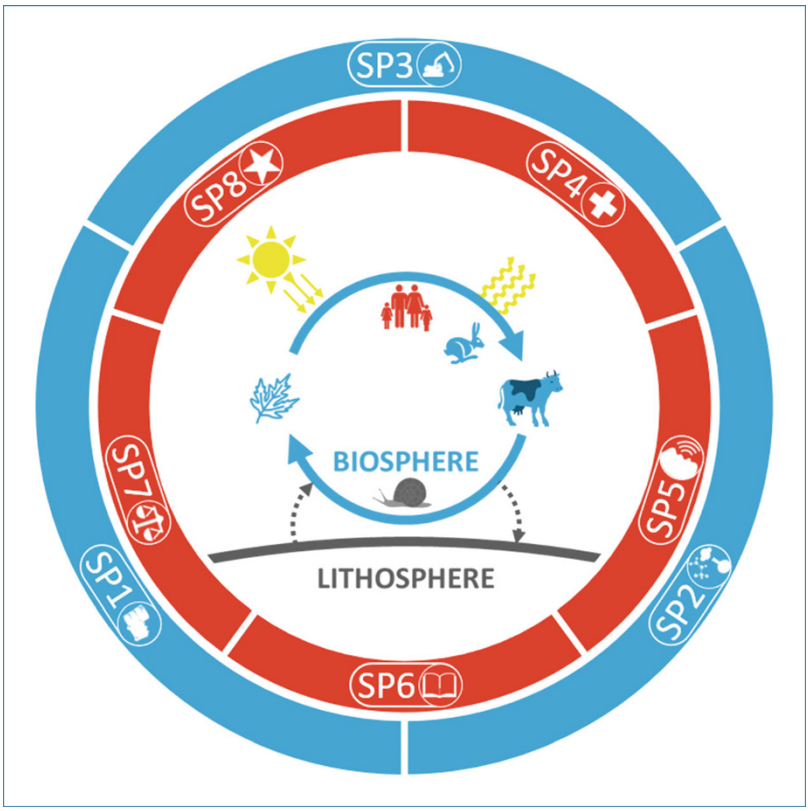

Fig. 17.7 Environmental and social sustainability principles to allow for continued flourishing (The Natural Step® and Sustainable Growth Associates™)

else! They have been uniquely designed to be necessary and sufficient to cover the relevant topics, generally applicable and scalable, concrete and non-overlapping.

Hence, next to helping us understand how humanity is challenged and where innovation needs to take place, the SPs provide inspiration and guidance for purposeful, context-driven innovation, and (both individual and collective) leadership. If that doesn't sound intriguing for the Key Decision Makers and creative minds out there, what does?

The SPs make the term sustainability tangible and as such, provide all an organization needs to know AND apply to become fit for the future—at least with respect to the social and ecological systems we depend on.

To drill down to what this means for an organization, Fig. 17.9 details the correlation of an Enterprise in the Systems Context. As a member of the systems Environment, Society and Economy, an *Enterprise* has an operational presence in, and interdependence with all three domains. Whatever the Enterprise's activities, they interrelate with its customers, employees, suppliers, other players of the economy, other members of society, the environment's natural resources, and the direct or indirect access to the sun as primary energy source of all embedded systems.

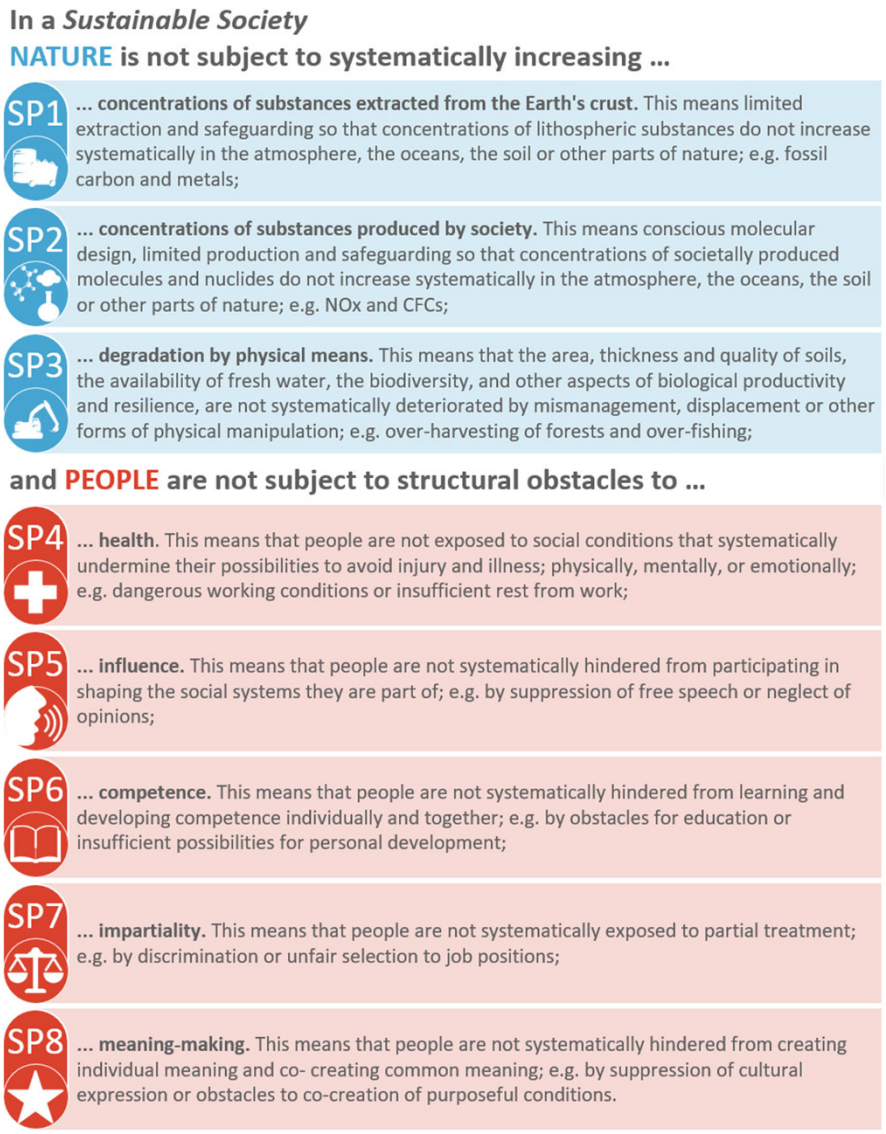

Fig. 17.8 Three environmental and five social sustainability principles—definition (Broman and Robèrt, 2015) (Graphics adapted from The Natural Step®©)

Inspired by limited progress of sustainable development in business overall, and building on The Natural Step's definition of socio-ecological sustainability, the Future-Fit Foundation, has taken the initiative to define further what it means for a business to be future-fit® (Future-Fit Business Benchmark© 2018a, b). The limitations of progress lay partially in how organizations and their shareholders define success and what they compare, or benchmark, themselves with.

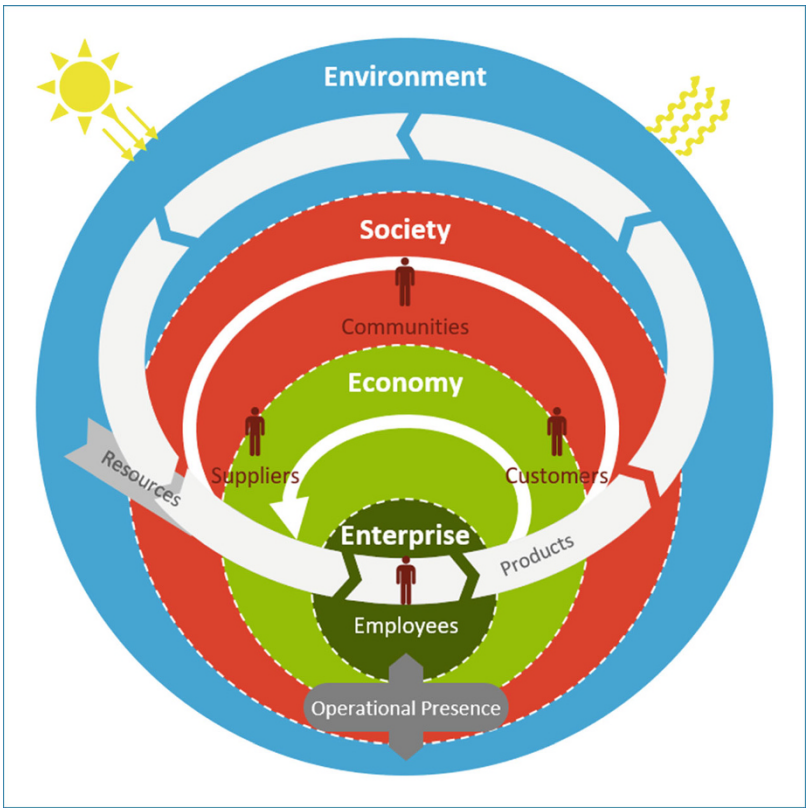

Fig. 17.9 Value streams in the systems context (Adapted by SGA from The Natural Step and Future Fit Business Benchmark©)

As illustrated in Fig. 17.10, comparing an organization's current state with

- past year(s)' performance, offering no guidance at all due to contextual changes and missing direction,
- peers' current performance, means—at best—showing off as "least bad,"
- its own or its stakeholders' moving targets and opinions, jeopardizes losing track and stimulating incremental improvements at best.

Hence, only the comparison with a measurable definition of socio-ecological future-fitness, i.e. related to success in the outer systems, provides a clear direction and the necessary information about the distance still to go. Striving for this state is in the organization's own best interest as well as that of others. Furthermore, helping others to move towards and achieve their goals creates value with corresponding potential returns.

The idea behind the Future-Fit Business Benchmark (FFBB) is to provide an answer to the following two questions:

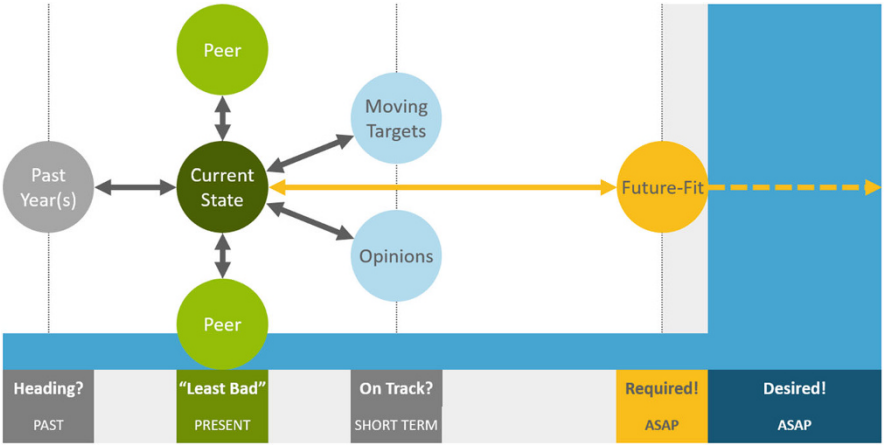

Fig. 17.10 Definition of future-fitness compared to other sustainability measurement approaches (Adapted by SGA from Future-fit Business Benchmark© R2, 2017)

Now that we have a science-based definition of the socio-ecological sustainability (the FSSD)

1. "How would we know a truly sustainable company if we saw one?"
   and
2. "How can we tell, how far away a company is now from where it needs to be?"

In a multi-year[12] process, they derived the so-called Future-Fit Goals, described in the organization's (FFBB) (Future-Fit Business Benchmark©, 2018a). The FFBB answers these questions by:

1. defining 23 Future-Fit Goals to achieve break-even, equal to operating within socio-ecological limits,
2. requiring 100% fulfillment of all FFBB goals as mandatory target, allowing to determine the remaining distance to go, and
3. promoting corresponding Positive Pursuits, necessary for rebuilding—to the extent possible—the socio-ecological capital that has already been depleted.

The goals comprise five areas (see also Fig. 17.11), namely an organization's:

- *Business Inputs* it depends on, covering energy and any natural resources,
- *Business Activities* it conducts, incl. up- and downstream value chain activities, covering e.g. no-harm emissions, community health, zero waste, etc.
- *Employees* and *Workers* it engages, covering e.g. living wages, fair employment, health and safety, etc.
- *Products & Services* it provides, covering e.g. honest communication, no harm to people and the environment, product repurpose, etc.

[12]One of the authors, Edwin Janssen, was involved as Technical Advisor since the beginning, early 2013.

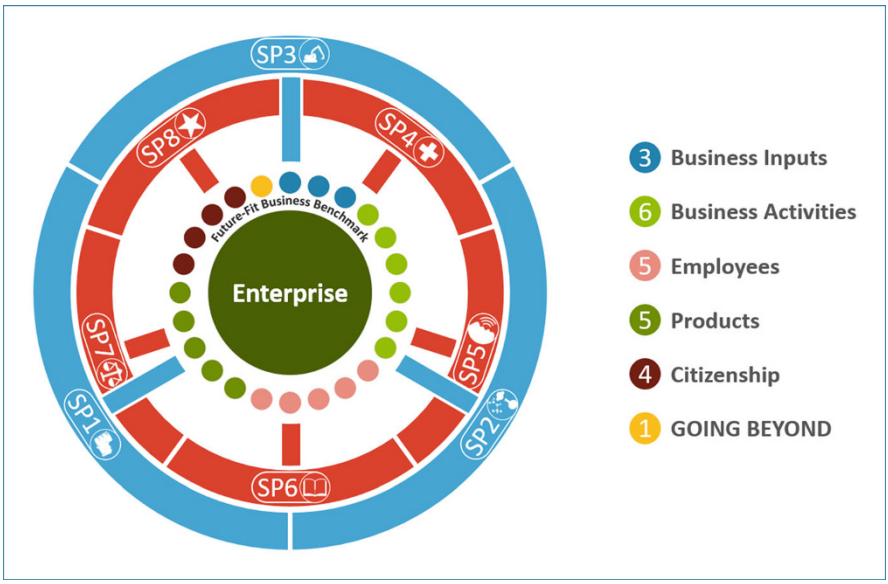

Fig. 17.11 Eight socio-ecological sustainability principles and 23 derived organizational future-fit goals broken down by category (Graphic: Sustainable Growth Associates, Goals from Future-Fit Business Benchmark©, 2018a)

- *Citizenship* it contributes to covering e.g. underlying ethics, tax payments, lobbying activities, etc.

Nonetheless, as important as social and societal sustainability and the various tools and concepts mentioned are, terms like "full sustainability" and "Future-Fit®" obviously need to be treated with caution by the *New Leader*. While achieving all goals of the FFBB is mandatory for any organization and increases its likelihood to flourish (Ehrenfeld and Hoffman, 2013),[13] their pursuit alone is insufficient for warranting business success and continuity. After all, embedded in *Society* and *Environment*, there are still other human constructs such as the *Economic system* and the *Technosphere*, with its own (flawed) design and success criteria (which are not covered here).

To put it straight: organizations striving for, or even already meeting, the FFBB goals can still be outperformed by other market players, showing the same socio-ecological performance, but simply do better on the economics. Both players doing the right things, can still show substantial differences in doing them right, in particular, when it comes to surfing the *Technology Acceleration Wave*.

There are vast amounts of businesses out there, all with their specific reasons to exist and approaches to create value for a given target group. Although striving for

[13] See also Chap. 8.

Fig. 17.11 (continued)

socio-ecological success will foster cooperation, it by no means marks the end of competition, although it will eventually become a fair one.

Hence, the *New Leader's* challenge is to unfold his or her organization's capability to visualize its *raison d'être* and future contribution to individuals and other

organizations, within the socio-ecological boundaries. This requires the courage to take a bold first step and many subsequent steps. The *New Leader's* reward will be, among other things, an agile, self-learning, context-driven, purposeful, value creating organization of people, that will always remember this turning point as the seed that enabled them to grow into what they have become.

17.3 "HOW"—Thriving Within the Systems: One Organization—Making It Happen

So now that the "WHY we must change" and the "WHAT needs to be done," is clear, the "HOW to do it" turns out to be the next challenging question. Two processes named *ACER* and *ADVISE* provide a practical approach that *Key Decision Makers* can work with.

17.3.1 The ACER Process

For any change to happen, an individual—and later an organization—should have the right mindset. For this to happen they must first ***A****wake!* to being able to ***C****omprehend!* why change is necessary and what needs to be done how, to hopefully ***E****mbrace!* the need for change as prerequisite to ***R****espond!*, taking the first of many steps to follow (see Fig. 17.12).

Below, these steps are explained in reverse order, starting from the desired behavioral change. Ultimately, change is about doing! Doing things differently or/and doing different things. No matter if it is giving up smoking, changing one's diet, or altering course of an organization. The deed is what counts, not the intention alone, in other words—it is about to "*Respond*!."

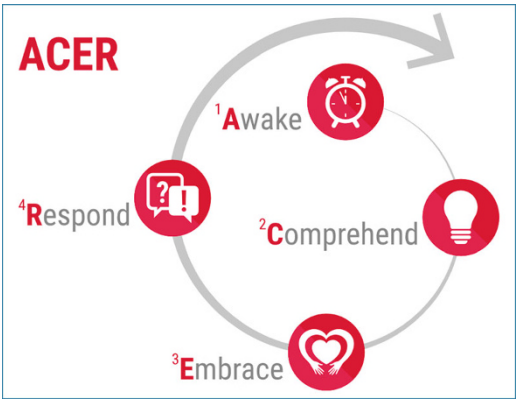

Fig. 17.12 The ACER Process to induce change (Source: © Sustainable Growth Associates)

However, for any individual to *Respond!* something more essential is required.

Respond! requires motivation. The pain one no longer wants to endure and/or the gain one wants to achieve. To build on the examples before—the imagination of getting rid of shortness of breath, while maybe starting to enjoy the beauty of scuba diving, the desire to reduce one's limited mobility, while becoming capable of an easy run through nature, the vision of an organization no longer fearing competition, while developing towards an inspiring, thriving enterprise. So, *Respond!* requires the individual to *Embrace!* the need for change, which can become a vast challenge, when one's very essence is touched.

However, for any individual to *Embrace!* something more essential is required.

Embrace! requires understanding. As a species, we seek meaning. We ask questions on why, what, how, when, who, etc. We collect data, generate information, build knowledge, create understanding, and eventually might develop wisdom. Facts that reveal during this process are not always to our liking, nonetheless *Embrace!* requires the individual to *Comprehend!* the need for change.

However, for any individual to *Comprehend!* something more essential is required.

Comprehend! requires awareness; to at least have the prospect of change. Any individual needs to have first and foremost the capacity and capability to acknowledge that something is going on that asks for his or her immediate attention—to *Awake!* which not everyone is capable of for any given challenge.

This chapter has been structured applying this very logic:

Awake! is about encouraging *Key Decision Makers* to reflect on both their business as well as their private perspective. Generally, they recognize, that—overall—they might be contributing substantially to the well-being of society in the short term, while simultaneously being responsible for destroying it in the long run, if they continue doing business as usual. Acknowledgement of interdependencies to either flourish or perish with the larger society and the environment is relevant. Awoke, they might be open to systems thinking and understanding.

Comprehend! provides this new perspective—the systems perspective—and outlines a clear definition of success on environmental and societal level as rules of the game in the economy: the three Ecological and the five Societal Sustainability Principles (SPs). Building on the SPs, the Future-Fit Business Benchmark© provides measures and figures to translate them into a language, which allows for an easier application in the business world. The hardest step however is yet to be taken.

Embrace! touches the individual at his or her very core. At this point The *Key Decision Maker, New Leader, Influencer, Father, Mother, Friend, Adventurer, Nature Lover, Philanthropist, Politician, Artist, Scientist, Consumer*, etc. either struggles with, or strives for change. A fundamental response is required, coming along with responsibility, no matter the decision, depending on intellect, attitude, maturity, empathy, and personal values—one's very essence.

The *New Leader*, who takes on this responsibility requires *Response-Ability*, the ability to *Respond!* This is operationalized with the (A)DVISE process, elaborated next, where "A" as in "*Acering"* also applies to others.

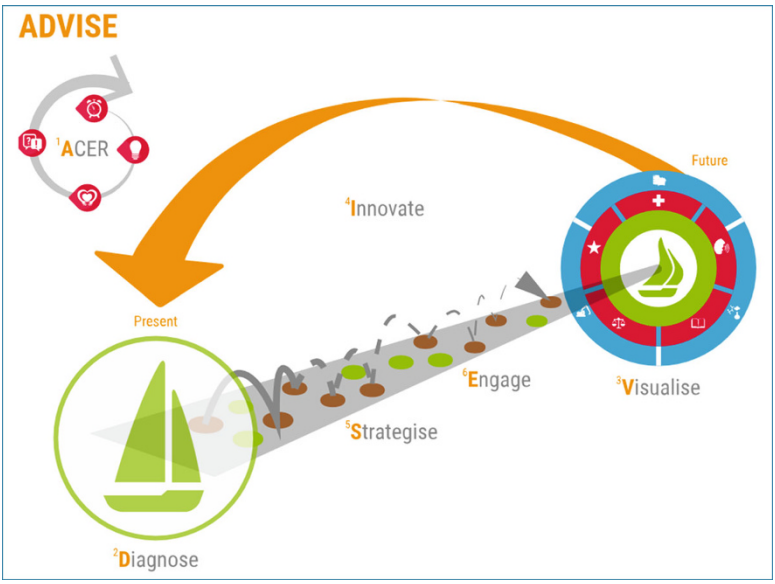

Fig. 17.13 The ADVISE Process (Source: © Sustainable Growth Associates)

17.3.2 The ADVISE Process

With the *New Leader* embracing the need to change, *Respond!* summarizes a second process, requiring to (Fig. 17.13)

- ***A**cer!* **Key Stakeholders**, as prerequisite to[14]
- ***D**iagnose!* your position, to collectively
- ***V**isualize!* your future, allowing to
- ***I**nnovate!* for success, to ultimately
- ***S**trategize!* your approach, allowing to
- ***E**ngage!* and execute your transformation.

At first, the ADVISE (Fig. 17.13) process seems to depict a most familiar approach, which has probably been applied since mankind has begun sailing the oceans. Take for example Columbus' enterprise of discovering a new route to India. Such an endeavor certainly required a lot of *acering* of key stakeholders (although unquestionably nobody called it like that). Then, *diagnosing* his venture's position was just as essential as *visualizing* the future triumph. Both determined the delta for which *innovative* solutions needed to be found, prior to developing the most promising *strategy*, as basis to finally get the gang of pioneers *engaged* to set sails.

[14]"*ACERing* Key Stake Holders" follows the same logic as before but asks for a different approach. Instead of the individual level, it is now the organizational level that needs to find its turning point. Without getting the Key Stake Holders on board, change is simply not going to happen. See also Part III of this book.

While it is beyond the authors' knowledge, if Columbus acted this strategically, the example as such illustrates the well-established, proven approach to strategy development and implementation. This process is everything but linear, as a matter of fact, it requires regularly revisiting the individual steps in short intervals.

Then what is so special about the ADVISE process?

It is the application of each step *taking a whole systems perspective*.

Any organization assessing its **p**olitical, **e**conomic, **S**ocietal, **t**echnological, **l**egal, and **E**nvironmental context (PESTLE), can now build on an unwavering correlation of the two outer—and as such—most relevant systems of *Environment* and *Society*, both with their crystal-clear definition of dependence and success. As such, the complexity of the peStlE context is not just reduced by two, so far shaky, variables, it rather wins two determinants that the other four must subordinate to, which could as well be expressed as follows:

$$p, e, t, l = f(E, S)$$

$$with\ E = SP1 \cup SP2 \cup SP3\ and\ S = SP4 \cup SP5 \cup SP6 \cup SP7 \cup SP8$$

With this perspective, promising technologies might become a dead end or need radical changes, disregarded technologies might win in significance, novel issues might reveal that have been invisible before, well proven business models might no longer have a future, and unprecedented business models might evolve and praised investment ideas might not bring the expected ROI.

In a nutshell, it is the ADVISE process with its related approach, tools and methodologies, that enables an organization to determine its very specific, own future-fitness goals and that becomes the radar, compass, sonar, log, etc. to navigate the fog of VUCAD in unchartered waters.

The individual steps of the ADVISE process:

17.3.2.1 *Acering!* Key Stakeholders

As it is unlikely that the *Acered Key Decision Maker* alone generates the required momentum for the journey ahead, the organization's *Key Stakeholders* need to get on board. It is therefore worthwhile to take a closer look at five personas[15] that can be portrayed, when relaying and anchoring the message on socio-ecological sustainability as indispensable condition for the organization's future-fitness:

The *Innocent*, who simply lacks the potential to even grasp the topic, not to mention its relevance.

[15]These personas are anecdotal types, based on numerous interactions with individuals, many of them being Key Decision Makers, and their reactions respectively responses to the topic of socio-ecological sustainability from a systems perspective. They are helpful definitions to prioritize communication measures.

The *Ignorant*, who does have the potential to capture the topic and its relevance, but unconsciously follows reactive patterns of denial or consciously refuses to confront the facts or recklessly disregards the consequences of acts.
The *Incompetent,*[16] who accepts the topic and reacts to related obligations, while lacking the skills, confidence, and proficiency to address appropriate action.
The *Independent*, who welcomes the topic and responds earnestly, yet underperforms due to a reductionist approach.
The *Interdependent*, who embraces the topic and responds holistically taking a systems perspective.

While the *Interdependent* does not require to be "*acered*," the *Innocent* would not be receptive to it. With the *Ignorant* requiring substantial effort, it is the *Incompetent* and the *Independent* being the most promising Personas that could be won for starting the movement.

While the Personas *Innocent* and *Ignorant* evidently should not be part of the crew kicking off the work ahead, the team as such may quickly be enlarged with contributors across all functions and levels of the organization. If, however an *Innocent* or *Ignorant* persona must be part of this first step, e.g. to meet existing governance rules, they will require substantial attention and need to be proactively managed.

For some *Key Stakeholders* this will just be the change they desperately have been waiting for, others will have to leave their comfort zone, and some will be afraid of the unknown and maybe even decide to leave the organization.

This is a very delicate situation for the organization and asking for appropriate leadership. Confidence and commitment are just as important as empathy and the ability to integrate. After all, systems thinking acknowledges diversity, which doesn't mean that there won't be any more tough decisions to make.

The goal of this first step of ADVISE is to help the team of initial change agents to discover the potential value of a strategic commitment to future fitness. Following the ACER Process, this requires building the necessary awareness, competence, and dedication through appropriate skill development, in the form of inspiring key notes, interactive workshops, tailored on- and offline training, dedicated interactions with other organizations, etc.

Networking with other organizations, who have gone through a similar process before, helps to generate additional momentum while learning from the successes and failures of others. Experience shows that once an organization is positively infected, they develop incredible creativity to get others enthused as well.

Now, that the first Key Stakeholders are on board, truly aligned, equipped with the necessary knowledge of future-fitness, understanding the related approach, embracing their special role, they form the initial *Team of Change Agents*, ready to play their part in the journey ahead.

[16]Incompetent in this case is meant as being fully aware that the current understanding of an individual, or organization does not suffice to master a given challenge.

17.3.2.2 Diagnose! Your Position

The goal of this second step of A**D**VISE is to have a thorough understanding of the organization's current reality in relation to the yet to be further defined shared new ambition. Diagnosis consists of three complimentary views which can be referred to as the three Cs or C^3, namely

- The *Context* it maneuvers in,
- The *Cognition* it is seen in,
- The *Condition* it operates in.

Context is the inside-out (organization's perspective) as well as the outside-out (external expert perspective) analysis of the political, economic, social, technological, legal and environmental opportunities, and threats of the entity under investigation.

Supported with competent external support, the *Change Agents* will identify and assess trends critical for their business. The FSSD's Sustainability Principles—defining success regarding *Society* and the *Environment*—will quickly reveal a realistic assessment of a given industry, with some likely trends to be expected—which may differ from other forecasts—and call for appropriate moves.

Due to its dominating force and speed, *Context* also provides a landscape of technologies crucial for the organization's success, answering key questions such as: How does digitization impact our business when taking the systems perspective? What innovative technologies evolve that could accelerate our transformation towards future-fitness? Which industrial trends can be ignored, and which must be taken seriously?

Metaphorically speaking, *Context* provides the necessary intelligence on the local weather, tides, currents, shelves, traffic, etc. as well as their most likely developments. In practice, the time horizon to consider is much longer. It provides a central input to consider, once the organization has identified its destination and developed its course towards it.

Cognition is the outside-in analysis of the organization's perception. What assets and liabilities do external key stakeholders such as customers, suppliers, competitors, societal organizations, and alike see, when assessing the organization's Leadership & Governance, DNA & Culture, Processes, Products & Services, Communication, and Finance.

Gathering this intelligence asks for corresponding interaction with these external stakeholders. This step provides numerous opportunities to connect with them on a new level. A fact also relevant for all other steps of the ADVISE process.

Metaphorically speaking, *Cognition* provides the necessary intelligence if and to what extent the outside world not only rewards the organization's current sailing performance (economic behavior), but also trusts in it to make a significant difference in mastering the turbulent winds ahead (future potential).

Condition is the inside-in analysis of the organization's strengths and weaknesses, applying the same structural approach as *Cognition*. For obvious reasons,

Condition can become a deep dive. It is about being ruthlessly honest in particular when it comes to assessing the organization's Leadership & Governance, DNA & Culture as well as its products & services and the underlying processes.

There is a variety of tools and methodologies available to model, assess, benchmark and score the different aspects of the organization and its products. In general, these require adaptation or specific application to ensure optimal insights for this purpose. Some have been specifically designed to support context-driven purposeful innovation leadership, such as the Strategic Life Cycle Assessment (SLCA^{SM}) methodology (The Natural Step, 2018b), which has the purpose of "designing-out" unsustainable aspects throughout the life cycle of a product and/or service. Their description would go way beyond the scope of this chapter; however, it is crucial that the use of any of these tools receives the right mindset, facilitation, and experience to deliver meaningful results.

Comparison or benchmarking should happen in relation to the organization's ambition (and excellence) to understand the gap to be bridged. Metaphorically speaking, *Condition* provides the necessary assessment of actual capabilities and readiness of ship and crew to sail charted and uncharted waters.

While *Diagnose!* might sound like an extensive amount of work, which it can be, it can also be performed at a lower level of detail, just to get started and then expand gradually. *Diagnose!* usually reveals significant liabilities that need to be dealt with and assets that can be leveraged including low-hanging fruits, providing potential to positively influence the organization's top and/or bottom line. In addition, it further develops the organization's competence in system thinking and leads to a growing number of *acered* members, fueling the desire to get going and provides crucial input for the next step of ADVISE.

17.3.2.3 *Visualize*! Your Future

The organization, now understanding its position and capabilities in stormy waters, i.e. the above-mentioned *Sustainability* and *Singularity "Killer Waves,"* has developed sound intelligence, which already translates into a competitive advantage. However, the wind direction is always right, if one does not know where to go. Just to shoot for meeting sustainability targets, or even future-fit® goals, is simply not enough. The required transformation to flourish, within the boundaries of the outer systems, asks for the development of a shared *Vision*. It should clarify what it is to move towards and what it is to develop into, based on the answer to the question: why is this organization needed at all? Its *Purpose*!

Answering the question, why an organization would be needed in a sustainable future provides access to its true nature. To take an extreme example: with the clear definition of socio-ecological sustainability, which any organization must achieve, since its business success depends on it, why would a manufacturer of e.g. land mines, or with processes or products that harm people in any way, be needed in such a future? That said, elaborating an organization's *Purpose* can not only be difficult, it

can also be painful, except when dealing with the *Innocent* or *Ignorant*, with whom the approach doesn't resonate anyway.

When it comes to the *Vision*, let's emphasize that the future is not written yet. An organization, having systems thinking embedded, would not *guess* the most likely future (based on forecasted scenarios), but instead aspire to *create* the most desired future (based on acknowledged success principles for the systems it depends on). It is therefore in all our hands and as such, in the organization's hands, to do just that: contemplating, creating, designing, building it. *Visualize!* demands the organization to elaborate, what future it desires, what role it wants to play in the process of creating such a future, and how it needs to advance for becoming able to fill this role.

A compelling *Vision* and especially a powerful *Purpose* contain the seed for success. They create excitement and encourage as well as challenge people's creativity and capacity to innovate. They attract others, who want to contribute. They ask for, but also support, leadership by providing direction, promoting alignment, and fostering commitment.

From the systems perspective, *Visualize!* integrates a variety of (online) tools, methodologies, concepts, and sources to elaborate the organization's purpose and develop its vision.[17] The development may take several intense days and may be spread to cover multiple weeks, or months depending on the level of depth and (type of) engagement. *Visualize*! is a three-phase approach of

- Inspiration
- Imagination
- Integration

Inspiration includes stimulating homework for the *Change Agents* and may involve meeting with family and friends to reflect—obviously on a voluntary basis—a variety of thought and emotion provoking questions about the future they want to live in and the role their organization is supposed to play in this future. Their reflections, irrelevant the format, deliver substantial input, and scene setting for the next phase.

Imagination aims to achieve unfolding of and agreement on the *Core Values* and its "*Massive Transformative*" (Isamil, Malone, & van Geest, 2014) *Purpose,* a vibrant description of the future the organization wants to contribute to and the "*Big, Hairy, Audacious Goal*—BHAG" (Collins and Porras, 1996) it wants to achieve by doing so.

Already stirred by the first phase *Inspiration*, generally all *Key Stakeholders* experience the *Imagination* engagements as very emotional. Apart from reflecting the key results of *Diagnose!*, which is primarily a facts & figures presentation, the participants walk through a bouquet of exercises, all designed to carefully access their individual sources of energy. This is essential for the vision development

[17]Potential sources are Collins and Porras (1996, 2002), Future-Fit Business Benchmark© (2018a), the UN Sustainable Development Goals (United Nations, 2015), the Singularity University's teaching on Exponential Technologies (Singularity University, 2018).

process. After all, recalling the ACER process, bridging the gap between *Comprehend!* and *Respond!* is a matter of deep emotional concern.

Integration aims to include the rest of the organization for further advancement of the *Imagination* results. This process eventually leads to a clear and compelling vision statement, the BHAG(s), as well as core values and a purpose that is shared by the organization and guides innovation.

With that, we are ready to start to collect, validate, discuss, select, and develop ideas on how to bridge the gap between where we are today (*Diagnose!*) and where we want to be "tomorrow" (*Visualize!*).

17.3.2.4 *Innovate*! for Success

For the organization to fully *Engage!* its transformation process, *Innovate!* provides vital input for the development of the master plan. *Diagnose!* and *Visualize!* together produce the "creative tension" (Senge, 1990) that is required for innovation to happen. This phase is about stimulating stakeholders to come up with creative solutions to close the gap with the renewed ambition and harvest (large numbers) of diverse ideas.

Success depends on the available innovation engine. Here it is relevant to realize the scope of (ideas for) innovation, which includes all innovation types e.g. products, services, processes, management system(s), organizational structures, operations, business models, stakeholder engagement, and covers all aspects of the organization. Next to the tangible, hard side of the innovation system (e.g. strategy, processes, tools, KPIs (beyond R&D)), it is relevant to also think of the intangible, soft side (e.g. culture, motivation, collaboration, risk appetite, sharing mode).

Having said that, some organizations have a mature, working innovation ecosystem, or innovation engine in place (although the integration of sustainability throughout might be suboptimal), while others lack the needed processes, capabilities, and/or tools to innovate effectively and efficiently. *Diagnosis!* already reveals an organization's innovation maturity and recommended actions.

The transformation journey, affecting all aspects of the organization across multiple horizons and soon to be involving all stakeholders, requires—at least in a minimal version—a working innovation engine to support future ideation and Research, Development, and Innovation (R&DI) processes.[18]

With certainly no shortage of possible ideas for innovation on a short-, mid-, and long-term horizon, the organization is now fully equipped to consolidate and set strategic goals and develop its strategy for achieving them, thus transforming into a thriving enterprise, fit for the future.

[18]Full implementation, or improvement, of an innovation ecosystem to ensure it serves context-driven, purposeful innovation leadership is to be considered an initiative on its own as part of the Masterplan.

17.3.2.5 *Strategize*! Your Approach

This is the most serious phase of the ADVISE process. The purpose of this phase is to take all results from previous phases and combine this into a comprehensive though concise organizational Masterplan or Roadmap, which elaborates how our organization is logically intending to bridge the gap.

Hence, the ideas of *Innovate!* require to be consolidated, scrutinized, assessed, and ultimately translated into measurable short-, mid-, and long-term *Strategic Goals*, initiatives and projects. All should be scrutinized and prioritized using a minimum of three crucial strategic questions:

Does achieving this goal, or completing this initiative:

1. move us in the *Right Direction*?
2. provide us with a *Flexible Platform* for next steps?
3. deliver us an attractive *Return on Investment* (ROI)?

The first question checks whether it helps us towards our vision guided by the sustainability principles taking into account various stakeholders simultaneously. The second helps us to prevent dead-end investments by considering also whether and what next steps would be possible. The third, where ROI does not only concern financial but also other capitals (e.g. human, environmental, built, intellectual, social capitals), helps us to understand how and when it will provide us the return. In addition, the organization may have other strategic considerations to add which will help prioritization.

Due to its strategic nature, the new goals and initiatives need integration with existing portfolio of priorities, which may already be underway. This may require revisiting governance processes and criteria on one hand, while on the other hand it may result in killing projects that do not meet your renewed criteria and free up resources.

Strategic Goals are the stepping stones, intermediate camps, supporting pillars, filling stations, which the organization considers decisive for making the full journey. They should include FFBB goals in some form or another, as they provide must-fulfill corner stones on material topics. Nonetheless, they are insufficient to outline the corporation's strategic path. After all, future-fitness needs to include the organization's economic perspective, which for obvious reasons looks completely different depending on the industry and value chain position the entity operates in.

The work required to achieve the *Strategic Goals* can be clustered in *Initiatives*, that will cover all aspects of the organization, being Leadership & Governance, DNA & Culture, Processes, Products & Service, Finance, and Communication. These Initiatives will serve short-, mid-, and long-term horizons, with an Initiative often serving several Strategic Goals.

Once the messy process of strategizing is done, the organization is equipped to compile all available results elaborated so far into its *Master Plan for Future Fitness*, including the organization's

- Vision (incl. Core Purpose, Core Values, Vision Statement, BHAGs)
- Short-, mid-, and long-term Strategic Goals

- Roadmap of Initiatives
- Governance and Organization
- ...

It is now ready to fully engage or execute its transformation, which, as a matter of fact, at this time has already been under way, although most people concerned might not have become aware of it—yet.

17.3.2.6 *Engage*! Your Transformation

With the position evident, a bold vision articulated, various options developed, and a strategy agreed upon, it all comes down to *getting the "job" done*—to *Engage!* the transformation journey.

The previous steps were a much trickier part of the process as it is not something organizations are used to doing on a frequent basis and because it is also an introduction into dealing with complexity, which doesn't stop here. *Engage!,* for most, is a more familiar terrain as the focus for a large part returns to getting into action mode. The *Roadmap of Initiatives* is translated into action plans and projects to be initiated, planned, executed, monitored, controlled, and closed. Waves with e.g. 1-year horizons comprise multiple projects, which serve several initiatives to ultimately move along the stepping stones of strategic goals towards the fulfillment of the organization's vision.

Independent of the industry, a *"House in Order (HIO)" Program* often is at the center of Wave 1, to ensure the foundation to build change upon is strong. Therefore, it may be about strengthening the weakest aspects of the organization, or it may comprise projects to e.g.

- eliminate physical and non-physical waste (Muda)[19] in the organization's core, management and supporting processes, still based on the current business model
- educate, encourage and engage employees to take on responsibility for their individual contribution
- communicate openly and honestly towards other stakeholders for winning their support
- setting the foundation and establishing the capability for transformation and change (e.g. change, project, innovation, compliance management)
- etc.

This might sound like standard business, it is however essential to recall that at this stage, each of these projects has been derived strategically from the vision and from considering the organization's systems context and its dependencies. The set of

[19]Muda (無駄) is a Japanese word meaning "futility; uselessness; wastefulness," and is a key concept in lean process thinking (Ohno, 1988). At Toyota originally seven forms of waste were identified.

projects might confirm measures the organization had already going on, taking it in the right direction, but also stops those taking it in the wrong direction.

While harvesting low hanging fruits is a continuous element of ADVISE, *Engage!* also requires to establish more structural methodologies to monitor, control, and report progress such as a *Sustainability Balanced Scorecard* (Figge et al., 2001). Such scorecard extends the classic Balanced Scorecard model (Kaplan and Norton, 1996) of financial, customer, process and people perspectives, and related goals with the societal and environmental goals the organization has developed. Implemented appropriately, it provides relevant information instantly on every level and along every function of the organization, a prerequisite to successfully navigate and maneuver it.

The organization is now on its mission becoming fit for the future. And if done properly, applying context-driven, purposeful leadership for innovation, considering socio-ecological restrictions, there will be no stopping it.

17.4 Conclusion

By now, hopefully, answering the following three questions should no longer trouble the Key Decision Maker:

- "WHY we must change?"
- "WHAT needs to be done?" and
- "HOW to do it?"

The Sustainability Killer Wave has already been hitting many businesses. Our exponentially growing demands for ecoservices, far beyond our planet's capability to supply them, and the erosion of trust will further increase this vehemence. Yet, living in VUCAD times, the Technology Acceleration Killer Wave appears to be the topic that seems to be getting the most attention, potentially creating new problems occurring, when it comes to planning and deciding on the journey ahead. However, there is no way of solving the problems on the same level we generated them. Taking a different approach is no longer an option, while at the same time providing endless new opportunities.

This is, WHY we must change.

This different approach asks for taking a systems perspective when dealing with the threats and opportunities ahead. The *Key Decision Maker* acknowledges the dependence of the well-being of his/her organization with the well-being of

- the Economy, the organization is operating in
- the Society, the Economy is embedded in, and
- the Environment, that any Society is embedded in.

Acknowledging these dependencies, triggers the question on what success of the outer systems Environment and Society would be. This question has been answered with the science-based Sustainability Principles and their translation into future-fit

goals. Any organization must transform its business towards operating and thriving within these limitations. Having this in mind, surfing the Technology Acceleration Wave will provide the means to successfully surf the Sustainability Wave, making the "Killer Waves" the "Perfect Wave," if surfed professionally.

This is, WHAT needs to be done.

Becoming *Awake* to acknowledge the need to act, being able to *Comprehend* how to do it, and willing to *Embrace* the necessary change, are three essential steps before any conscious *Response* takes place. Not every Key Decision Maker will become *Acered* in time. Those who do, will quickly realize how essential it is to *Acer* the organization's key stakeholders, before they *Diagnose* the organization's position, *Visualize* their future, *Innovate* for success, *Strategize* their approach, and *Engage* their transformation—The ADVISE Process.

This is, HOW to do it.

The Systems and their correlation as well as the current system trends have been described, Success has been defined, Strategic Guidance been obtained, Actions been derived, and Tools been applied where and when appropriate and useful. Everything that's required for a successful transformation of individuals, organizations, and our society as a whole—in this order—is already available. Hence, it all comes down to the ultimate challenge for the Key Decision Maker: to either embrace the Role as New Leader, or to make room for those people ready to take over.

While this chapter focuses on providing inspiration and guidance for Key Decision Makers, the needed *New Leaders* can be found anywhere. At any level of an organization, in academia, at the cashier of the super market, at school, in NGOs, in politics, etc. Their number is increasing and so is the number of their followers. If this paper helps to make this collaborative movement faster by fostering direction, alignment, and commitment, it has fulfilled its purpose.

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