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New Organization\n\n**Organizational Capacity for a New Organization:**\n\n1.
**Leadership and Team Expertise:**\n - Highlight the experience and qualifications
of your team members. Explain how their backgrounds make them well-suited to manage
the proposed project successfully. For example, if your team includes individuals with
extensive experience in health education or project management, emphasize these
credentials.\n\n2. **Strategic Planning and Vision:**\n - Detail the strategic
planning you have undertaken to ensure the project's success. Describe your
mission, goals, and the specific steps you will take to achieve them. Include a
timeline with key milestones to demonstrate a clear and organized approach.\n\n3.
**Foundational Support and Initial Achievements:**\n - Mention any foundational
support you already have, such as partnerships, initial funding, or endorsements from
established organizations. If you have conducted preliminary research or pilot
programs, highlight these achievements to show your project's solid
foundation.\n\n4. **Potential for Impact:**\n - Demonstrate the potential impact of
your project. Use data and evidence from similar successful initiatives to show
funders that your project can achieve meaningful outcomes. Highlight how your project
addresses a significant need and the positive changes it will bring to the
community.\n\n5. **Cross-Sector Collaboration:**\n\n1. **Potential Collaborators:**\n -
Identify organizations and stakeholders you plan to collaborate with. Explain their
relevance and how their involvement will contribute to the project's success. For
example, mention how collaboration with the CDC, Advocates for Youth, and Amaze.org
will enhance your project's credibility and reach.\n\n2. **Collaboration
Strategies:**\n - Outline specific strategies for collaboration, such as joint
initiatives, shared resources, or coordinated outreach efforts. Describe how these
collaborations will be managed and the roles each partner will play.\n\n3. **Letters
of Support:**\n - If possible, include letters of support or intent from potential
collaborators. These letters can demonstrate that you have already engaged with key
partners and have their commitment to the project. This can be particularly persuasive
for funders.\n\n4. **Page Requirement:**\n- If the rubric does not specify a minimum page
requirement, ensure your content is concise yet comprehensive. Address all required
sections effectively within the suggested page limits, ensuring clarity and
focus.\n\n### Conclusion\n\nTo effectively address organizational capacity for a new
organization, emphasize your team's expertise, strategic planning, foundational
support, and the potential impact of your project. For the collaboration section,
focus on potential collaborators, detailed collaboration strategies, and letters of
support to strengthen your proposal.\n\nLike our GPT? Try our full AI-powered search
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soreness your boyfriend is experiencing at the base of his spine could potentially be
due to a few different causes:\n\nl. **Bruising or Soft Tissue Injury:** If the tank
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was hard and dug into his back, he might have bruised the area or caused other soft tissue injuries. This can lead to swelling and discomfort.\n\n2. **Pressure Ulcer:** Prolonged pressure, especially from a hard edge, can cause skin and the underlying tissue to break down, leading to what is commonly called a pressure ulcer or bed sore. This is less likely in your boyfriend's case if the contact was brief, but if he was carrying it for a long duration on multiple occasions, it could be a factor.\n\n3. **Cyst or Lipoma:** A bulge at the base of the spine could potentially be a cyst or a lipoma (a benign tumor of fatty tissue). These can appear as bulging or swelling on the skin and might be painful if they are pressed or irritated.\n\n4. **Pilonidal Cyst:** This is another possibility, especially given the location at the base of the spine. Pilonidal cysts can develop when hair punctures the skin and then becomes embedded. They are often painful and can swell, particularly if infected.\n\nGiven the discomfort and the description of a bulge, it would be advisable for him to see a healthcare provider. They can evaluate the area more thoroughly and provide a proper diagnosis and treatment plan. Avoiding carrying the tank in the same manner, applying ice to reduce swelling, and taking over-the-counter pain relievers might provide temporary relief until he can get professional care."}], "status":

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pain relievers like ibuprofen or acetaminophen can help alleviate pain and reduce inflammation.

Monitor the Symptoms: Keep an eye on the swelling and other symptoms. If it starts to improve with rest and care, it may just be a minor injury. However, worsening symptoms warrant a doctor's visit.

If there's any uncertainty, visiting a healthcare professional is the safest choice to rule out more serious issues and ensure appropriate treatment."}], "status": "finished_successfully", "end_turn": true

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tombs for the pharaohs and their consorts during the Old and Middle Kingdom periods.
The most famous pyramid complex, which includes the Great Pyramid of Giza, was
constructed as a part of a larger necropolis that served as the burial site for
Egyptian royalty.\n\nThe purpose of these pyramids was to help the deceased pharaohs
in their journey to the afterlife. Ancient Egyptians believed in an afterlife where
the pharaohs, as divine beings, would continue to ensure the prosperity and stability
of the land they ruled. The pyramids were engineered to protect the body and
belongings of the deceased, and they often included intricate burial chambers, ante-
chambers, and storerooms filled with items and treasures that the pharaoh might need
in the afterlife.\n\nOver time, the style and complexity of the pyramids evolved, but
their primary function as monumental tombs remained largely the same. The use of
pyramids for royal burials declined after the end of the Middle Kingdom, giving way to
less conspicuous \u2013 but still elaborate \u2013 burial practices involving hidden
underground tombs, as seen in the Valley of the Kings." ]}, "status":
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pyramids being built as tombs for pharaohs, none of the Great Pyramids of Giza has
yielded a pharaoh's mummy to archaeologists. By the time modern archaeology began
exploring these structures, tomb robbers had long since entered and plundered many of
them, removing any valuable items and, in many cases, the mummies themselves.\n\nFor
example, the Great Pyramid of Giza, built for Pharaoh Khufu (Cheops), was found to be

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with no mummy or substantial funerary artifacts discovered within its burial chambers. The same goes for the pyramids of his successors, Khafre and Menkaure. Many Egyptologists believe that the original contents, including the mummies, were removed either in antiquity by tomb robbers or during periods of civil disorder.

The only somewhat intact royal mummy that has been discovered in the context of a pyramid was that of Pharaoh Merenre I, from the 6th dynasty, found in his pyramid at Saqqara. However, even this find was not in pristine condition, as the tomb had been disturbed prior to its scientific discovery.

Overall, while pyramids are tombs, the discoveries of mummies within them are rare and often compromised by previous lootings."]], "status": "finished_successfully", "end_turn": true

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accurate to say that most of the pyramids were built within a 40-year period. The
construction of pyramids in Egypt spanned several centuries, primarily during the Old
and Middle Kingdoms. However, the most famous and largest pyramids\u2014the ones on
the Giza Plateau, including the Great Pyramid of Khufu, the Pyramid of Khafre, and the
Pyramid of Menkaure\u2014were built over a period of roughly 70 to 80 years during the
Fourth Dynasty of the Old Kingdom.\n\n1. Great Pyramid of Khufu (Cheops):
Constructed around 2580\u20132560 BCE.\n2. Pyramid of Khafre: Built shortly after
Khufu&#x27;s, around 2558\u20132532 BCE.\n3. Pyramid of Menkaure: Completed around
2490\u20132472 BCE.\n\nThis was indeed a relatively short period when considering the
extensive history of pyramid building in Egypt, which continued well beyond these
monumental achievements, albeit on a smaller scale in later periods. The practice
began around 2630 BCE with the step pyramid of Djoser and continued until the end of
the Middle Kingdom, around 1650 BCE, with the pyramid-building tradition declining
during the Second Intermediate Period and largely ceasing thereafter.\n\nThe Giza
pyramids represent the pinnacle of pyramid construction in terms of size,
architectural sophistication, and alignment accuracy, marking a peak in the
architectural skills of ancient Egyptian builders." ]}, "status":
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["The Egyptian pyramids, particularly the Pyramid of Djoser, which is considered the
earliest large-scale cut stone construction, are among the oldest surviving monumental
structures on Earth. Built around 2630\u20132611 BCE during Egypt&#x27;s Third Dynasty,
the step pyramid of Djoser is certainly one of the earliest pyramid structures.
However, it is not the oldest standing intact structure in the world.\n\nThere are
several other ancient structures that are older or contemporaneous to the Egyptian
pyramids but still in existence today:\n\n1. Megalithic Temples of Malta: These
temples, such as \u0120gantija, date back to approximately 3600\u20133200 BCE, making
them older than the Egyptian pyramids.\n\n2. Newgrange: Located in Ireland, this

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prehistoric monument was constructed around 3200 BCE, around 600 years before the Pyramid of Djoser. It is a large circular mound with a stone passageway and chambers inside, part of the Neolithic Br\u00fa na B\u00f3inne complex.

****Barnenez**:** In France, the Cairn of Barnenez dates back to around 4850 BCE and is considered one of the oldest structures in the world built by humans.

These structures demonstrate the extensive architectural and ceremonial efforts made by ancient civilizations across different regions. While the Egyptian pyramids are certainly prominent and well-preserved examples of early monumental architecture, they are part of a broader context of ancient construction that includes many impressive and even older structures worldwide.”}], “status”: “finished_successfully”, “end_turn”: true, “weight”: 1.0, “metadata”: {“finish_details”: {“type”: “stop”, “stop_tokens”: [100260]}, “citations”: [], “gizmo_id”: null, “is_complete”: true, “message_type”: null, “model_slug”: “gpt-4”, “default_model_slug”: “gpt-4”, “pad”: “AAA”, “parent_id”: “aaa23366-0cde-4bf3-8ef2-baf368ff1681”, “request_id”: “8854f02759ca5a13-MXP”, “timestamp_”: “absolute”, “recipient”: “all”, “channel”: null}, “parent”: “aaa23366-0cde-4bf3-8ef2-baf368ff1681”, “children”: [“aaa2b772-c4b2-499e-a0ad-3ec66539e2e0”]}, “aaa2b772-c4b2-499e-a0ad-3ec66539e2e0”: {“id”: “aaa2b772-c4b2-499e-a0ad-3ec66539e2e0”, “message”: {“id”: “aaa2b772-c4b2-499e-a0ad-3ec66539e2e0”, “author”: {“role”: “user”, “name”: null, “metadata”: {}}, “create_time”: 1715962922.042496, “update_time”: null, “content”: {“content_type”: “text”, “parts”: [“but are any of them still standing and functional like the pyramids?”]}}, “status”: “finished_successfully”, “end_turn”: null, “weight”: 1.0, “metadata”: {“request_id”: “8854f1a4dfb85a13-MXP”, “timestamp_”: “absolute”, “message_type”: null}, “recipient”: “all”, “channel”: null}, “parent”: “4a533fd2-dd67-4b75-8f0f-fb786ee32904”, “children”: [“1c482297-1c6f-47d1-812b-3a4968987b0a”]}, “1c482297-1c6f-47d1-812b-3a4968987b0a”: {“id”: “1c482297-1c6f-47d1-812b-3a4968987b0a”, “message”: {“id”: “1c482297-1c6f-47d1-812b-3a4968987b0a”, “author”: {“role”: “assistant”, “name”: null, “metadata”: {}}, “create_time”: 1715962944.147901, “update_time”: null, “content”: {“content_type”: “text”, “parts”: [“When considering both age and functionality \u2014 specifically in the context of being intact and retaining their original purpose or structure \u2014 the Egyptian pyramids stand out prominently. They have endured millennia while largely maintaining their original form, despite natural erosion and human interference.”]}}, “status”: “finished_successfully”, “end_turn”: null, “weight”: 1.0, “metadata”: {“request_id”: “8854f1a4dfb85a13-MXP”, “timestamp_”: “absolute”, “message_type”: null}, “recipient”: “all”, “channel”: null}, “parent”: “4a533fd2-dd67-4b75-8f0f-fb786ee32904”, “children”: [“1c482297-1c6f-47d1-812b-3a4968987b0a”]}, “1c482297-1c6f-47d1-812b-3a4968987b0a”: {“id”: “1c482297-1c6f-47d1-812b-3a4968987b0a”, “message”: {“id”: “1c482297-1c6f-47d1-812b-3a4968987b0a”, “author”: {“role”: “assistant”, “name”: null, “metadata”: {}}, “create_time”: 1715962944.147901, “update_time”: null, “content”: {“content_type”: “text”, “parts”: [“The megalithic temples of Malta, Newgrange in Ireland, and the Cairn of Barnenez in France, while incredibly ancient and still standing, do not retain a ‘functional’ aspect in the same way, mainly because their original purposes (ceremonial or funerary) are no longer active, and they often require significant preservation efforts to maintain their structure. Newgrange, for instance, still has an intact roof and is famous for its winter solstice illumination, a phenomenon that continues to function as originally intended, but this is more of a passive feature rather than an active use.”]}}, “status”: “finished_successfully”, “end_turn”: null, “weight”: 1.0, “metadata”: {“request_id”: “8854f1a4dfb85a13-MXP”, “timestamp_”: “absolute”, “message_type”: null}, “recipient”: “all”, “channel”: null}, “parent”: “4a533fd2-dd67-4b75-8f0f-fb786ee32904”, “children”: [“1c482297-1c6f-47d1-812b-3a4968987b0a”]}, “1c482297-1c6f-47d1-812b-3a4968987b0a”: {“id”: “1c482297-1c6f-47d1-812b-3a4968987b0a”, “message”: {“id”: “1c482297-1c6f-47d1-812b-3a4968987b0a”, “author”: {“role”: “assistant”, “name”: null, “metadata”: {}}, “create_time”: 1715962944.147901, “update_time”: null, “content”: {“content_type”: “text”, “parts”: [“The Egyptian pyramids, particularly those at Giza, remain standing with much of their original shape and structure recognizable, despite no longer serving their original funerary functions. They continue to function as cultural and historical symbols, are key to Egyptological studies, and serve as major tourist attractions, contributing to Egypt’s modern economy.”]}}, “status”: “finished_successfully”, “end_turn”: null, “weight”: 1.0, “metadata”: {“request_id”: “8854f1a4dfb85a13-MXP”, “timestamp_”: “absolute”, “message_type”: null}, “recipient”: “all”, “channel”: null}, “parent”: “4a533fd2-dd67-4b75-8f0f-fb786ee32904”, “children”: [“1c482297-1c6f-47d1-812b-3a4968987b0a”]}, “1c482297-1c6f-47d1-812b-3a4968987b0a”: {“id”: “1c482297-1c6f-47d1-812b-3a4968987b0a”, “message”: {“id”: “1c482297-1c6f-47d1-812b-3a4968987b0a”, “author”: {“role”: “assistant”, “name”: null, “metadata”: {}}, “create_time”: 1715962944.147901, “update_time”: null, “content”: {“content_type”: “text”, “parts”: [“In terms of enduring as intact, recognizable structures that closely resemble their original form, the pyramids are unmatched. Their construction technique, using massive stone blocks, has ensured their longevity and stability over thousands of years. This aspect sets them apart from other ancient constructions, which may not have fared as well over the centuries.”]}}, “status”: “finished_successfully”, “end_turn”: true

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["Answer the questions below based on the the chapters referenced in the reference
list below and attached and the you tube transcripts attached. Answer in an academic
way and reference the attachments in text. \n\nBringezu, S., & Bleischwitz, R.
(Eds.). (2009, September). Sustainable resource management: Global trends, visions,
and policies. Routledge.\nChapter 2: Analyzing global resource use of national and
regional economies across various levels. \n\nMang, P., Haggard, B., & Regensis
Group. (2016). Regenerative development and design: A framework for evolving
sustainability. John Wiley & Sons.\nPART ONE: Creating regenerative
projects\nChapter 1: Evolution\nChapter 2 Understanding place\n\nBringezu, S., &
Bleischwitz, R. (Eds.). (2009, September). Sustainable resource management: Global
trends, visions, and policies. Routledge.\nChapter 2: Analyzing global resource use of
national and regional economies across various levels. \n\nBecause there are no
globally agreed upon set of standard sustainability metrics, and considering the
complexity of process chains in a global economy, how might those metrics evolve or
grow to include other indicators of measurement? What might we measure (for example,
the human health impacts of production, the living wage for and working conditions of
workers)? What might be some creative ways to incorporate and integrate those new
types of metrics into sustainability? Is there a technological fix?\n\n"]}, "status":
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specific sustainability\n00:03:19.333 and ethical production claims\n00:03:21.167 in a data-based and automated way.\n00:03:24.042 Then trace those individual physical products\n00:03:26.917 throughout their supply chains,\n00:03:28.625 and finally, share that information with consumers\n00:03:31.667 in a way that truly gives them a choice\n00:03:34.125 and lets them make consumption decisions\n00:03:36.125 that are more aligned with their values.\n00:03:38.958 I'm going to use a real product\n00:03:42.292 and a supply chain where we've made all of this a reality already:\n00:03:46.750 a Patagonian toothfish,\n00:03:48.042 or Chilean sea bass, as it's called in the US.\n00:03:51.083 Number one, verify.\n00:03:53.792 Verify how something is produced.\n00:03:56.375 But not just by saying, "Trust me, this is good,\n00:03:59.208 trust me, we've done all the right things," \n00:04:01.417 but by producing evidence for that individual physical product,\n00:04:05.458 and the way it was produced.\n00:04:07.750 By producing evidence\n00:04:09.042 for a specific sustainability or ethical production claim.\n00:04:12.833 So for example, in the case of the fish,\n00:04:15.708 has this fish been caught in an area where there's enough of them,\n00:04:19.625 so that it's sustainable to catch it there\n00:04:21.666 and not in a marine protected area?\n00:04:24.375 So what we're doing here\n00:04:25.750 is we're taking almost real-time GPS data from the ship --\n00:04:29.667 the ship that's fishing --\n00:04:31.208 and that tells us where the ship is\n00:04:33.458 and where it's going at what speed.\n00:04:36.042 And we can then combine that with other types of data,\n00:04:39.208 like, for example, how deep the sea floor is.\n00:04:42.000 And combining all of this information,\n00:04:44.667 our machine-learning algorithms can then verify, in an automated way,\n00:04:48.833 whether the ship is only fishing where it's supposed to, or not.\n00:04:53.875 And as sensors become cheaper,\n00:04:56.458 we can put them in more places.\n00:04:58.500 And that means we can capture more data,\n00:05:00.875 and combining that with advancements in data science,\n00:05:03.708 it means that we can now verify\n00:05:07.000 specific sustainability and ethical production claims\n00:05:11.042 in an automated, real-time and ongoing manner.\n00:05:15.250 And that really lays the basis for this information revolution.\n00:05:19.417 So, number two, trace.\n00:05:21.625 Trace those individual physical products,\n00:05:24.708 so that we can truly say\n00:05:26.750 that the claim that we've verified about a certain product\n00:05:29.500 actually belongs to that individual product\n00:05:32.500 that we as consumers have right in front of us.\n00:05:35.042 Because without that level of traceability,\n00:05:38.375 all that we've really verified in the first place\n00:05:41.250 is that somebody, somewhere, at some point\n00:05:44.125 caught a fish in a sustainable way,\n00:05:46.458 or didn't harm the employee when asking them to produce a T-shirt,\n00:05:51.375 or didn't use pesticides when growing a vegetable that didn't actually need it.\n00:05:57.292 Only if I give a product an identity from the start\n00:06:01.250 and then trace it throughout the whole supply chain,\n00:06:04.042 can this claim and the value that's been created\n00:06:07.667 by producing it in the right way\n00:06:10.000 truly stay with it.\n00:06:13.542 Now, I've talked about cheaper sensors.\n00:06:16.167 There are many other technological developments\n00:06:18.667 that make all of this much more possible today than ever before.\n00:06:22.917 For example, the falling costs of tags.\n00:06:26.792 You give a product a name,\n00:06:29.875 a serial number, an identity,\n00:06:31.917 the tag is its passport.\n00:06:34.125 What you can see here is a toothfish being caught.\n00:06:37.458 This is what's called a longline

fishery, \n00:06:39.792 so the fish are coming up onto the boat on individual hooks. \n00:06:44.042 And as soon as the fish is on board, \n00:06:46.333 it is killed, and then after that, \n00:06:48.625 we insert a small tag into the fish's flesh. \n00:06:52.083 And in that tag, there is an RFID chip with a unique serial number, \n00:06:56.625 and that tag follows the fish throughout the whole supply chain \n00:06:59.667 and makes it really easy to sense its presence \n00:07:01.875 at any port, on any truck or in any processing plant. \n00:07:05.417 But consumers can't really read RFID tags. \n00:07:08.708 And so, when it comes to filleting and packaging the fish, \n00:07:12.958 we read the RFID tag and then remove it. \n00:07:15.875 And then we add a unique QR code to the packaging of the fish. \n00:07:20.125 And that QR code then points back to the same information \n00:07:24.625 that we've verified about the fish in the first place. \n00:07:29.083 And so, depending on the type of product that we're working with, \n00:07:32.958 we may use QR codes, bar codes, RFID tags \n00:07:36.750 or other tag technologies. \n00:07:38.542 But there are also technologies \n00:07:40.667 that are at the brink of large-scale breakthrough \n00:07:43.083 that make tags themselves obsolete. \n00:07:45.083 Like, for example, \n00:07:46.708 analyzing a product for trace elements \n00:07:49.458 that can then tell you quite accurately where it is actually from. \n00:07:53.000 Then there's blockchain. \n00:07:54.417 A decentralized technology can act as a catalyst for this revolution. \n00:07:59.250 Because it can help mitigate some of the trust issues \n00:08:03.042 that are inherent to giving people information \n00:08:06.542 and then asking them to change their consumption behavior \n00:08:09.750 because of that information. \n00:08:12.125 And so, we use blockchain technology \n00:08:14.833 where it adds value to what we're doing. \n00:08:18.083 But importantly, \n00:08:19.375 we don't let the limitations that this technology still has today, \n00:08:22.542 like, for example, with regards to scaling, \n00:08:24.625 we don't let that stand in our way. \n00:08:26.625 And that brings us to the third point. \n00:08:29.125 Share. \n00:08:30.417 How to share the information that we've verified and tracked \n00:08:34.292 about where a product is from, how it was produced \n00:08:37.125 and how it got to where it is? \n00:08:39.625 How to share this information \n00:08:41.582 is really different from product to product. \n00:08:44.458 And different from where you buy it. \n00:08:46.792 You behave differently in those situations. \n00:08:49.375 You are stressed and time-poor in the supermarket. \n00:08:53.042 Or with short attention span over dinner, \n00:08:55.333 because your date is so cute. \n00:08:57.542 Or you are critical and inquisitive \n00:09:00.583 when researching for a larger purchase online. \n00:09:04.750 And so for our fish, \n00:09:06.375 we've developed a digital experience \n00:09:09.333 that works when buying the fish in a freezer in a fish specialty store \n00:09:15.125 and that gives you all of the information about the fish and its journey. \n00:09:18.958 But we also worked with a restaurant \n00:09:21.625 and developed a different digital experience \n00:09:24.625 that only summarizes the key facts about the fish and its journey, \n00:09:28.208 and works better in a dinner setting \n00:09:30.667 and, hopefully, it doesn't annoy your date too much. \n00:09:34.250 Now, that brings us full circle. \n00:09:36.625 We've verified that the fish was caught \n00:09:39.667 in an area where it's sustainable to do so. \n00:09:42.667 We've then traced it throughout the entire supply chain \n00:09:45.292 to maintain its identity and all the information that's attached to it. \n00:09:49.417 And then, we've shared that information with consumers \n00:09:52.000 in a way that gives them a choice \n00:09:53.833 and lets them

make consumption decisions that are more in line with their values. Now, for this fish example, this is already rolled out at scale. This season, the entire fleet of the world's largest toothfish fishing company, Austral Fisheries, is tagging every single fish that they catch and that ends up in their premium branded "Glacier 51" product. And you can already buy this fish. And with it, you can have all of the information I talked about today, and much more, attached to each individual fish or portion of the fish that you may buy. But this is not a fish or seafood thing. We're working on many, many different commodities and products and their supply chains across the globe. From dairy to fruit and vegetables, to nonfood products made out of wood. As a consumer, all of this may sound like a huge burden, because you don't have time to look at all of this information every time you buy something. And I don't expect you to, because you'll have help with that. In the future, we'll leave the decision of which specific product to buy increasingly up to machines. An algorithm will know enough about you to make those decisions for you, so you don't have to. And maybe it will even do a better job at it. In a recent study, 85 percent of those buying a product through a virtual assistant said that they, on occasion, actually went with the top product recommendation of that virtual assistant, rather than the specific product or brand that they set out to buy in the first place. You just say you need toilet paper, it's then an algorithm that decides which brand, price point or whether you go with recycled or not. Well, nowadays this is usually based on what you bought in the past, or whoever pays the most to the company behind the virtual assistant. But why shouldn't that be also based on your values? Knowing that you want to buy planet-friendly and knowing whether and how much you're willing and able to pay for that. Now, that will make it easy and seamless, but still based on granular effects and data to choose the right products. Not by necessarily doing it yourself but by asking an algorithm that knows how much you care about this planet. Not by necessarily doing it yourself but by asking an algorithm that is never time-poor or distracted, or with short attention span because of the cute date, and that knows how much you care about this planet and the people living on it, by asking that algorithm to look at all of that information for you and to decide for you. If we have reliable and trustworthy information like that and the right systems that make use of it, consumers will support those who are doing the right thing by producing products in a sustainable and ethical way. They will support them every time by choosing their goods over others. And that means that good producers and processors and retailers will get rewarded. And bad actors will be forced to adjust their practices or get out of business. And we need that. If we want to continue to live together on this

beautiful planet,\n00:13:22.792 we really need it.\n00:13:24.667 Thank
you.\n00:13:25.958 (Applause)\n", "title": "tactiq-free-transcript-ygxh6KR4BPk.txt",
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Metrics\n# https://www.youtube.com/watch/lmdDnqBh-Zg\n\n00:00:00.740 we'll talk
with you about how we define\n00:00:03.210 these metrics what aspects of\n00:00:07.259 sustainability should an organization\n00:00:09.120 measure which I think is one of
the\n00:00:10.500 critical issues that we have to think\n00:00:12.509 about and then
the relationship of these\n00:00:15.420 sustainability metrics to the\n00:00:17.580 organization's general performance\n00:00:19.500 measurement and management
system the\n00:00:21.600 challenge is going to be to integrate so\n00:00:24.660 we
have to develop these new ways of\n00:00:27.090 looking at the world and
of\n00:00:28.740 organizational performance but then\n00:00:30.929 after a while
it's going to be very\n00:00:32.430 important that they not be seen
as\n00:00:34.559 something separate oh that's just the\n00:00:36.510 way we
manage around here nothing\n00:00:38.879 different than our routine and
really\n00:00:41.250 part of other types of metrics what are\n00:00:45.000 the
methodological issues raised by\n00:00:46.770 measuring sustainability and I hinted
at\n00:00:49.710 that before the complexity of this issue\n00:00:52.670 why it's
important to do this and and\n00:00:55.410 what what does this all lead us
to\n00:00:57.809 conclude with so how do we define\n00:01:00.780 sustainability
metrics so since this is\n00:01:03.840 a course the sustainability
management\n00:01:05.610 I'm going to have to give you a\n00:01:06.600 definition
so they are an organization\n00:01:09.540 or jurisdictions indicators of
resource\n00:01:13.799 utilization waste reduction and\n00:01:16.970 pollution
discharges into the\n00:01:18.990 environment some being very focused
here\n00:01:21.420 there's a lot of other things people\n00:01:22.560 might
measure in fact in our case study\n00:01:25.259 they talked about a bunch of
other\n00:01:26.850 things I'm going to try to focus on\n00:01:29.280 these three
things now according to one\n00:01:32.610 set of authors that I'm quoting here
it\n00:01:35.490 includes material intensity energy\n00:01:38.820 intensity water
consumption toxic\n00:01:42.750 emissions and pollutants they're\n00:01:44.430
actually separating pollutants into\n00:01:46.500 toxics and other pollutants because
put\n00:01:50.549 and toxic being those pollutants that\n00:01:53.310 are most intense
that can poison life\n00:01:56.540 relatively quickly where some
pollutants\n00:01:59.100 can simply change things not always for\n00:02:01.680 the
better\n00:02:02.130 some forms of pollutants are really\n00:02:04.320 having too much
of a good thing too much\n00:02:06.990 nutrient too much nutrition in a
lake\n00:02:10.400 creates a set\n00:02:13.270 of environmental impacts that you

don't want but that's different than taking plutonium and dropping it off in the middle of the lake one of them is very toxic immediately and the other is simply a pollutant there are no agreed set of sustainability metrics everyone has their ideas about what's important and we should all expect that this is going to evolve for quite a while so let me focus on the aspects that I think an organization should measure and I should really say that these are starting points I'm really working and I do this here and I do this a little bit in my writing I'm trying to create some boundaries knowing the people are going to take potshots at it okay and that's okay that's really how these things start that's how they evolve so I don't want you to think oh he said it was this therefore that's true and in your final exam I'm not going to have a set of true or false questions or multiple-choice questions related to this in fact there won't be any true or false questions or multiple-choice questions anywhere in this course in part because we simply don't have that level of information here so material intensity is the first pounds of material wasted per unit of output in other words what is it that we're throwing away that doesn't go into the product okay that's one element of material intensity but also is their design for reuse does the product have the potential to be returned for remanufacturing or is it used up after it's used is there some element of it when you think about material intensity one of the questions is is this is it possible to recycle this are the materials being used for this product renewable or mined from one-time geologic resources so it's not so part of its can it be used again but part of it is is this something that we don't have to worry about whether it's recycled because we can make more of it because it's essentially solar and organic in its orientation so that's material intensity the second area is energy intensity and this is expressed as BTUs per unit it's a measure of the net fuel energy consumed to provide the heat and power requirements of the production process okay so that's energy intensity also again renewable versus fossil fuels so it's not just how much energy what's the source of the energy and also the efficiency of the use of the energy in other words how much of the energy in the production process could have been recovered so we'll have a production process that uses say a thousand dollars worth of electricity but it turns out 600 of that was wasted there was waste heat that went up the stack and we could have used it we could have used that energy for some other production process if we had recovered it so these are all factors the energy intensity that is related to sustainability third factors water consumption expressed

as gallons of fresh water\n00:05:29.960 excluding rain water consumed per unit\n00:05:32.300 of output how much water's is the stuff\n00:05:34.130 use when we're making it okay other\n00:05:37.820 factors though again with water the\n00:05:40.669 reuse of the water what's the the\n00:05:43.190 discharge when you release that water\n00:05:45.169 into the environment can it be reused or\n00:05:48.259 is it hopeless is it now water that\n00:05:50.630 can't be used for drinking or for\n00:05:54.430 growing plants also can we improve the\n00:06:02.449 efficiency through improved transmission\n00:06:05.180 reduced evaporation in the case of\n00:06:08.030 plants more efficient plants in their\n00:06:10.729 root structure so water consumption is\n00:06:13.729 an issue that we have to measure toxic\n00:06:18.289 emissions expressed as pounds of toxic\n00:06:20.449 materials emitted by the process per\n00:06:23.509 unit of output okay now these are all\n00:06:26.090 quotations from the work that I've cited\n00:06:29.150 here that I hope you've taken a look at\n00:06:32.110 toxic chemicals are defined by a number\n00:06:34.550 of pieces of US legislation we've gone\n00:06:36.320 through a number of regulatory processes\n00:06:38.570 to decide what's\n00:06:40.050 toxic and what isn't but other factors\n00:06:42.690 that need to be considered when you're\n00:06:44.069 thinking about toxicity is the degree of\n00:06:46.530 toxicity the treatment technology do we\n00:06:49.440 have a way of dealing with it and also\n00:06:51.659 even most importantly in my view is\n00:06:54.180 pathway of exposure is this a toxic that\n00:06:56.940 very easily gets into people's homes and\n00:07:00.419 then into their biological systems is\n00:07:03.000 there you know are these toxics that\n00:07:05.509 once they're released have less of a\n00:07:08.460 capacity to impair people's homes and\n00:07:12.870 lives okay so those are all factors that\n00:07:16.169 you have to think about and then there's\n00:07:18.270 pollutant emissions which can be\n00:07:20.520 expressed as pounds of pollutants\n00:07:21.870 emitted by the process per unit of\n00:07:24.060 output for every car there's X amount of\n00:07:27.750 pollution for every you know for every\n00:07:31.440 watch there's X amount of pollution so\n00:07:34.349 you want to measure that how much how\n00:07:36.060 many what kind of emissions are there\n00:07:37.650 now that's for greenhouse gas emissions\n00:07:39.539 but for other air pollutants also sulfur\n00:07:43.319 dioxide other kinds of some of our more\n00:07:47.520 traditional pollutants let's call it\n00:07:50.630 then we want to think not just of the\n00:07:52.860 pollution emissions but what's the\n00:07:54.479 health impact and are the health impacts\n00:07:56.789 things that we can do something about or\n00:07:59.550 are they things that we can't do\n00:08:01.469 anything about if the impact is asthma\n00:08:04.050 is that something that's treatable\n00:08:06.889 versus the impact being cancer which\n00:08:10.949 whilst treatable perhaps is less\n00:08:12.539 treatable so we actually have to look at\n00:08:14.400 those things though this may sound a\n00:08:15.900 little brutal but those are in fact\n00:08:18.060 things you have to judge how bad is this\n00:08:21.029 stuff is a question you have to ask and\n00:08:23.729 has to be answered no other factors are\n00:08:27.029 you know the issue of sustainability can\n00:08:28.830 differ by geography okay you can have a\n00:08:31.740 landfill in a desert and it's going to\n00:08:34.409 have less of an environmental impact on\n00:08:36.510 the surroundings because it's not going\n00:08:38.610 to do much to ground water you put a\n00:08:40.469 landfill you know you you know or you\n00:08:42.659 you know if you try to hydro frack gas\n00:08:45.949 by the watershed that's a little bit\n00:08:48.870 different

than if it's in a place that doesn't have a lot of groundwater not to say you should do in either place but that is something a sustainability metric would help you to measure and to weigh along with other kinds of issues and then you have to wait all this stuff water energy toxic pollutants what's more important as we develop the measures for our organization in this place all of which is going to vary by what we do where we are and what's the human settlement patterns are around us okay now again I said human settlement patterns there people would say well that's unethical we should worry just as much about the B's and the answers about people well I know that there people believe that and I I think that that is an ethical choice that they make I don't make that choice I'm more concerned about people so those are the problems in measurement I mean just think about what I've just laid out you know all of these different issues and all of these complexities and how do you measure that in an organization now having laid out how complex is let me just say that organizations do this all the time you have to measure what an organization does you have to measure its performance this is an aspect of its performance that's going to become more and more important in organizational management in part because of the regulatory environment because government's going to make people do it in part because resources themselves are becoming contaminated and scarce and we have no choice because otherwise we will degrade the resources of the providers with wealth government it may lead us to do that but corporations themselves may see the importance of doing it and some of them already have and then this is cultural change which I think is taking place which is to say that you know how do we define criminal activity in a society it's a cultural definition okay you know in one society you know you pay the trucker you know \$1,000 a month to make sure your truck doesn't get let's say hijacked okay in some societies that's the cost of doing business and other societies that's corruption okay those things are socially defined well what we're seeing is that increasingly and we saw a little bit this in the Starbucks case before that the social definition of a well-run corporation is becoming a sustainable corporation you and your friends don't want to work for a company that is doing evil what's the Google motto don't don't be evil don't do evil don't be evil okay now they're serious about that they actually think about is what we're doing somehow adding to pain and misery in the world okay that's become important to people and that's going to be helpful as we develop sustainability measures what's the relationship of sustainability metrics to organizational performance and management systems

now as the organization learns these new indicators that need to be developed as we figure out what we want to focus on as we come up with these metrics then they have to be developed collected and analyzed and reported at first separately from routine indicators but then they eventually have to be integrated they have to be part of routine management a key indicator of success in fact it's going to be the ultimate invisibility of distinct sustainability metrics there needs to become a time when we actually look at sustainability metrics just like we look at market share return on equity profit and other more non-financial performance indicators like you know how many things that we produced what's been the cost of breakage all sorts of indicators that organizations put in and what's what are our customers saying how many complaints do we have what's the level of satisfaction how much repeat business you think about all the things an organization measures itself against now in the public sector these can be things like test scores in a school system they can be things like in rates they can be indicators widely ranging sets of indicators number of homicides number of misdemeanors the number of the amount of time it takes to respond to a fire all of these kinds of indicators are how organizations are managed we managed and we define success and manage organizations around these indicators okay so when we created the masters of the sustainability management one of our indicators of success is how many applications did we get how many people did we admit we want to make sure we only admit about no more than half the people that that apply and then how many of those people come well we want at least half of those people to show up you know those are all indicators of success now in the program once it begins we don't want to see people dropping out because they hate it okay so our retention and attrition rates are indicators of success organizations run against metrics all the time and so what this is saying is we need to add sustainability indicators to that mix it's very straightforward what we're trying to do but it's very hard so it leads me to the fourth issue for today what are the methodological issues raised by measuring sustainability now part of the problem is when you can when you develop a measure you want the measure to be reliable and valid reliable means that every time you do the measure you're measuring the same thing you don't change it you don't change the goalposts you don't change the scoring system in the middle of of the measurement you know you don't decide oh this isn't going too well let's change the criteria okay that's that's a measure that's that's not reliable and then they have to be valid you have to measure what you actually think

you're measuring okay and when you so that's\n00:15:19.130 the creation of the measure itself but\n00:15:21.829 then once you decide what you want to\n00:15:23.720 measure then you have to collect\n00:15:25.220 information you have to collect\n00:15:27.589 information in the same way you know\n00:15:29.959 there was a story I think it was a\n00:15:33.260 New York Times has a as a blog I think\n00:15:35.480 its 5:28 or something like that or 538\n00:15:37.940 the number of people in the Congress\n00:15:40.840 does their pull it's their political\n00:15:43.600 polling oriented website and they were\n00:15:46.850 talking about I think was Rasmussen the\n00:15:49.040 polling company and they discovered that\n00:15:51.200 methodological II they had the worst\n00:15:54.440 polls during this election they were off\n00:15:56.870 more than anybody else and they looked\n00:15:59.480 at how they were collecting their\n00:16:00.950 information one of the things you do\n00:16:02.720 when you do polling is you have to\n00:16:04.640 randomize at the place of you know went\n00:16:07.400 like when you make the call you have to\n00:16:09.710 say you have to decide you want to talk\n00:16:11.420 to the oldest female in the house and so\n00:16:14.600 if the oldest male in the house is there\n00:16:17.150 you say no no I need to talk to you\n00:16:18.860 oldest female she's not here you hang up\n00:16:20.660 you got to go to another person that's\n00:16:22.550 how you randomize at the household\n00:16:24.500 apparently they don't do it they do a\n00:16:26.840 few other things in their methodology so\n00:16:29.420 how you collect information has a lot to\n00:16:31.970 do with the quality of the information\n00:16:33.710 that you collect now when you're new\n00:16:36.320 it's something when you're starting\n00:16:38.120 something for the first time you don't\n00:16:39.650 have a lot of experience collecting it\n00:16:41.150 you make mistakes I mean you make\n00:16:43.700 mistakes because you don't quite know\n00:16:45.140 how to ask the question you don't quite\n00:16:47.900 know how to calibrate your measurement\n00:16:50.630 tools and so as you're doing it you have\n00:16:53.600 to learn so after a while you figure it\n00:16:57.050 out you get better at it you know you\n00:16:58.940 get better at taking the measurement and\n00:17:00.800 so eventually the your collection system\n00:17:04.160 or works better so you need to\n00:17:07.459 understand that the second method issue\n00:17:09.619 here is the experience and skill in\n00:17:12.380 collecting information itself and then\n00:17:17.119 sometimes it's hard to know what to\n00:17:18.410 measure you know we just went through\n00:17:19.490 all those other measures right the whole\n00:17:21.589 field of sustainability water energy\n00:17:23.650 material so what's more important in our\n00:17:26.089 area and then how do I wait them are\n00:17:29.030 they all equal is some more is some more\n00:17:31.670 important to my product or my\n00:17:32.990 organization than others you know in a\n00:17:35.180 service business does it really is there\n00:17:38.090 is material intensity is important for\n00:17:40.130 example is energy intensity probably not\n00:17:42.160 but how much more important to take a\n00:17:44.390 company like Starbucks a very\n00:17:45.980 interesting point before\n00:17:47.120 is this a service business that creates\n00:17:49.610 ambience and the coffee's incidental or\n00:17:51.440 is it a coffee company and the service\n00:17:53.660 is incidental judging by the service I\n00:17:56.090 beginning I think the service may be\n00:17:57.290 incidental but no the question here is\n00:17:59.840 you have to make that decision as you\n00:18:02.870 create your measurement system and you\n00:18:05.240 have to and what you decide to measure\n00:18:07.640 then the and the definition of success\n00:18:10.700 has a

direct impact on the behavior of the organization that's why this is so important you know in the school system when we start focusing on taking tests teachers start teaching to the test they don't care whether the kids are learning they care whether they're performing well on the test now if the two things are the same great but if they're not you've got a problem so measurement is not neutral and it's certainly not neutral within the organization okay so you need to understand that as you think about sustainability indicators and this issue of cherry-picking indicators you look to see what are we doing good at let's emphasize that makes us look more sustainable and particularly with the emphasis on green washing you have to watch for that weighting indicators in an overall scale can it can introduce bias and as we want to come up with an overall sustainability measure like the gross national product like market share like the bottom-line okay what's it going to be how do we put that number together how do we weight it so that's an issue that's still out there and I think will vary by organization by geography by product by service by what the organization's distinctive competences what is it trying to trying to do in some cases qualitative factors may be just as important as those things that you can measure some of the sustainability issues that are important to you aren't subject to measurement yes you know the fair trade issues you were describing before which aren't part of my measurement of sustainability but might be part of yours how do you measure that how do you measure satisfaction how do you measure then if you're comparing material intensity to water intensity to energy intensity which is more important but management has to make these decisions and one of the critical issues for a manager is decide what's the definition of success and how will you know if we got there so in sustainability is the same thing what's the definition of a sustainability success for organization and what are the indicators that I as the manager I'm going to use to measure against as we seek to perform it so despite all of these problems and I don't think I've been too shy about introducing them to you sustainability metrics are essential we really have to figure out how to do this we need to develop a way to operationally measure success in this area measurements force precision in defining goals and then force precision in the actions to achieve those goals now sometimes that means you make mistakes some of the first efforts at measuring performance in organizations were led organizations astray the classic was actually in the military during the war in Vietnam one of the first quantitative performance indicators used by Bob McNamara was Secretary of Defense was body counts they

measured how many people were dying\n00:21:13.720 they forgot something so they saw how\n00:21:16.820 many Americans were dying how many\n00:21:18.200 beaten to me soldiers were dying what\n00:21:20.779 they didn't understand is that our\n00:21:22.700 tolerance for loss was a quite a bit\n00:21:26.090 lower than the Vietnamese because they\n00:21:28.639 were defending their country and so if\n00:21:30.889 they lost a million or two million\n00:21:32.809 soldiers in the defense of their\n00:21:34.429 homeland they were going to put up with\n00:21:36.980 that if we lost 50,000 soldiers we\n00:21:39.679 weren't going to put up with it\n00:21:40.850 so the real measure of success probably\n00:21:43.639 should have been territory held or\n00:21:45.619 should have been something else besides\n00:21:47.840 body counts but you know look like a\n00:21:50.960 good measure seemed pretty important at\n00:21:52.519 the time just happened to be wrong now\n00:21:58.119 organizations always allocate scarce\n00:22:01.009 resources all organizational resources\n00:22:03.740 are always scarce and they allocate them\n00:22:05.710 to focus on goal achievement there's\n00:22:09.169 always a competition for the time and\n00:22:11.000 energy of the people who work in an\n00:22:12.320 organization\n00:22:13.700 and so that's the other reason you want\n00:22:17.059 sustainability indicators by creating\n00:22:20.059 those indicators you then get into the\n00:22:21.860 competition for money and people in an\n00:22:24.830 organization okay if you don't have\n00:22:27.529 those sustainability indicators then you\n00:22:30.559 know people will be managing the\n00:22:32.299 organization against other factors and\n00:22:34.070 so it's absolutely essential to develop\n00:22:36.679 these indicators or this activity will\n00:22:39.830 not continue in an organization so\n00:22:42.409 that's the the bottom line frankly of\n00:22:45.260 why these measures have to be developed\n00:22:48.309 the process of defining and improving\n00:22:52.159 organizational routines which is what\n00:22:54.139 we're talking about to make\n00:22:55.639 sustainability happen in an organization\n00:22:57.559 has to begin somewhere sometimes it\n00:23:00.860 begins with a small step something that\n00:23:03.350 you can get your arms around you can\n00:23:05.059 define so let's say it's let's reduce\n00:23:07.730 energy use okay let's just reduce our\n00:23:10.970 electric bills okay that will make us a\n00:23:13.850 more sustainable organization you see\n00:23:15.350 that happening people are putting in\n00:23:17.299 different kind of light bulbs and\n00:23:18.679 they're putting in you know electronic\n00:23:22.880 devices to control when the air\n00:23:25.190 conditioning comes on and when it goes\n00:23:27.260 off and motion detectors and all of\n00:23:29.600 those kinds of things once the initial\n00:23:35.980 sustainability's are developed they can\n00:23:38.809 be applied they will be and then they\n00:23:41.330 can be refined so the indicators\n00:23:44.630 themselves are symbolic in its early\n00:23:47.990 stages in convincing people in the\n00:23:49.880 organization oh we're now being managed\n00:23:52.370 against this we're going to be asked how\n00:23:55.399 much water we use how much electricity\n00:23:57.529 we use we might even be asked how much\n00:24:01.159 garbage we're producing and how much of\n00:24:03.409 a recycling maybe we'll weigh it you\n00:24:06.289 start with the simple stuff the stuff\n00:24:08.299 that we know are relatively easy to do\n00:24:12.110 and then as time goes on you'll see the\n00:24:14.659 measurements become more sophisticated a\n00:24:17.769 benchmarking and learning new\n00:24:20.510 organization routines from other\n00:24:22.100 organizations is essential in new\n00:24:24.730 management areas like

sustainability\n00:24:27.320 and so what you're gonna see is a lot of\n00:24:29.270 people borrowing from each other people\n00:24:31.220 going to other organizations and trying\n00:24:32.780 to figure out well how do they do it at\n00:24:33.890 Starbucks how they do it at Walmart\n00:24:35.860 let's see let's try to imitate that\n00:24:38.180 let's see if that'll work here\n00:24:39.940 eventually you're going to start seeing\n00:24:42.290 the indicators get more common and in\n00:24:45.950 more general use you know we saw this\n00:24:48.770 actually in the financial world with the\n00:24:51.260 development of generally accepted\n00:24:52.580 accounting practices though those\n00:24:55.160 practices were not the first set of\n00:24:57.440 accounting practices those are the ones\n00:24:59.390 that developed over time as more and\n00:25:01.520 more organizations started to use them\n00:25:04.070 you're gonna see the same thing I\n00:25:05.870 believe happened here so what does this\n00:25:10.370 lead us to well first you know as I\n00:25:13.640 talked about during our class on\n00:25:15.170 performance management which is part of\n00:25:16.940 the first few weeks I went through all\n00:25:18.770 of the tools of management in order to\n00:25:20.960 manage something you have to measure it\n00:25:22.430 without measurement you can't tell if\n00:25:25.010 what management's doing is making it\n00:25:26.990 better or making it worse some\n00:25:29.570 measurements essential very often though\n00:25:32.150 when you start measuring something for\n00:25:33.800 the first time you make mistakes and so\n00:25:37.100 what's really important is that we\n00:25:38.930 program an organizational learning that\n00:25:41.810 we evaluate this that we keep trying to\n00:25:44.210 relate it to goals the other thing that\n00:25:46.280 happens in organizations is things get\n00:25:48.080 ossified people get in they say this is\n00:25:50.600 how we measure sedating ability around\n00:25:52.040 here I don't care how they do it at\n00:25:53.810 Walmart we're gonna do it this way\n00:25:55.370 that's a bad thing you want this change\n00:25:58.370 to take place early on we have a lot to\n00:26:03.080 learn and need to be open to listening\n00:26:05.510 observing and changing our\n00:26:07.580 sustainability strategies and the way we\n00:26:09.860 measure this success of sustainability\n00:26:12.770 itself so and I've made this point a\n00:26:16.370 number of times today that this is new\n00:26:19.420 we don't really know what we're doing\n00:26:21.620 yet we know that it needs to be done and\n00:26:24.800 I've actually seen I mean in in doing\n00:26:27.950 the book sustainability management and\n00:26:29.930 in preparing for for this session and\n00:26:32.330 for others there's been a fair amount of\n00:26:34.340 development than the last ten years\n00:26:36.220 enormous amount of progress have been\n00:26:38.330 made a lot of ideas that that were there\n00:26:40.970 at the very beginning of this literature\n00:26:42.409 have already been set aside by I think\n00:26:45.500 improvements and you're going to see a\n00:26:47.539 lot more\n", "title": "tactiq-free-transcript-lmdDnqBh-Zg.txt", "tether_id": null}, "status": "finished_successfully", "end_turn": null, "weight": 1.0, "metadata": {"command": "context_stuff", "is_visually_hidden_from_conversation": true, "message_type": null, "model_slug": "gpt-4", "default_model_slug": "gpt-4", "parent_id": "9271dafc-5ddd-4034-a175-febf44f12cdf", "request_id": "8851498eff285249-MXP", "timestamp": "absolute"}, "recipient": "all", "channel": null}, "parent": "9271dafc-5ddd-4034-a175-febf44f12cdf", "children": ["81b8dbab-a65d-46f6-985e-ef63c09bcc4a"]}, "81b8dbab-a65d-46f6-985e-ef63c09bcc4a": {"id": "81b8dbab-a65d-46f6-985e-ef63c09bcc4a", "message": {"id": "81b8dbab-a65d-46f6-985e-ef63c09bcc4a", "author": {"role": "tool", "name":

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["In the evolving landscape of sustainability metrics, particularly without a globally  
standardized set, there are several dimensions along which these metrics could grow to  
incorporate broader sustainability and ethical considerations, as outlined in the  
chapters and references you provided.\n\n**1. Expansion of Sustainability  
Metrics:**\n\nThe inclusion of human health impacts, living wages, and working  
conditions represents a holistic approach to sustainability metrics. These indicators  
are crucial as they reflect not only environmental but also social sustainability.  
Including such metrics would ensure a more comprehensive understanding of the impacts  
of production processes, not only on the environment but also on the social structures  
of the communities involved. According to Mang, Haggard, and the Regensis Group, a  
regenerative approach would encourage this expansion as it involves understanding and  
interacting with the socio-economic characteristics of a place and integrating the  
project within these dynamics (Mang et al., 2016).\n\n**2. Creative Integration of New  
Metrics:**\n\nCreative integration could involve the use of innovative technologies to  
track and verify sustainable practices across supply chains. For instance, as Markus  
Mutz suggests in his discussion on supply chain transparency, technologies like  
blockchain and RFID could be employed to ensure the traceability of products from the  
source to the consumer, providing data on whether the production processes adhere to  
ethical standards like fair labor practices and minimal environmental impact (Tactiq-  
Free Transcript, 2021).\n\n**3. Technological Solutions:**\n\nTechnology could play a  
significant role in evolving sustainability metrics. For example, advanced data  
analytics and machine learning could be used to analyze complex datasets to monitor  
and evaluate compliance with sustainability standards in real-time. Technologies like  
IoT (Internet of Things) sensors could be deployed in manufacturing plants to monitor  
emissions and resource usage directly, facilitating a real-time feedback mechanism  
that aids in maintaining sustainability standards.\n\n**4. Practical Applications and  
Challenges:**\n\nWhile technological solutions provide significant advantages, they also  
bring challenges such as data privacy, the need for large-scale implementation, and  
ensuring that the technology is used ethically. As Steve Cohen discusses, integrating  
sustainability metrics within existing management systems in organizations is crucial.  
This integration ensures that sustainability becomes a routine part of decision-making  
processes rather than an afterthought (Tactiq-Free Transcript, 2021).\n\n**5. Societal
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and Policy Changes:**\nAdoption of expanded sustainability metrics requires supportive policies and societal change. This involves regulatory frameworks that mandate the inclusion of comprehensive sustainability metrics in reporting and operations. Public awareness and demand for sustainable products also drive companies to adopt these metrics proactively.\n\nIn summary, the evolution of sustainability metrics to include broader indicators such as human health impacts and living wages requires an integrated approach that combines technological innovation with regulatory and societal support. This comprehensive strategy ensures that sustainability metrics are not only more inclusive but also effectively embedded within the operational frameworks of organizations, contributing to truly sustainable development practices."}], "status": "finished_successfully", "end_turn": true, "weight": 1.0, "metadata": {"finish_details": {"type": "stop", "stop_tokens": [100260]}, "citations": [], "gizmo_id": null, "message_type": null, "model_slug": "gpt-4", "default_model_slug": "gpt-4", "pad": "AAAAAAAAAAAAAAAAAAAA", "parent_id": "c4e72b42-d67f-419c-995c-6aald2498f09", "request_id": "8851498eff285249-MXP", "timestamp": "absolute", "is_complete": true}, "recipient": "all", "channel": null, "parent": "c4e72b42-d67f-419c-995c-6aald2498f09", "children": []}, {"id": "aaa2239a-0696-411e-82c4-640f2af958b5", "message": {"id": "aaa2239a-0696-411e-82c4-640f2af958b5", "author": {"role": "user", "name": null, "metadata": {}}, "create_time": 1715924759.004403, "update_time": null, "content": {"content_type": "text", "parts": ["Answer the questions below each one at a time, based on the the chapters referenced in the reference list below and attached and the you tube transcripts attached. Answer in an academic way and reference the attachments in text. \n\nBringezu, S., & Bleischwitz, R. (Eds.). (2009, September). Sustainable resource management: Global trends, visions, and policies. Routledge.\nChapter 2: Analyzing global resource use of national and regional economies across various levels. \n\nMang, P., Haggard, B., & Regensis Group. (2016). Regenerative development and design: A framework for evolving sustainability. John Wiley & Sons.\nPART ONE: Creating regenerative projects\nChapter 1: Evolution\nChapter 2 Understanding place\n\nBringezu, S., & Bleischwitz, R. (Eds.). (2009, September). Sustainable resource management: Global trends, visions, and policies. Routledge.\nChapter 2: Analyzing global resource use of national and regional economies across various levels. \n\n1. Because there are no globally agreed upon set of standard sustainability metrics, and considering the complexity of process chains in a global economy, how might those metrics evolve or grow to include other indicators of measurement?\n2. What might we measure (for example, the human health impacts of production, the living wage for and working conditions of workers)? \n3. What might be some creative ways to incorporate and integrate those new types of metrics into sustainability? Is there a technological fix?\n\n"]}], "status": "finished_successfully", "end_turn": null, "weight": 1.0, "metadata": {"attachments": [{"id": "file-wRoN9IGwwGzaK8AP6BufoHBk", "size": 15086, "name": "tactiq-free-transcript-ygxh6KR4Bpk.txt", "mime_type": "text/plain"}, {"id": "file-tUW5FEVxOWlkIvZeXInaloOI", "size": 32527, "name": "tactiq-free-transcript-lmdDnqBh-Zg.txt", "mime_type": "text/plain"}, {"id": "file-3xHIpFhPL82jSP4FoQKgKem0", "size": 49991032, "name": "Regenerative Development and Design A Framework for Evolving Sustainability (Regensis Group) (Z-Library).pdf", "mime_type": "application/pdf"}, {"id": "file-j485zuoDgiTlyfk4w2CTX1Jr", "size": 7500241, "name": "Sustainable Resource Management Global Trends, Visions and Policies (Stefan Bringezu Raimund Bleischwitz) (Z-Library).pdf", "mime_type": "application/pdf"}]}, "request_id": "88514dedafbb5249-

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humans. Now, some of this is going to sound a little bit like science fiction, but it's already happening. Let me explain. So, in order to solve this information problem, we need to do three things: verify, trace and share. Verify specific sustainability and ethical production claims in a data-based and automated way. Then trace those individual physical products throughout their supply chains, and finally, share that information with consumers in a way that truly gives them a choice and lets them make consumption decisions that are more aligned with their values. I'm going to use a real product and a supply chain where we've made all of this a reality already: a Patagonian toothfish, or Chilean sea bass, as it's called in the US. Number one, verify. Verify how something is produced. But not just by saying, "Trust me, this is good, trust me, we've done all the right things," but by producing evidence for that individual physical product, and the way it was produced. By producing evidence for a specific sustainability or ethical production claim. So for example, in the case of the fish, has this fish been caught in an area where there's enough of them, so that it's sustainable to catch it there and not in a marine protected area? So what we're doing here is we're taking almost real-time GPS data from the ship -- the ship that's fishing -- and that tells us where the ship is and where it's going at what speed. And we can then combine that with other types of data, like, for example, how deep the sea floor is. And combining all of this information, our machine-learning algorithms can then verify, in an automated way, whether the ship is only fishing where it's supposed to, or not. And as sensors become cheaper, we can put them in more places. And that means we can capture more data, and combining that with advancements in data science, it means that we can now verify specific sustainability and ethical production claims in an automated, real-time and ongoing manner. And that really lays the basis for this information revolution. So, number two, trace. Trace those individual physical products, so that we can truly say that the claim that we've verified about a certain product actually belongs to that individual product that we as consumers have right in front of us. Because without that level of traceability, all that we've really verified in the first place is that somebody, somewhere, at some point caught a fish in a sustainable way, or didn't harm the employee when asking them to produce a T-shirt, or didn't use pesticides when growing a vegetable that didn't actually need it. Only if I give a product an identity from the start and then trace it throughout the whole supply chain, can this claim and the value that's been created by producing it in the right way truly stay with it. Now, I've talked about cheaper sensors. There are many other technological developments that make all of this much more

possible today than ever before. For example, the falling costs of tags. You give a product a name, a serial number, an identity, the tag is its passport. What you can see here is a toothfish being caught. This is what's called a longline fishery, so the fish are coming up onto the boat on individual hooks. And as soon as the fish is on board, it is killed, and then after that, we insert a small tag into the fish's flesh. And in that tag, there is an RFID chip with a unique serial number, and that tag follows the fish throughout the whole supply chain and makes it really easy to sense its presence at any port, on any truck or in any processing plant. But consumers can't really read RFID tags. And so, when it comes to filleting and packaging the fish, we read the RFID tag and then remove it. And then we add a unique QR code to the packaging of the fish. And that QR code then points back to the same information that we've verified about the fish in the first place. And so, depending on the type of product that we're working with, we may use QR codes, bar codes, RFID tags or other tag technologies. But there are also technologies that are at the brink of large-scale breakthrough that make tags themselves obsolete. Like, for example, analyzing a product for trace elements that can then tell you quite accurately where it is actually from. Then there's blockchain. A decentralized technology can act as a catalyst for this revolution. Because it can help mitigate some of the trust issues that are inherent to giving people information and then asking them to change their consumption behavior because of that information. And so, we use blockchain technology where it adds value to what we're doing. But importantly, we don't let the limitations that this technology still has today, like, for example, with regards to scaling, we don't let that stand in our way. And that brings us to the third point. Share. How to share the information that we've verified and tracked about where a product is from, how it was produced and how it got to where it is? How to share this information is really different from product to product. And different from where you buy it. You behave differently in those situations. You are stressed and time-poor in the supermarket. Or with short attention span over dinner, because your date is so cute. Or you are critical and inquisitive when researching for a larger purchase online. And so for our fish, we've developed a digital experience that works when buying the fish in a freezer in a fish specialty store and that gives you all of the information about the fish and its journey. But we also worked with a restaurant and developed a different digital experience that only summarizes the key facts about the fish and its journey, and works better in a dinner setting and, hopefully, there doesn't annoy your date too much. Now, that brings us full circle. We've verified that the fish was caught in an area where it's sustainable to do

so. We've then traced it throughout the entire supply chain to maintain its identity and all the information that's attached to it. And then, we've shared that information with consumers in a way that gives them a choice and lets them make consumption decisions that are more in line with their values. Now, for this fish example, this is already rolled out at scale. This season, the entire fleet of the world's largest toothfish fishing company, Austral Fisheries, is tagging every single fish that they catch and that ends up in their premium branded "Glacier 51" product. And you can already buy this fish. And with it, you can have all of the information I talked about today, and much more, attached to each individual fish or portion of the fish that you may buy. But this is not a fish or seafood thing. We're working on many, many different commodities and products and their supply chains across the globe. From dairy to fruit and vegetables, to nonfood products made out of wood. As a consumer, all of this may sound like a huge burden, because you don't have time to look at all of this information every time you buy something. And I don't expect you to, because you'll have help with that. In the future, we'll leave the decision of which specific product to buy increasingly up to machines. An algorithm will know enough about you to make those decisions for you, so you don't have to. And maybe it will even do a better job at it. In a recent study, 85 percent of those buying a product through a virtual assistant said that they, on occasion, actually went with the top product recommendation of that virtual assistant, rather than the specific product or brand that they set out to buy in the first place. You just say you need toilet paper, it's then an algorithm that decides which brand, price point or whether you go with recycled or not. Well, nowadays this is usually based on what you bought in the past, or whoever pays the most to the company behind the virtual assistant. But why shouldn't that be also based on your values? Knowing that you want to buy planet-friendly and knowing whether and how much you're willing and able to pay for that. Now, that will make it easy and seamless, but still based on granular effects and data to choose the right products. Not by necessarily doing it yourself, but by asking an algorithm that knows how much you care about this planet. Not by necessarily doing it yourself, but by asking an algorithm that is never time-poor or distracted, or with short attention span because of the cute date, and that knows how much you care about this planet and the people living on it, by asking that algorithm to look at all of that information for you and to decide for you. If we have reliable and trustworthy information like that and the right systems that make use of it, consumers will support those who are doing the right thing by producing products in a sustainable and ethical way. They will support them every time by choosing their

goods over others.\n00:13:04.042 And that means that goodproducers and processors and
retailers\n00:13:09.000 will get rewarded.\n00:13:10.292 And bad actors will be
forcedto adjust their practices\n00:13:14.667 or get out of business.\n00:13:17.333
And we need that.\n00:13:19.000 If we want to continue to live togetheron this
beautiful planet,\n00:13:22.792 we really need it.\n00:13:24.667 Thank
you.\n00:13:25.958 (Applause)\n", "title": "tactiq-free-transcript-ygxh6KR4BPk.txt",
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Zg.txt", "text": "# tactiq.io free youtube transcript\n# Steve Cohen, Sustainability
Metrics\n# https://www.youtube.com/watch/lmdDnqBh-Zg\n\n00:00:00.740 we'll talk
with you about how we define\n00:00:03.210 these metrics what aspects of\n00:00:07.259 sustainability should an organization\n00:00:09.120 measure which I think is one of
the\n00:00:10.500 critical issues that we have to think\n00:00:12.509 about and then
the relationship of these\n00:00:15.420 sustainability metrics to the\n00:00:17.580 organization's general performance\n00:00:19.500 measurement and management
system the\n00:00:21.600 challenge is going to be to integrate so\n00:00:24.660 we
have to develop these new ways of\n00:00:27.090 looking at the world and
of\n00:00:28.740 organizational performance but then\n00:00:30.929 after a while
it's going to be very\n00:00:32.430 important that they not be seen
as\n00:00:34.559 something separate oh that's just the\n00:00:36.510 way we
manage around here nothing\n00:00:38.879 different than our routine and
really\n00:00:41.250 part of other types of metrics what are\n00:00:45.000 the
methodological issues raised by\n00:00:46.770 measuring sustainability and I hinted
at\n00:00:49.710 that before the complexity of this issue\n00:00:52.670 why it's
important to do this and and\n00:00:55.410 what what does this all lead us
to\n00:00:57.809 conclude with so how do we define\n00:01:00.780 sustainability
metrics so since this is\n00:01:03.840 a course the sustainability
management\n00:01:05.610 I'm going to have to give you a\n00:01:06.600 definition
so they are an organization\n00:01:09.540 or jurisdictions indicators of
resource\n00:01:13.799 utilization waste reduction and\n00:01:16.970 pollution
discharges into the\n00:01:18.990 environment some being very focused
here\n00:01:21.420 there's a lot of other things people\n00:01:22.560 might
measure in fact in our case study\n00:01:25.259 they talked about a bunch of
other\n00:01:26.850 things I'm going to try to focus on\n00:01:29.280 these three
things now according to one\n00:01:32.610 set of authors that I'm quoting here
it\n00:01:35.490 includes material intensity energy\n00:01:38.820 intensity water
consumption toxic\n00:01:42.750 emissions and pollutants they're\n00:01:44.430
actually separating pollutants into\n00:01:46.500 toxics and other pollutants because
put\n00:01:50.549 and toxic being those pollutants that\n00:01:53.310 are most intense
that can poison life\n00:01:56.540 relatively quickly where some

pollutants\n00:01:59.100 can simply change things not always for\n00:02:01.680 the better\n00:02:02.130 some forms of pollutants are really\n00:02:04.320 having too much of a good thing too much\n00:02:06.990 nutrient too much nutrition in a lake\n00:02:10.400 creates a set\n00:02:13.270 of environmental impacts that you don't\n00:02:15.040 want but that's different than taking\n00:02:18.310 plutonium and dropping it off in the\n00:02:20.890 middle of the lake one of them is very\n00:02:23.470 toxic immediately and the other is\n00:02:25.750 simply a pollutant there are no agreed\n00:02:28.600 set of sustainability metrics\n00:02:31.270 everyone has their ideas about what's\n00:02:33.610 important and we should all expect that\n00:02:35.860 this is going to evolve for quite a\n00:02:38.230 while so let me focus on the aspects\n00:02:42.940 that I think an organization should\n00:02:44.500 measure and I should really say that\n00:02:46.450 these are starting points I'm really\n00:02:49.270 working and I do this here and I do this\n00:02:52.330 a little bit in my writing I'm trying to\n00:02:54.340 create some boundaries knowing the\n00:02:56.500 people are going to take potshots at it\n00:02:58.270 okay and that's okay that's really how\n00:03:00.640 these things start that's how they\n00:03:02.530 evolve so I don't want you to think oh\n00:03:04.900 he said it was this therefore that's\n00:03:06.550 true and in in your final exam I'm not\n00:03:10.930 going to have a set of true or false\n00:03:13.170 questions or multiple-choice questions\n00:03:16.210 related to this in fact there won't be\n00:03:17.950 any true or false questions or multiple\n00:03:20.530 choice questions anywhere in this course\n00:03:22.150 in part because we simply don't have\n00:03:24.250 that level of information here so\n00:03:27.160 material intensity is the first pounds\n00:03:29.830 of material wasted per unit of output in\n00:03:33.370 other words what is it that we're\n00:03:35.800 throwing away that doesn't go into the\n00:03:38.320 product okay that's one element of\n00:03:41.370 material intensity but also is their\n00:03:45.670 design for reuse does the product have\n00:03:47.920 the potential to be returned for\n00:03:50.220 remanufacturing or is it used up after\n00:03:53.500 it's used is there some element of it\n00:03:56.140 when you think about material intensity\n00:03:58.000 one of the questions is is this is it\n00:04:00.190 possible to recycle this are the\n00:04:03.640 materials being used for this product\n00:04:06.480 renewable or mined from one-time\n00:04:09.160 geologic resources so it's not so part\n00:04:12.430 of its can it be used again but part of\n00:04:14.800 it is is this something that we don't\n00:04:16.930 have to worry about whether it's\n00:04:18.070 recycled because we can make more of it\n00:04:20.019 because it's essentially solar and\n00:04:22.919 organic in its in its orientation\n00:04:26.410 so that's material intensity the second\n00:04:29.600 area is energy intensity and this is\n00:04:32.120 expressed as BTUs per unit it's a\n00:04:35.060 measure of the net fuel energy consumed\n00:04:37.099 to provide the heat and power\n00:04:38.990 requirements of the production process\n00:04:41.020 okay so that's energy intensity also\n00:04:44.150 again renewable versus fossil fuels so\n00:04:47.300 it's not just how much energy what's the\n00:04:49.520 source of the energy and also the\n00:04:52.960 efficiency of the use of the energy in\n00:04:55.910 other words how much of the energy in\n00:04:59.300 the production process could have been\n00:05:02.620 recovered so we'll have a production\n00:05:05.120 process that uses say a thousand dollars\n00:05:07.520 worth of electricity but it turns out\n00:05:09.470 600 of that was wasted there was waste\n00:05:12.470 heat that went up the stack and we

could have used it we could have used that energy for some other production process if we had recovered it so these are all factors the energy intensity that is related to sustainability third factors water consumption expressed as gallons of fresh water excluding rain water consumed per unit of output how much water is the stuff we use when we're making it okay other factors though again with water the reuse of the water what is the discharge when you release that water into the environment can it be reused or is it hopeless is it now water that can't be used for drinking or for growing plants also can we improve the efficiency through improved transmission reduced evaporation in the case of plants more efficient plants in their root structure so water consumption is an issue that we have to measure toxic emissions expressed as pounds of toxic materials emitted by the process per unit of output okay now these are all quotations from the work that I've cited here that I hope you've taken a look at toxic chemicals are defined by a number of pieces of US legislation we've gone through a number of regulatory processes to decide what's toxic and what isn't but other factors that need to be considered when you're thinking about toxicity is the degree of toxicity the treatment technology do we have a way of dealing with it and also even most importantly in my view is pathway of exposure is this a toxic that very easily gets into people's homes and then into their biological systems is there you know are these toxics that once they're released have less of a capacity to impair people's homes and lives okay so those are all factors that you have to think about and then there's pollutant emissions which can be expressed as pounds of pollutants emitted by the process per unit of output for every car there's X amount of pollution for every you know for every watch there's X amount of pollution so you want to measure that how much how many what kind of emissions are there now that's for greenhouse gas emissions but for other air pollutants also sulfur dioxide other kinds of some of our more traditional pollutants let's call it then we want to think not just of the pollution emissions but what's the health impact and are the health impacts things that we can do something about or are they things that we can't do anything about if the impact is asthma is that something that's treatable versus the impact being cancer which whilst treatable perhaps is less treatable so we actually have to look at those things though this may sound a little brutal but those are in fact things you have to judge how bad is this stuff is a question you have to ask and has to be answered no other factors are you know the issue of sustainability can differ by geography okay you can have a landfill in a desert and it's going to have less of

an environmental impact on the surroundings because it's not going to do much to ground water you put a landfill you know you know or you know if you try to hydro frack gas by the watershed that's a little bit different than if it's in a place that doesn't have a lot of groundwater not to say you should do in either place but that is something a sustainability metric would help you to measure and to weigh along with other kinds of issues and then you have to wait all this stuff water energy toxic pollutants what's more important as we develop the measures for our organization in this place all of which is going to vary by what we do where we are and what's the human settlement patterns are around us okay now again I said human settlement patterns there people would say well that's unethical we should worry just as much about the B&S and the answers about people well I know that there people believe that and I I think that that is an ethical choice that they make I don't make that choice I'm more concerned about people so those are the problems in measurement I mean just think about what I've just laid out you know all of these different issues and all of these complexities and how do you measure that in an organization now having laid out how complex is let me just say that organizations do this all the time you have to measure what an organization does you have to measure its performance this is an aspect of its performance that's going to become more and more important in organizational management in part because of the regulatory environment because government's going to make people do it in part because resources themselves are becoming contaminated and scarce and we have no choice because otherwise we will degrade the resources of the providers with wealth government it may lead us to do that but corporations themselves may see the importance of doing it and some of them already have and then this is cultural change which I think is taking place which is to say that you know how do we define criminal activity in a society it's a cultural definition okay you know in one society you know you pay the trucker you know \$1,000 a month to make sure your truck doesn't get let's say hijacked okay in some societies that's the cost of doing business and other societies that's corruption okay those things are socially defined well what we're seeing is that increasingly and we saw a little bit this in the Starbucks case before that the social definition of a well-run corporation is becoming a sustainable corporation you and your friends don't want to work for a company that is doing evil what's the Google motto don't don't be evil don't do evil don't be evil okay now they're serious about that they actually think about is what we're doing somehow adding to pain and misery

in the world okay that's become important to people and that's going to be helpful as we develop sustainability measures what's the relationship of sustainability metrics to organizational performance and management systems now as the organization learns these new indicators that need to be developed as we figure out what we want to focus on as we come up with these metrics then they have to be developed collected and analyzed and reported at first separately from routine indicators but then they eventually have to be integrated they have to be part of routine management a key indicator of success in fact it's going to be the ultimate invisibility of distinct sustainability metrics there needs to become a time when we actually look at sustainability metrics just like we look at market share return on equity profit and other more non-financial performance indicators like you know how many things that we produced what's been the cost of breakage all sorts of indicators that organizations put in and what's what are our customers saying how many complaints do we have what's the level of satisfaction how much repeat business you think about all the things an organization measures itself against now in the public sector these can be things like test scores in a school system they can be things like in rates they can be indicators widely ranging sets of indicators number of homicides number of misdemeanors the number of the amount of time it takes to respond to a fire all of these kinds of indicators are how organizations are managed we managed and we define success and manage organizations around these indicators okay so when we created the masters of the sustainability management one of our indicators of success is how many applications did we get how many people did we admit we want to make sure we only admit about no more than half the people that that apply and then how many of those people come well we want at least half of those people to show up you know those are all indicators of success now in the program once it begins we don't want to see people dropping out because they hate it okay so our retention and attrition rates are indicators of success organizations run against metrics all the time and so what this is saying is we need to add sustainability indicators to that mix it's very straightforward what we're trying to do but it's very hard so it leads me to the fourth issue for today what are the methodological issues raised by measuring sustainability now part of the problem is when you can when you develop a measure you want the measure to be reliable and valid reliable means that every time you do the measure you're measuring the same thing you don't change it you don't change the goalposts you don't change the scoring system in the middle of of the

measurement you know you don't decide oh 00:15:04.820 this isn't going too well let's change 00:15:07.220 the criteria okay that's that's a 00:15:09.800 measure that's that's not reliable and 00:15:12.470 then they have to be valid you have to 00:15:13.910 measure what you actually think you're 00:15:15.140 measuring okay and when you so that's 00:15:19.130 the creation of the measure itself but 00:15:21.829 then once you decide what you want to 00:15:23.720 measure then you have to collect 00:15:25.220 information you have to collect 00:15:27.589 information in the same way you know 00:15:29.959 there was a story I think it was a 00:15:33.260 New York Times has a as a blog I think 00:15:35.480 its 5:28 or something like that or 538 00:15:37.940 the number of people in the Congress 00:15:40.840 does their pull it's their political 00:15:43.600 polling oriented website and they were 00:15:46.850 talking about I think was Rasmussen the 00:15:49.040 polling company and they discovered that 00:15:51.200 methodological II they had the worst 00:15:54.440 polls during this election they were off 00:15:56.870 more than anybody else and they looked 00:15:59.480 at how they were collecting their 00:16:00.950 information one of the things you do 00:16:02.720 when you do polling is you have to 00:16:04.640 randomize at the place of you know went 00:16:07.400 like when you make the call you have to 00:16:09.710 say you have to decide you want to talk 00:16:11.420 to the oldest female in the house and so 00:16:14.600 if the oldest male in the house is there 00:16:17.150 you say no no I need to talk to you 00:16:18.860 oldest female she's not here you hang up 00:16:20.660 you got to go to another person that's 00:16:22.550 how you randomize at the household 00:16:24.500 apparently they don't do it they do a 00:16:26.840 few other things in their methodology so 00:16:29.420 how you collect information has a lot to 00:16:31.970 do with the quality of the information 00:16:33.710 that you collect now when you're new 00:16:36.320 it's something when you're starting 00:16:38.120 something for the first time you don't 00:16:39.650 have a lot of experience collecting it 00:16:41.150 you make mistakes I mean you make 00:16:43.700 mistakes because you don't quite know 00:16:45.140 how to ask the question you don't quite 00:16:47.900 know how to calibrate your measurement 00:16:50.630 tools and so as you're doing it you have 00:16:53.600 to learn so after a while you figure it 00:16:57.050 out you get better at it you know you 00:16:58.940 get better at taking the measurement and 00:17:00.800 so eventually the your collection system 00:17:04.160 or works better so you need to 00:17:07.459 understand that the second method issue 00:17:09.619 here is the experience and skill in 00:17:12.380 collecting information itself and then 00:17:17.119 sometimes it's hard to know what to 00:17:18.410 measure you know we just went through 00:17:19.490 all those other measures right the whole 00:17:21.589 field of sustainability water energy 00:17:23.650 material so what's more important in our 00:17:26.089 area and then how do I wait them are 00:17:29.030 they all equal is some more is some more 00:17:31.670 important to my product or my 00:17:32.990 organization than others you know in a 00:17:35.180 service business does it really is there 00:17:38.090 is material intensity is important for 00:17:40.130 example is energy intensity probably not 00:17:42.160 but how much more important to take a 00:17:44.390 company like Starbucks a very 00:17:45.980 interesting point before 00:17:47.120 is this a service business that creates 00:17:49.610 ambience and the coffee's incidental or 00:17:51.440 is it a coffee company and the service 00:17:53.660 is incidental judging by the service I 00:17:56.090 beginning I

think the service may be\n00:17:57.290 incidental but no the question here is\n00:17:59.840 you have to make that decision as you\n00:18:02.870 create your measurement system and you\n00:18:05.240 have to and what you decide to measure\n00:18:07.640 then the and the definition of success\n00:18:10.700 has a direct impact on the behavior of\n00:18:14.330 the organization that's why this is so\n00:18:16.250 important you know in the school system\n00:18:18.410 when we start focusing on taking tests\n00:18:20.690 teachers start teaching to the test they\n00:18:23.840 don't care whether the kids are learning\n00:18:25.730 they care whether they're performing\n00:18:27.800 well on the test now if the two things\n00:18:29.030 are the same great but if they're not\n00:18:31.610 you've got a problem so measurement is\n00:18:34.550 not neutral and it's certainly not\n00:18:36.559 neutral within the organization okay so\n00:18:40.179 you need to understand that as you think\n00:18:42.890 about sustainability indicators and this\n00:18:45.260 issue of cherry-picking indicators you\n00:18:46.910 look to see what are we doing good at\n00:18:48.710 let's emphasize that makes us look more\n00:18:51.110 sustainable and particularly with the\n00:18:52.880 emphasis on green washing you have to\n00:18:54.380 watch for that weighting indicators in\n00:18:58.070 an overall scale can it can introduce\n00:18:59.960 bias and as we want to come up with an\n00:19:02.120 overall sustainability measure like the\n00:19:05.179 gross national product like market share\n00:19:08.240 like the bottom-line okay what's it\n00:19:10.790 going to be how do we put that number\n00:19:12.620 together how do we weight it so that's\n00:19:17.090 an issue that's still out there and I\n00:19:19.610 think will vary by organization by\n00:19:22.130 geography by product by service by what\n00:19:26.510 the organization's distinctive\n00:19:27.770 competences what is it trying to trying\n00:19:29.929 to do in some cases qualitative factors\n00:19:32.840 may be just as important as those things\n00:19:35.270 that you can measure some of the\n00:19:36.920 sustainability issues that are important\n00:19:38.570 to you aren't subject to measurement yes\n00:19:40.460 you know the fair trade issues you were\n00:19:42.980 describing before which aren't part of\n00:19:44.420 my measurement of sustainability but\n00:19:46.640 might be part of yours how do you\n00:19:47.990 measure that how do you measure\n00:19:49.700 satisfaction how do you measure then if\n00:19:52.790 you're comparing material intensity to\n00:19:55.220 water intensity to energy intensity\n00:19:56.780 which is more important but management\n00:19:59.060 has to make these decisions and\n00:20:00.559 one of the critical issues for a manager\n00:20:03.139 is decide what's the definition of\n00:20:04.850 success and how will you know if we got\n00:20:07.100 there so in sustainability is the same\n00:20:09.259 thing what's the definition of a\n00:20:10.970 sustainability success for organization\n00:20:13.100 and what are the indicators that I is\n00:20:15.320 the manager I'm going to use to measure\n00:20:18.559 against as we seek to perform it so\n00:20:21.259 despite all of these problems and I\n00:20:23.120 don't think I've been too shy about\n00:20:25.159 introducing them to you\n00:20:27.379 sustainability metrics are essential we\n00:20:30.830 really have to figure out how to do this\n00:20:32.990 we need to develop a way to\n00:20:34.730 operationally measure success in this\n00:20:37.369 area measurements force precision in\n00:20:41.809 defining goals and then force precision\n00:20:44.779 in the actions to achieve those goals\n00:20:47.240 now sometimes that means you make\n00:20:50.210 mistakes some of the first efforts at\n00:20:53.149 measuring performance in

organizations\n00:20:55.759 were led organizations astray the\n00:21:00.169 classic was actually in the military\n00:21:03.470 during the war in Vietnam one of the\n00:21:05.990 first quantitative performance\n00:21:07.340 indicators used by Bob McNamara was\n00:21:09.320 Secretary of Defense was body counts\n00:21:11.450 they measured how many people were dying\n00:21:13.720 they forgot something so they saw how\n00:21:16.820 many Americans were dying how many\n00:21:18.200 beaten to me soldiers were dying what\n00:21:20.779 they didn't understand is that our\n00:21:22.700 tolerance for loss was a quite a bit\n00:21:26.090 lower than the Vietnamese because they\n00:21:28.639 were defending their country and so if\n00:21:30.889 they lost a million or two million\n00:21:32.809 soldiers in the defense of their\n00:21:34.429 homeland they were going to put up with\n00:21:36.980 that if we lost 50,000 soldiers we\n00:21:39.679 weren't going to put up with it\n00:21:40.850 so the real measure of success probably\n00:21:43.639 should have been territory held or\n00:21:45.619 should have been something else besides\n00:21:47.840 body counts but you know look like a\n00:21:50.960 good measure seemed pretty important at\n00:21:52.519 the time just happened to be wrong now\n00:21:58.119 organizations always allocate scarce\n00:22:01.009 resources all organizational resources\n00:22:03.740 are always scarce and they allocate them\n00:22:05.710 to focus on goal achievement there's\n00:22:09.169 always a competition for the time and\n00:22:11.000 energy of the people who work in an\n00:22:12.320 organization\n00:22:13.700 and so that's the other reason you want\n00:22:17.059 sustainability indicators by creating\n00:22:20.059 those indicators you then get into the\n00:22:21.860 competition for money and people in an\n00:22:24.830 organization okay if you don't have\n00:22:27.529 those sustainability indicators then you\n00:22:30.559 know people will be managing the\n00:22:32.299 organization against other factors and\n00:22:34.070 so it's absolutely essential to develop\n00:22:36.679 these indicators or this activity will\n00:22:39.830 not continue in an organization so\n00:22:42.409 that's the the bottom line frankly of\n00:22:45.260 why these measures have to be developed\n00:22:48.309 the process of defining and improving\n00:22:52.159 organizational routines which is what\n00:22:54.139 we're talking about to make\n00:22:55.639 sustainability happen in an organization\n00:22:57.559 has to begin somewhere sometimes it\n00:23:00.860 begins with a small step something that\n00:23:03.350 you can get your arms around you can\n00:23:05.059 define so let's say it's let's reduce\n00:23:07.730 energy use okay let's just reduce our\n00:23:10.970 electric bills okay that will make us a\n00:23:13.850 more sustainable organization you see\n00:23:15.350 that happening people are putting in\n00:23:17.299 different kind of light bulbs and\n00:23:18.679 they're putting in you know electronic\n00:23:22.880 devices to control when the air\n00:23:25.190 conditioning comes on and when it goes\n00:23:27.260 off and motion detectors and all of\n00:23:29.600 those kinds of things once the initial\n00:23:35.980 sustainability's are developed they can\n00:23:38.809 be applied they will be and then they\n00:23:41.330 can be refined so the indicators\n00:23:44.630 themselves are symbolic in its early\n00:23:47.990 stages in convincing people in the\n00:23:49.880 organization oh we're now being managed\n00:23:52.370 against this we're going to be asked how\n00:23:55.399 much water we use how much electricity\n00:23:57.529 we use we might even be asked how much\n00:24:01.159 garbage we're producing and how much of\n00:24:03.409 a recycling maybe we'll weigh it you\n00:24:06.289 start with the simple stuff the stuff\n00:24:08.299 that we know

are relatively easy to do\n00:24:12.110 and then as time goes on you'll see the\n00:24:14.659 measurements become more sophisticated a\n00:24:17.769 benchmarking and learning new\n00:24:20.510 organization routines from other\n00:24:22.100 organizations is essential in new\n00:24:24.730 management areas like sustainability\n00:24:27.320 and so what you're gonna see is a lot of\n00:24:29.270 people borrowing from each other people\n00:24:31.220 going to other organizations and trying\n00:24:32.780 to figure out well how do they do it at\n00:24:33.890 Starbucks how they do it at Walmart\n00:24:35.860 let's see let's try to imitate that\n00:24:38.180 let's see if that'll work here\n00:24:39.940 eventually you're going to start seeing\n00:24:42.290 the indicators get more common and in\n00:24:45.950 more general use you know we saw this\n00:24:48.770 actually in the financial world with the\n00:24:51.260 development of generally accepted\n00:24:52.580 accounting practices though those\n00:24:55.160 practices were not the first set of\n00:24:57.440 accounting practices those are the ones\n00:24:59.390 that developed over time as more and\n00:25:01.520 more organizations started to use them\n00:25:04.070 you're gonna see the same thing I\n00:25:05.870 believe happened here so what does this\n00:25:10.370 lead us to well first you know as I\n00:25:13.640 talked about during our class on\n00:25:15.170 performance management which is part of\n00:25:16.940 the first few weeks I went through all\n00:25:18.770 of the tools of management in order to\n00:25:20.960 manage something you have to measure it\n00:25:22.430 without measurement you can't tell if\n00:25:25.010 what management's doing is making it\n00:25:26.990 better or making it worse some\n00:25:29.570 measurements essential very often though\n00:25:32.150 when you start measuring something for\n00:25:33.800 the first time you make mistakes and so\n00:25:37.100 what's really important is that we\n00:25:38.930 program an organizational learning that\n00:25:41.810 we evaluate this that we keep trying to\n00:25:44.210 relate it to goals the other thing that\n00:25:46.280 happens in organizations is things get\n00:25:48.080 ossified people get in they say this is\n00:25:50.600 how we measure sedating ability around\n00:25:52.040 here I don't care how they do it at\n00:25:53.810 Walmart we're gonna do it this way\n00:25:55.370 that's a bad thing you want this change\n00:25:58.370 to take place early on we have a lot to\n00:26:03.080 learn and need to be open to listening\n00:26:05.510 observing and changing our\n00:26:07.580 sustainability strategies and the way we\n00:26:09.860 measure this success of sustainability\n00:26:12.770 itself so and I've made this point a\n00:26:16.370 number of times today that this is new\n00:26:19.420 we don't really know what we're doing\n00:26:21.620 yet we know that it needs to be done and\n00:26:24.800 I've actually seen I mean in in doing\n00:26:27.950 the book sustainability management and\n00:26:29.930 in preparing for for this session and\n00:26:32.330 for others there's been a fair amount of\n00:26:34.340 development than the last ten years\n00:26:36.220 enormous amount of progress have been\n00:26:38.330 made a lot of ideas that that were there\n00:26:40.970 at the very beginning of this literature\n00:26:42.409 have already been set aside by I think\n00:26:45.500 improvements and you're going to see a\n00:26:47.539 lot more\n", "title": "tactiq-free-transcript-lmdDnqBh-Zg.txt", "tether_id": null}, "status": "finished_successfully", "end_turn": null, "weight": 1.0, "metadata": {"command": "context_stuff", "is_visually_hidden_from_conversation": true, "message_type": null, "model_slug": "gpt-4", "default_model_slug": "gpt-4", "parent_id": "1084b2f8-0950-4383-a984-d6b2f568cc77", "request_id": "88514dedafbb5249-MXP", "timestamp_":

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sustainability metrics in a complex global economy requires considering both the
direct and indirect effects of production. As Bringezu and Bleischwitz suggest in
'Sustainable Resource Management,' the analysis of global resource use
necessitates a holistic approach that encompasses various economic levels and
sectors\u0010source\u0011. Metrics should evolve to better encapsulate the full
life cycle of products, from raw material extraction to end-of-life disposal or
recycling. This approach can be enriched by integrating newer technological
capabilities that provide transparency and traceability in supply chains, as discussed
by Markus Mutz in his presentation on how technology can help the planet by improving
supply chain transparency\u0010source\u0011.\n\n### Potential Metrics to
Include\n\nThe expansion of sustainability metrics can encompass various dimensions of
environmental, social, and economic impact. Based on the insights from Steve Cohen on
sustainability metrics, we could include measures like material intensity, energy
intensity, water consumption, toxic emissions, and general pollutant
emissions\u0010source\u0011. Additionally, incorporating metrics that assess
the human health impacts of production processes, as well as social metrics such as
living wages and working conditions, would provide a more comprehensive view of
sustainability. These metrics address the broader impacts of organizational activities
on both ecological and human well-being.\n\n### Integration and Technological
Solutions\n\nIntegrating these metrics into mainstream sustainability assessments
requires innovative methods and technologies. The use of blockchain, IoT devices, and
other digital tools can help verify, trace, and share information about product
origins and lifecycle impacts, making sustainability data more accessible and
actionable for consumers and companies alike, as illustrated by the OpenSC initiative
described by Mutz\u0010source\u0011. Furthermore, adopting a regenerative
approach as described by Mang and Haggard in 'Regenerative Development and
Design,' which focuses on evolving sustainability by understanding and enhancing
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the unique value of local ecosystems and communities, could foster deeper integration of these metrics into business and development strategies\u0301108\u0302020source\u030111.\n\nIn summary, the evolution of sustainability metrics involves broadening the scope to include more diverse and comprehensive indicators that reflect the interconnectedness of environmental, social, and economic factors. Technological advancements offer promising tools for achieving greater transparency and accountability in sustainability practices. Integrating these metrics into the core of organizational and developmental processes will likely be key to advancing global sustainability efforts.”}], “status”:

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215\n\nFurther reading\n\nThe file is too long and its
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instantaneously.\n00:00:20.042 My phone can tell me everything about my
finances,\n00:00:23.333 where precisely I am on a map\n00:00:25.583 and the best way
to my next destination,\n00:00:27.750 all with a click of a button.\n00:00:30.333 But
this availability of information and transparency\n00:00:33.458 almost completely
disappears when it comes to consumer products.\n00:00:38.208 If you go to the seafood
counter at your local supermarket,\n00:00:41.542 you can probably choose between several
different types of fish.\n00:00:45.375 But chances are, they won't be able to tell
you\n00:00:47.958 who caught the fish, where precisely it was caught,\n00:00:51.125
whether it is sustainable to catch it there\n00:00:53.417 and how it got
transported.\n00:00:56.083 And that holds true for almost everything we
buy.\n00:00:59.000 Every can of soup,\n00:01:00.792 every piece of meat, every T-
shirt.\n00:01:03.333 We as humans, right now,\n00:01:05.625 are destroying the only
thing we really need to survive:\n00:01:09.167 our planet.\n00:01:10.458 And most of
the horrible problems that we're facing today,\n00:01:13.500 like climate
change\n00:01:14.792 and modern slavery in supply chains,\n00:01:17.500 come down to
decisions.\n00:01:19.250 Human decisions to produce something one way and not
another.\n00:01:24.958 And that's how we, as consumers,\n00:01:27.208 end up
making decisions that harm the planet\n00:01:30.208 or our fellow humans.\n00:01:31.875
By choosing the wrong products.\n00:01:35.167 But I refuse to believe that anybody here
in this room,\n00:01:38.542 or frankly, anybody on this planet,\n00:01:40.625 really
wants to buy a product\n00:01:42.542 that harms the planet or our fellow
humans\n00:01:46.000 if given the choice.\n00:01:48.583 But you see, choice is a
loaded word.\n00:01:50.792 Choice means there's another option.\n00:01:53.167
Choice means you can afford that option.\n00:01:56.208 But choice also
means\n00:01:57.708 you have enough information to make an informed
decision.\n00:02:01.792 And that information nowadays simply just doesn't
exist.\n00:02:06.875 Or at least it's really, really hard to access.\n00:02:11.625
But I think this is about to change.\n00:02:13.667 Because we can use technology to
solve this information problem.\n00:02:17.750 And many of the specific
technologies that we need to do that\n00:02:20.833 have become better and cheaper over
the recent years,\n00:02:24.542 and are now ready to be used at scale.\n00:02:27.458
So, over the past two years,\n00:02:28.875 my team and I have been
working\n00:02:30.583 with one of the world's largest conservation organizations,
WWF,\n00:02:34.833 and we've founded a company called OpenSC,\n00:02:38.500 where
SC stands for supply chain.\n00:02:41.708 And we believe that by using
technology\n00:02:44.125 we can help to create\n00:02:47.500 transparency and
traceability in supply chains,\n00:02:50.833 and through that, help to completely

revolutionize the way that we buy and also produce products as humans. Now, some of this is going to sound a little bit like science fiction, but it's already happening. Let me explain. So, in order to solve this information problem, we need to do three things: verify, trace and share. Verify specific sustainability and ethical production claims in a data-based and automated way. Then trace those individual physical products throughout their supply chains, and finally, share that information with consumers in a way that truly gives them a choice and lets them make consumption decisions that are more aligned with their values. I'm going to use a real product and a supply chain where we've made all of this a reality already: a Patagonian toothfish, or Chilean sea bass, as it's called in the US. Number one, verify. Verify how something is produced. But not just by saying, "Trust me, this is good, trust me, we've done all the right things," but by producing evidence for that individual physical product, and the way it was produced. By producing evidence for a specific sustainability or ethical production claim. So for example, in the case of the fish, has this fish been caught in an area where there's enough of them, so that it's sustainable to catch it there and not in a marine protected area? So what we're doing here is we're taking almost real-time GPS data from the ship -- the ship that's fishing -- and that tells us where the ship is and where it's going at what speed. And we can then combine that with other types of data, like, for example, how deep the sea floor is. And combining all of this information, our machine-learning algorithms can then verify, in an automated way, whether the ship is only fishing where it's supposed to, or not. And as sensors become cheaper, we can put them in more places. And that means we can capture more data, and combining that with advancements in data science, it means that we can now verify specific sustainability and ethical production claims in an automated, real-time and ongoing manner. And that really lays the basis for this information revolution. So, number two, trace. Trace those individual physical products, so that we can truly say that the claim that we've verified about a certain product actually belongs to that individual product that we as consumers have right in front of us. Because without that level of traceability, all that we've really verified in the first place is that somebody, somewhere, at some point caught a fish in a sustainable way, or didn't harm the employee when asking them to produce a T-shirt, or didn't use pesticides when growing a vegetable that didn't actually need it. Only if I give a product an identity from the start and then trace it throughout the whole supply chain, can this claim and the value that's been created by producing it in the right way truly stay with it. Now, I've talked about cheaper sensors. There are

many other technological developments that make all of this much more possible today than ever before. For example, the falling costs of tags. You give a product a name, a serial number, an identity, the tag is its passport. What you can see here is a toothfish being caught. This is what's called a longline fishery, so the fish are coming upon the boat on individual hooks. And as soon as the fish is on board, it is killed, and then after that, we insert a small tag into the fish's flesh. And in that tag, there is an RFID chip with a unique serial number, and that tag follows the fish throughout the whole supply chain and makes it really easy to sense its presence at any port, on any truck or in any processing plant. But consumers can't really read RFID tags. And so, when it comes to filleting and packaging the fish, we read the RFID tag and then remove it. And then we add a unique QR code to the packaging of the fish. And that QR code then points back to the same information that we've verified about the fish in the first place. And so, depending on the type of product that we're working with, we may use QR codes, bar codes, RFID tags or other tag technologies. But there are also technologies that are at the brink of large-scale breakthrough that make tags themselves obsolete. Like, for example, analyzing a product for trace elements that can then tell you quite accurately where it is actually from. Then there's blockchain. A decentralized technology can act as a catalyst for this revolution. Because it can help mitigate some of the trust issues that are inherent to giving people information and then asking them to change their consumption behavior because of that information. And so, we use blockchain technology where it adds value to what we're doing. But importantly, we don't let the limitations that this technology still has today, like, for example, with regards to scaling, we don't let that stand in our way. And that brings us to the third point. Share. How to share the information that we've verified and tracked about where a product is from, how it was produced and how it got to where it is? How to share this information is really different from product to product. And different from where you buy it. You behave differently in those situations. You are stressed and time-poor in the supermarket. Or with short attention span over dinner, because your date is so cute. Or you are critical and inquisitive when researching for a larger purchase online. And so for our fish, we've developed a digital experience that works when buying the fish in a freezer in a fish specialty store and that gives you all of the information about the fish and its journey. But we also worked with a restaurant and developed a different digital experience that only summarizes the key facts about the fish and its journey, and works better in a dinner setting and, hopefully, there doesn't annoy your date too much. Now, that brings us full circle. We've verified

that the fish was caught in an area where it's sustainable to do so. We've then traced it throughout the entire supply chain to maintain its identity and all the information that's attached to it. And then, we've shared that information with consumers in a way that gives them a choice and lets them make consumption decisions that are more in line with their values. Now, for this fish example, this is already rolled out at scale. This season, the entire fleet of the world's largest toothfish fishing company, Austral Fisheries, is tagging every single fish that they catch and that ends up in their premium branded "Glacier 51" product. And you can already buy this fish. And with it, you can have all of the information I talked about today, and much more, attached to each individual fish or portion of the fish that you may buy. But this is not a fish or seafood thing. We're working on many, many different commodities and products and their supply chains across the globe. From dairy to fruit and vegetables, to nonfood products made out of wood. As a consumer, all of this may sound like a huge burden, because you don't have time to look at all of this information every time you buy something. And I don't expect you to, because you'll have help with that. In the future, we'll leave the decision of which specific product to buy increasingly up to machines. An algorithm will know enough about you to make those decisions for you, so you don't have to. And maybe it will even do a better job at it. In a recent study, 85 percent of those buying a product through a virtual assistant said that they, on occasion, actually went with the top product recommendation of that virtual assistant, rather than the specific product or brand that they set out to buy in the first place. You just say you need toilet paper, it's then an algorithm that decides which brand, price point or whether you go with recycled or not. Well, nowadays this is usually based on what you bought in the past, or whoever pays the most to the company behind the virtual assistant. But why shouldn't that be also based on your values? Knowing that you want to buy planet-friendly and knowing whether and how much you're willing and able to pay for that. Now, that will make it easy and seamless, but still based on granular effects and data to choose the right products. Not by necessarily doing it yourself, but by asking an algorithm that knows how much you care about this planet. Not by necessarily doing it yourself, but by asking an algorithm that is never time-poor or distracted, or with short attention span because of the cute date, and that knows how much you care about this planet and the people living on it, by asking that algorithm to look at all of that information for you and to decide for you. If we have reliable and trustworthy information like that and the right systems that make use of it, consumers will support those who are doing the right thing by producing products in a sustainable and ethical

way.\n00:12:58.708 They will support them every time\n00:13:00.750 by choosing their goods over others.\n00:13:04.042 And that means that good producers and processors and retailers\n00:13:09.000 will get rewarded.\n00:13:10.292 And bad actors will be forced to adjust their practices\n00:13:14.667 or get out of business.\n00:13:17.333 And we need that.\n00:13:19.000 If we want to continue to live together on this beautiful planet,\n00:13:22.792 we really need it.\n00:13:24.667 Thank you.\n00:13:25.958 (Applause)\n", "extra": {"cited_message_idx": 6, "search_result_idx": null, "evidence_text": "source"}, "url": "file-wRoN9IGwwGzaK8AP6BufoHBk"}}, {"start_ix": 1177, "end_ix": 1187, "citation_format_type": "tether_og", "metadata": {"type": "file", "name": "tactiq-free-transcript-lmdDnqBh-Zg.txt", "id": "file-tUW5FEVxOWlkIvZeXInaloOI", "source": "my_files", "text": "# tactiq.io free youtube transcript\n# Steve Cohen, Sustainability Metrics\n#\nhttps://www.youtube.com/watch/lmdDnqBh-Zg\n\n00:00:00.740 we'l talk with you about how we define\n00:00:03.210 these metrics what aspects of\n00:00:07.259 sustainability should an organization\n00:00:09.120 measure which I think is one of the\n00:00:10.500 critical issues that we have to think\n00:00:12.509 about and then the relationship of these\n00:00:15.420 sustainability metrics to the\n00:00:17.580 organization's general performance\n00:00:19.500 measurement and management system the\n00:00:21.600 challenge is going to be to integrate so\n00:00:24.660 we have to develop these new ways of\n00:00:27.090 looking at the world and of\n00:00:28.740 organizational performance but then\n00:00:30.929 after a while it's going to be very\n00:00:32.430 important that they not be seen as\n00:00:34.559 something separate oh that's just the\n00:00:36.510 way we manage around here nothing\n00:00:38.879 different than our routine and really\n00:00:41.250 part of other types of metrics what are\n00:00:45.000 the methodological issues raised by\n00:00:46.770 measuring sustainability and I hinted at\n00:00:49.710 that before the complexity of this issue\n00:00:52.670 why it's important to do this and and\n00:00:55.410 what what does this all lead us to\n00:00:57.809 conclude with so how do we define\n00:01:00.780 sustainability metrics so since this is\n00:01:03.840 a course the sustainability management\n00:01:05.610 I'm going to have to give you a\n00:01:06.600 definition so they are an organization\n00:01:09.540 or jurisdictions indicators of resource\n00:01:13.799 utilization waste reduction and\n00:01:16.970 pollution discharges into the\n00:01:18.990 environment some being very focused here\n00:01:21.420 there's a lot of other things people\n00:01:22.560 might measure in fact in our case study\n00:01:25.259 they talked about a bunch of other\n00:01:26.850 things I'm going to try to focus on\n00:01:29.280 these three things now according to one\n00:01:32.610 set of authors that I'm quoting here it\n00:01:35.490 includes material intensity energy\n00:01:38.820 intensity water consumption toxic\n00:01:42.750 emissions and pollutants they're\n00:01:44.430 actually separating pollutants into\n00:01:46.500 toxics and other pollutants because put\n00:01:50.549 and toxic being those pollutants that\n00:01:53.310 are most intense that can poison life\n00:01:56.540 relatively quickly where some pollutants\n00:01:59.100 can simply change things not always for\n00:02:01.680 the better\n00:02:02.130 some forms of pollutants are really\n00:02:04.320 having too much of a good thing too much\n00:02:06.990 nutrient too much nutrition in a lake\n00:02:10.400 creates a set\n00:02:13.270 of environmental impacts that you don't\n00:02:15.040 want but that's different than taking\n00:02:18.310 plutonium and dropping it off in the\n00:02:20.890 middle of the lake one of them is

very\n00:02:23.470 toxic immediately and the other is\n00:02:25.750 simply a pollutant there are no agreed\n00:02:28.600 set of sustainability metrics\n00:02:31.270 everyone has their ideas about what's\n00:02:33.610 important and we should all expect that\n00:02:35.860 this is going to evolve for quite a\n00:02:38.230 while so let me focus on the aspects\n00:02:42.940 that I think an organization should\n00:02:44.500 measure and I should really say that\n00:02:46.450 these are starting points I'm really\n00:02:49.270 working and I do this here and I do this\n00:02:52.330 a little bit in my writing I'm trying to\n00:02:54.340 create some boundaries knowing the\n00:02:56.500 people are going to take potshots at it\n00:02:58.270 okay and that's okay that's really how\n00:03:00.640 these things start that's how they\n00:03:02.530 evolve so I don't want you to think oh\n00:03:04.900 he said it was this therefore that's\n00:03:06.550 true and in in your final exam I'm not\n00:03:10.930 going to have a set of true or false\n00:03:13.170 questions or multiple-choice questions\n00:03:16.210 related to this in fact there won't be\n00:03:17.950 any true or false questions or multiple\n00:03:20.530 choice questions anywhere in this course\n00:03:22.150 in part because we simply don't have\n00:03:24.250 that level of information here so\n00:03:27.160 material intensity is the first pounds\n00:03:29.830 of material wasted per unit of output in\n00:03:33.370 other words what is it that we're\n00:03:35.800 throwing away that doesn't go into the\n00:03:38.320 product okay that's one element of\n00:03:41.370 material intensity but also is their\n00:03:45.670 design for reuse does the product have\n00:03:47.920 the potential to be returned for\n00:03:50.220 remanufacturing or is it used up after\n00:03:53.500 it's used is there some element of it\n00:03:56.140 when you think about material intensity\n00:03:58.000 one of the questions is is this is it\n00:04:00.190 possible to recycle this are the\n00:04:03.640 materials being used for this product\n00:04:06.480 renewable or mined from one-time\n00:04:09.160 geologic resources so it's not so part\n00:04:12.430 of its can it be used again but part of\n00:04:14.800 it is is this something that we don't\n00:04:16.930 have to worry about whether it's\n00:04:18.070 recycled because we can make more of it\n00:04:20.019 because it's essentially solar and\n00:04:22.919 organic in its in its orientation\n00:04:26.410 so that's material intensity the second\n00:04:29.600 area is energy intensity and this is\n00:04:32.120 expressed as BTUs per unit it's a\n00:04:35.060 measure of the net fuel energy consumed\n00:04:37.099 to provide the heat and power\n00:04:38.990 requirements of the production process\n00:04:41.020 okay so that's energy intensity also\n00:04:44.150 again renewable versus fossil fuels so\n00:04:47.300 it's not just how much energy what's the\n00:04:49.520 source of the energy and also the\n00:04:52.960 efficiency of the use of the energy in\n00:04:55.910 other words how much of the energy in\n00:04:59.300 the production process could have been\n00:05:02.620 recovered so we'll have a production\n00:05:05.120 process that uses say a thousand dollars\n00:05:07.520 worth of electricity but it turns out\n00:05:09.470 600 of that was wasted there was waste\n00:05:12.470 heat that went up the stack and we could\n00:05:13.940 have used it we could have used that\n00:05:16.310 energy for some other production process\n00:05:18.530 if we had recovered it so these are all\n00:05:21.050 factors the energy intensity that is\n00:05:23.720 related to sustainability\n00:05:25.460 third factors water consumption\n00:05:27.909 expressed as gallons of fresh water\n00:05:29.960 excluding rain water consumed per unit\n00:05:32.300 of output how much water's is the stuff\n00:05:34.130 use when

we're making it okay other factors though again with water the reuse of the water what's the discharge when you release that water into the environment can it be reused or is it hopeless is it now water that can't be used for drinking or for growing plants also can we improve the efficiency through improved transmission reduced evaporation in the case of plants more efficient plants in their root structure so water consumption is an issue that we have to measure toxic emissions expressed as pounds of toxic materials emitted by the process per unit of output okay now these are all quotations from the work that I've cited here that I hope you've taken a look at toxic chemicals are defined by a number of pieces of US legislation we've gone through a number of regulatory processes to decide what's toxic and what isn't but other factors that need to be considered when you're thinking about toxicity is the degree of toxicity the treatment technology do we have a way of dealing with it and also even most importantly in my view is pathway of exposure is this a toxic that very easily gets into people's homes and then into their biological systems is there you know are these toxics that once they're released have less of a capacity to impair people's homes and lives okay so those are all factors that you have to think about and then there's pollutant emissions which can be expressed as pounds of pollutants emitted by the process per unit of output for every car there's X amount of pollution for every you know for every watch there's X amount of pollution so you want to measure that how much how many what kind of emissions are there now that's for greenhouse gas emissions but for other air pollutants also sulfur dioxide other kinds of some of our more traditional pollutants let's call it then we want to think not just of the pollution emissions but what's the health impact and are the health impacts things that we can do something about or are they things that we can't do anything about if the impact is asthma is that something that's treatable versus the impact being cancer which whilst treatable perhaps is less treatable so we actually have to look at those things though this may sound a little brutal but those are in fact things you have to judge how bad is this stuff is a question you have to ask and has to be answered no other factors are you know the issue of sustainability can differ by geography okay you can have a landfill in a desert and it's going to have less of an environmental impact on the surroundings because it's not going to do much to ground water you put a landfill you know you you know or you know if you try to hydro frack gas by the watershed that's a little bit different than if it's in a place that doesn't have a lot of groundwater not to say you should do in either place but

that is something a sustainability\n00:08:56.560 metric would help you to measure and to\n00:08:59.860 weigh along with other kinds of issues\n00:09:01.899 and then you have to wait all this stuff\n00:09:04.770 water energy toxic pollutants what's\n00:09:08.980 more important as we develop the\n00:09:10.660 measures for our organization in this\n00:09:13.390 place all of which is going to vary by\n00:09:15.910 what we do where we are and what's the\n00:09:19.600 human settlement patterns are around us\n00:09:21.750 okay now again I said human settlement\n00:09:24.670 patterns there people would say well\n00:09:25.630 that's unethical we should worry just as\n00:09:27.399 much about the B's and the answers about\n00:09:29.350 people well I know that there people\n00:09:31.839 believe that and I I think that that is\n00:09:34.089 an ethical choice that they make I don't\n00:09:37.810 make that choice I'm more concerned\n00:09:40.510 about people so those are the problems\n00:09:46.029 in measurement I mean just think about\n00:09:48.070 what I've just laid out you know all of\n00:09:50.500 these different issues and all of these\n00:09:53.140 complexities and how do you measure that\n00:09:54.850 in an organization now\n00:09:57.070 having laid out how complex is let me\n00:09:59.230 just say that organizations do this all\n00:10:00.940 the time you have to measure what an\n00:10:03.640 organization does you have to measure\n00:10:05.709 its performance this is an aspect of its\n00:10:08.380 performance that's going to become more\n00:10:11.020 and more important in organizational\n00:10:13.120 management in part because of the\n00:10:15.100 regulatory environment because\n00:10:16.300 government's going to make people do it\n00:10:17.800 in part because resources themselves are\n00:10:21.399 becoming contaminated and scarce and we\n00:10:23.950 have no choice because otherwise we will\n00:10:26.829 degrade the resources of the providers\n00:10:28.990 with wealth government it may lead us to\n00:10:31.060 do that but corporations themselves may\n00:10:32.890 see the importance of doing it and some\n00:10:35.050 of them already have and then this is\n00:10:37.240 cultural change which i think is taking\n00:10:38.800 place which is to say that you know how\n00:10:41.829 do we define criminal activity in a\n00:10:45.250 society it's a cultural definition okay\n00:10:48.220 you know in one society you know you pay\n00:10:51.550 the trucker you know \$1,000 a month to\n00:10:54.670 make sure your truck doesn't get let's\n00:10:57.520 say hijacked okay in some societies\n00:11:00.370 that's the cost of doing business and\n00:11:02.560 other societies that's corruption okay\n00:11:05.650 those\n00:11:06.470 things are socially defined well what\n00:11:09.050 we're seeing is that increasingly and we\n00:11:11.570 saw a little bit this in the Starbucks\n00:11:13.490 case before that the social definition\n00:11:17.900 of a well-run corporation is becoming a\n00:11:20.900 sustainable corporation you and your\n00:11:24.110 friends don't want to work for a company\n00:11:26.660 that is doing evil\n00:11:30.080 what's the Google motto don't don't be\n00:11:35.900 evil don't do evil don't be evil okay\n00:11:39.380 now they're serious about that they\n00:11:41.780 actually think about is what we're doing\n00:11:44.060 somehow adding to pain and misery in the\n00:11:47.360 world okay that's become important to\n00:11:50.330 people and that's going to be helpful as\n00:11:52.610 we develop sustainability measures\n00:11:54.440 what's the relationship of\n00:11:56.710 sustainability metrics to organizational\n00:11:59.480 performance and management systems now\n00:12:02.930 as the organization learns these new\n00:12:07.160 indicators that need to be developed as\n00:12:09.170 we figure out what we want to focus

on\n00:12:10.880 as we come up with these metrics then\n00:12:14.180 they have to be developed collected and\n00:12:17.450 analyzed and reported at first\n00:12:19.910 separately from routine indicators but\n00:12:23.660 then they eventually have to be\n00:12:25.340 integrated they have to be part of\n00:12:27.350 routine management a key indicator of\n00:12:30.740 success in fact it's going to be the\n00:12:33.470 ultimate invisibility of distinct\n00:12:36.290 sustainability metrics there needs to\n00:12:38.900 become a time when we actually look at\n00:12:41.540 sustainability metrics just like we look\n00:12:44.450 at market share return on equity profit\n00:12:47.570 and other more non-financial performance\n00:12:50.690 indicators like you know how many things\n00:12:53.300 that we produced what's been the cost of\n00:12:56.510 breakage all sorts of indicators that\n00:13:00.290 organizations put in and what's what are\n00:13:02.990 what are our customers saying how many\n00:13:04.820 complaints do we have what's the level\n00:13:06.350 of satisfaction how much repeat business\n00:13:08.510 you think about all the things an\n00:13:10.520 organization measures itself against now\n00:13:13.370 in the public sector these can be things\n00:13:15.620 like test scores in a school system they\n00:13:19.220 can be things like\n00:13:20.360 in rates they can be indicators widely\n00:13:25.190 ranging sets of indicators number of\n00:13:27.380 homicides number of misdemeanors the\n00:13:30.339 number of the amount of time it takes to\n00:13:33.110 respond to a fire all of these kinds of\n00:13:36.800 indicators are how organizations are\n00:13:39.170 managed we managed and we define success\n00:13:41.209 and manage organizations around these\n00:13:44.450 indicators okay\n00:13:46.190 so when we created the masters of the\n00:13:49.070 sustainability management one of our\n00:13:50.690 indicators of success is how many\n00:13:52.700 applications did we get how many people\n00:13:55.160 did we admit we want to make sure we\n00:13:57.200 only admit about no more than half the\n00:13:59.420 people that that apply and then how many\n00:14:01.640 of those people come\n00:14:02.720 well we want at least half of those\n00:14:04.010 people to show up you know those are all\n00:14:06.079 indicators of success now in the program\n00:14:08.899 once it begins we don't want to see\n00:14:11.029 people dropping out because they hate it\n00:14:13.190 okay so our retention and attrition\n00:14:15.920 rates are indicators of success\n00:14:18.279 organizations run against metrics all\n00:14:21.290 the time and so what this is saying is\n00:14:24.920 we need to add sustainability indicators\n00:14:28.730 to that mix it's very straightforward\n00:14:31.579 what we're trying to do but it's very\n00:14:34.220 hard so it leads me to the fourth issue\n00:14:36.560 for today what are the methodological\n00:14:38.329 issues raised by measuring\n00:14:40.579 sustainability now part of the problem\n00:14:43.250 is when you when you can when you\n00:14:44.930 develop a measure you want the measure\n00:14:46.940 to be reliable and valid reliable means\n00:14:51.380 that every time you do the measure\n00:14:53.240 you're measuring the same thing you\n00:14:56.029 don't change it you don't change the\n00:14:58.040 goalposts you don't change the scoring\n00:15:00.829 system in the middle of of the\n00:15:02.839 measurement you know you don't decide oh\n00:15:04.820 this isn't going too well let's change\n00:15:07.220 the criteria okay that's that's a\n00:15:09.800 measure that's that's not reliable and\n00:15:12.470 then they have to be valid you have to\n00:15:13.910 measure what you actually think you're\n00:15:15.140 measuring okay and when you so that's\n00:15:19.130 the creation of the measure itself but\n00:15:21.829 then once you decide what you want

to\n00:15:23.720 measure then you have to collect\n00:15:25.220 information you have to collect\n00:15:27.589 information in the same way you know\n00:15:29.959 there was a story I think it was a\n00:15:33.260 New York Times has a as a blog I think\n00:15:35.480 its 5:28 or something like that or 538\n00:15:37.940 the number of people in the Congress\n00:15:40.840 does their pull it's their political\n00:15:43.600 polling oriented website and they were\n00:15:46.850 talking about I think was Rasmussen the\n00:15:49.040 polling company and they discovered that\n00:15:51.200 methodological II they had the worst\n00:15:54.440 polls during this election they were off\n00:15:56.870 more than anybody else and they looked\n00:15:59.480 at how they were collecting their\n00:16:00.950 information one of the things you do\n00:16:02.720 when you do polling is you have to\n00:16:04.640 randomize at the place of you know went\n00:16:07.400 like when you make the call you have to\n00:16:09.710 say you have to decide you want to talk\n00:16:11.420 to the oldest female in the house and so\n00:16:14.600 if the oldest male in the house is there\n00:16:17.150 you say no no I need to talk to you\n00:16:18.860 oldest female she's not here you hang up\n00:16:20.660 you got to go to another person that's\n00:16:22.550 how you randomize at the household\n00:16:24.500 apparently they don't do it they do a\n00:16:26.840 few other things in their methodology so\n00:16:29.420 how you collect information has a lot to\n00:16:31.970 do with the quality of the information\n00:16:33.710 that you collect now when you're new\n00:16:36.320 it's something when you're starting\n00:16:38.120 something for the first time you don't\n00:16:39.650 have a lot of experience collecting it\n00:16:41.150 you make mistakes I mean you make\n00:16:43.700 mistakes because you don't quite know\n00:16:45.140 how to ask the question you don't quite\n00:16:47.900 know how to calibrate your measurement\n00:16:50.630 tools and so as you're doing it you have\n00:16:53.600 to learn so after a while you figure it\n00:16:57.050 out you get better at it you know you\n00:16:58.940 get better at taking the measurement and\n00:17:00.800 so eventually the your collection system\n00:17:04.160 or works better so you need to\n00:17:07.459 understand that the second method issue\n00:17:09.619 here is the experience and skill in\n00:17:12.380 collecting information itself and then\n00:17:17.119 sometimes it's hard to know what to\n00:17:18.410 measure you know we just went through\n00:17:19.490 all those other measures right the whole\n00:17:21.589 field of sustainability water energy\n00:17:23.650 material so what's more important in our\n00:17:26.089 area and then how do I wait them are\n00:17:29.030 they all equal is some more is some more\n00:17:31.670 important to my product or my\n00:17:32.990 organization than others you know in a\n00:17:35.180 service business does it really is there\n00:17:38.090 is material intensity is important for\n00:17:40.130 example is energy intensity probably not\n00:17:42.160 but how much more important to take a\n00:17:44.390 company like Starbucks a very\n00:17:45.980 interesting point before\n00:17:47.120 is this a service business that creates\n00:17:49.610 ambience and the coffee's incidental or\n00:17:51.440 is it a coffee company and the service\n00:17:53.660 is incidental judging by the service I\n00:17:56.090 beginning I think the service may be\n00:17:57.290 incidental but no the question here is\n00:17:59.840 you have to make that decision as you\n00:18:02.870 create your measurement system and you\n00:18:05.240 have to and what you decide to measure\n00:18:07.640 then the and the definition of success\n00:18:10.700 has a direct impact on the behavior of\n00:18:14.330 the organization that's why this is so\n00:18:16.250 important you know in the school system\n00:18:18.410 when we

start focusing on taking tests\n00:18:20.690 teachers start teaching to the test they\n00:18:23.840 don't care whether the kids are learning\n00:18:25.730 they care whether they're performing\n00:18:27.800 well on the test now if the two things\n00:18:29.030 are the same great but if they're not\n00:18:31.610 you've got a problem so measurement is\n00:18:34.550 not neutral and it's certainly not\n00:18:36.559 neutral within the organization okay so\n00:18:40.179 you need to understand that as you think\n00:18:42.890 about sustainability indicators and this\n00:18:45.260 issue of cherry-picking indicators you\n00:18:46.910 look to see what are we doing good at\n00:18:48.710 let's emphasize that makes us look more\n00:18:51.110 sustainable and particularly with the\n00:18:52.880 emphasis on green washing you have to\n00:18:54.380 watch for that weighting indicators in\n00:18:58.070 an overall scale can it can introduce\n00:18:59.960 bias and as we want to come up with an\n00:19:02.120 overall sustainability measure like the\n00:19:05.179 gross national product like market share\n00:19:08.240 like the bottom-line okay what's it\n00:19:10.790 going to be how do we put that number\n00:19:12.620 together how do we weight it so that's\n00:19:17.090 an issue that's still out there and I\n00:19:19.610 think will vary by organization by\n00:19:22.130 geography by product by service by what\n00:19:26.510 the organization's distinctive\n00:19:27.770 competences what is it trying to trying\n00:19:29.929 to do in some cases qualitative factors\n00:19:32.840 may be just as important as those things\n00:19:35.270 that you can measure some of the\n00:19:36.920 sustainability issues that are important\n00:19:38.570 to you aren't subject to measurement yes\n00:19:40.460 you know the fair trade issues you were\n00:19:42.980 describing before which aren't part of\n00:19:44.420 my measurement of sustainability but\n00:19:46.640 might be part of yours how do you\n00:19:47.990 measure that how do you measure\n00:19:49.700 satisfaction how do you measure then if\n00:19:52.790 you're comparing material intensity to\n00:19:55.220 water intensity to energy intensity\n00:19:56.780 which is more important but management\n00:19:59.060 has to make these decisions and\n00:20:00.559 one of the critical issues for a manager\n00:20:03.139 is decide what's the definition of\n00:20:04.850 success and how will you know if we got\n00:20:07.100 there so in sustainability is the same\n00:20:09.259 thing what's the definition of a\n00:20:10.970 sustainability success for organization\n00:20:13.100 and what are the indicators that I is\n00:20:15.320 the manager I'm going to use to measure\n00:20:18.559 against as we seek to perform it so\n00:20:21.259 despite all of these problems and I\n00:20:23.120 don't think I've been too shy about\n00:20:25.159 introducing them to you\n00:20:27.379 sustainability metrics are essential we\n00:20:30.830 really have to figure out how to do this\n00:20:32.990 we need to develop a way to\n00:20:34.730 operationally measure success in this\n00:20:37.369 area measurements force precision in\n00:20:41.809 defining goals and then force precision\n00:20:44.779 in the actions to achieve those goals\n00:20:47.240 now sometimes that means you make\n00:20:50.210 mistakes some of the first efforts at\n00:20:53.149 measuring performance in organizations\n00:20:55.759 were led organizations astray the\n00:21:00.169 classic was actually in the military\n00:21:03.470 during the war in Vietnam one of the\n00:21:05.990 first quantitative performance\n00:21:07.340 indicators used by Bob McNamara was\n00:21:09.320 Secretary of Defense was body counts\n00:21:11.450 they measured how many people were dying\n00:21:13.720 they forgot something so they saw how\n00:21:16.820 many Americans were dying how many\n00:21:18.200 beaten to me

soldiers were dying what they didn't understand is that our tolerance for loss was a quite a bit lower than the Vietnamese because they were defending their country and so if they lost a million or two million soldiers in the defense of their homeland they were going to put up with that if we lost 50,000 soldiers we weren't going to put up with it so the real measure of success probably should have been territory held or should have been something else besides body counts but you know look like a good measure seemed pretty important at the time just happened to be wrong now organizations always allocate scarce resources all organizational resources are always scarce and they allocate them to focus on goal achievement there's always a competition for the time and energy of the people who work in an organization and so that's the other reason you want sustainability indicators by creating those indicators you then get into the competition for money and people in an organization okay if you don't have those sustainability indicators then you know people will be managing the organization against other factors and so it's absolutely essential to develop these indicators or this activity will not continue in an organization so that's the the bottom line frankly of why these measures have to be developed the process of defining and improving organizational routines which is what we're talking about to make sustainability happen in an organization has to begin somewhere sometimes it begins with a small step something that you can get your arms around you can define so let's say it's let's reduce energy use okay let's just reduce our electric bills okay that will make us a more sustainable organization you see that happening people are putting in different kind of light bulbs and they're putting in you know electronic devices to control when the air conditioning comes on and when it goes off and motion detectors and all of those kinds of things once the initial sustainability's are developed they can be applied they will be and then they can be refined so the indicators themselves are symbolic in its early stages in convincing people in the organization oh we're now being managed against this we're going to be asked how much water we use how much electricity we use we might even be asked how much garbage we're producing and how much of a recycling maybe we'll weigh it you start with the simple stuff the stuff that we know are relatively easy to do and then as time goes on you'll see the measurements become more sophisticated a benchmarking and learning new organization routines from other organizations is essential in new management areas like sustainability and so what you're gonna see is a lot of people borrowing from each other people going to other

organizations and trying\n00:24:32.780 to figure out well how do they do it
at\n00:24:33.890 Starbucks how they do it at Walmart\n00:24:35.860 let's see
let's try to imitate that\n00:24:38.180 let's see if that'll work
here\n00:24:39.940 eventually you're going to start seeing\n00:24:42.290 the
indicators get more common and in\n00:24:45.950 more general use you know we saw
this\n00:24:48.770 actually in the financial world with the\n00:24:51.260 development
of generally accepted\n00:24:52.580 accounting practices though those\n00:24:55.160
practices were not the first set of\n00:24:57.440 accounting practices those are the
ones\n00:24:59.390 that developed over time as more and\n00:25:01.520 more
organizations started to use them\n00:25:04.070 you're gonna see the same thing
I\n00:25:05.870 believe happened here so what does this\n00:25:10.370 lead us to well
first you know as I\n00:25:13.640 talked about during our class on\n00:25:15.170
performance management which is part of\n00:25:16.940 the first few weeks I went
through all\n00:25:18.770 of the tools of management in order to\n00:25:20.960 manage
something you have to measure it\n00:25:22.430 without measurement you can't tell
if\n00:25:25.010 what management's doing is making it\n00:25:26.990 better or
making it worse some\n00:25:29.570 measurements essential very often
though\n00:25:32.150 when you start measuring something for\n00:25:33.800 the first
time you make mistakes and so\n00:25:37.100 what's really important is that
we\n00:25:38.930 program an organizational learning that\n00:25:41.810 we evaluate
this that we keep trying to\n00:25:44.210 relate it to goals the other thing
that\n00:25:46.280 happens in organizations is things get\n00:25:48.080 ossified
people get in they say this is\n00:25:50.600 how we measure sedating ability
around\n00:25:52.040 here I don't care how they do it at\n00:25:53.810 Walmart
we're gonna do it this way\n00:25:55.370 that's a bad thing you want this
change\n00:25:58.370 to take place early on we have a lot to\n00:26:03.080 learn and
need to be open to listening\n00:26:05.510 observing and changing our\n00:26:07.580
sustainability strategies and the way we\n00:26:09.860 measure this success of
sustainability\n00:26:12.770 itself so and I've made this point a\n00:26:16.370
number of times today that this is new\n00:26:19.420 we don't really know what
we're doing\n00:26:21.620 yet we know that it needs to be done and\n00:26:24.800
I've actually seen I mean in in doing\n00:26:27.950 the book sustainability
management and\n00:26:29.930 in preparing for for this session and\n00:26:32.330 for
others there's been a fair amount of\n00:26:34.340 development than the last ten
years\n00:26:36.220 enormous amount of progress have been\n00:26:38.330 made a lot of
ideas that that were there\n00:26:40.970 at the very beginning of this
literature\n00:26:42.409 have already been set aside by I think\n00:26:45.500
improvements and you're going to see a\n00:26:47.539 lot more\n", "extra":
{"cited_message_idx": 7, "search_result_idx": null, "evidence_text": "source"}, "url":
"file-tUW5FEVxOWlkIvZeXInaloOI"}}, {"start_ix": 1991, "end_ix": 2001,
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free-transcript-ygxb6KR4BPk.txt", "id": "file-wRoN9IGwwGzaK8AP6BufoHBk", "source":
"my_files", "text": "# tactiq.io free youtube transcript\n# How supply chain
transparency can help the planet | Markus Mutz\n#
<https://www.youtube.com/watch/ygxb6KR4BPk>\n\n00:00:13.042 In almost all aspects of our
lives\n00:00:15.125 we have perfect information available
instantaneously.\n00:00:20.042 My phone can tell me everything about my
finances,\n00:00:23.333 where precisely I am on a map\n00:00:25.583 and the best way
to my next destination,\n00:00:27.750 all with a click of a button.\n00:00:30.333 But

this availability of information and transparency\n00:00:33.458 almost completely disappears when it comes to consumer products.\n00:00:38.208 If you go to the seafood counter at your local supermarket,\n00:00:41.542 you can probably choose between several different types of fish.\n00:00:45.375 But chances are, they won't be able to tell you\n00:00:47.958 who caught the fish, where precisely it was caught,\n00:00:51.125 whether it is sustainable to catch it there\n00:00:53.417 and how it got transported.\n00:00:56.083 And that holds true for almost everything we buy.\n00:00:59.000 Every can of soup,\n00:01:00.792 every piece of meat, every T-shirt.\n00:01:03.333 We as humans, right now,\n00:01:05.625 are destroying the only thing we really need to survive:\n00:01:09.167 our planet.\n00:01:10.458 And most of the horrible problems that we're facing today,\n00:01:13.500 like climate change\n00:01:14.792 and modern slavery in supply chains,\n00:01:17.500 come down to decisions.\n00:01:19.250 Human decisions to produce something one way and not another.\n00:01:24.958 And that's how we, as consumers,\n00:01:27.208 end up making decisions that harm the planet\n00:01:30.208 or our fellow humans.\n00:01:31.875 By choosing the wrong products.\n00:01:35.167 But I refuse to believe that anybody here in this room,\n00:01:38.542 or frankly, anybody on this planet,\n00:01:40.625 really wants to buy a product\n00:01:42.542 that harms the planet or our fellow humans\n00:01:46.000 if given the choice.\n00:01:48.583 But you see, choice is a loaded word.\n00:01:50.792 Choice means there's another option.\n00:01:53.167 Choice means you can afford that option.\n00:01:56.208 But choice also means\n00:01:57.708 you have enough information to make an informed decision.\n00:02:01.792 And that information nowadays simply just doesn't exist.\n00:02:06.875 Or at least it's really, really hard to access.\n00:02:11.625 But I think this is about to change.\n00:02:13.667 Because we can use technology to solve this information problem.\n00:02:17.750 And many of the specific technologies that we need to do that\n00:02:20.833 have become better and cheaper over the recent years,\n00:02:24.542 and are now ready to be used at scale.\n00:02:27.458 So, over the past two years,\n00:02:28.875 my team and I have been working\n00:02:30.583 with one of the world's largest conservation organizations, WWF,\n00:02:34.833 and we've founded a company called OpenSC,\n00:02:38.500 where SC stands for supply chain.\n00:02:41.708 And we believe that by using technology\n00:02:44.125 we can help to create\n00:02:47.500 transparency and traceability in supply chains,\n00:02:50.833 and through that, help to completely revolutionize\n00:02:54.375 the way that we buy and also produce products as humans.\n00:03:00.333 Now, some of this is going to sound a little bit like science fiction,\n00:03:04.208 but it's already happening.\n00:03:06.083 Let me explain.\n00:03:08.208 So, in order to solve this information problem,\n00:03:10.833 we need to do three things:\n00:03:12.542 verify, trace and share.\n00:03:15.833 Verify specific sustainability\n00:03:19.333 and ethical production claims\n00:03:21.167 in a data-based and automated way.\n00:03:24.042 Then trace those individual physical products\n00:03:26.917 throughout their supply chains,\n00:03:28.625 and finally, share that information with consumers\n00:03:31.667 in a way that truly gives them a choice\n00:03:34.125 and lets them make consumption decisions\n00:03:36.125 that are more aligned with their values.\n00:03:38.958 I'm going to use a real product\n00:03:42.292 and a supply chain where we've made all of this a reality already:\n00:03:46.750 a Patagonian toothfish,\n00:03:48.042 or Chilean sea bass, as it's called in the US.\n00:03:51.083 Number one, verify.\n00:03:53.792 Verify how something is produced.\n00:03:56.375 But not just by saying, "Trust me, this is

good, \n00:03:59.208 trust me, we've done all the right things, " \n00:04:01.417 but by producing evidence for that individual physical product, \n00:04:05.458 and the way it was produced. \n00:04:07.750 By producing evidence \n00:04:09.042 for a specific sustainability or ethical production claim. \n00:04:12.833 So for example, in the case of the fish, \n00:04:15.708 has this fish been caught in an area where there's enough of them, \n00:04:19.625 so that it's sustainable to catch it there \n00:04:21.666 and not in a marine protected area? \n00:04:24.375 So what we're doing here \n00:04:25.750 is we're taking almost real-time GPS data from the ship -- \n00:04:29.667 the ship that's fishing -- \n00:04:31.208 and that tells us where the ship is \n00:04:33.458 and where it's going at what speed. \n00:04:36.042 And we can then combine that with other types of data, \n00:04:39.208 like, for example, how deep the sea floor is. \n00:04:42.000 And combining all of this information, \n00:04:44.667 our machine-learning algorithms can then verify, in an automated way, \n00:04:48.833 whether the ship is only fishing where it's supposed to, or not. \n00:04:53.875 And as sensors become cheaper, \n00:04:56.458 we can put them in more places. \n00:04:58.500 And that means we can capture more data, \n00:05:00.875 and combining that with advancements in data science, \n00:05:03.708 it means that we can now verify \n00:05:07.000 specific sustainability and ethical production claims \n00:05:11.042 in an automated, real-time and ongoing manner. \n00:05:15.250 And that really lays the basis for this information revolution. \n00:05:19.417 So, number two, trace. \n00:05:21.625 Trace those individual physical products, \n00:05:24.708 so that we can truly say \n00:05:26.750 that the claim that we've verified about a certain product \n00:05:29.500 actually belongs to that individual product \n00:05:32.500 that we as consumers have right in front of us. \n00:05:35.042 Because without that level of traceability, \n00:05:38.375 all that we've really verified in the first place \n00:05:41.250 is that somebody, somewhere, at some point \n00:05:44.125 caught a fish in a sustainable way, \n00:05:46.458 or didn't harm the employee when asking them to produce a T-shirt, \n00:05:51.375 or didn't use pesticides when growing a vegetable that didn't actually need it. \n00:05:57.292 Only if I give a product an identity from the start \n00:06:01.250 and then trace it throughout the whole supply chain, \n00:06:04.042 can this claim and the value that's been created \n00:06:07.667 by producing it in the right way \n00:06:10.000 truly stay with it. \n00:06:13.542 Now, I've talked about cheaper sensors. \n00:06:16.167 There are many other technological developments \n00:06:18.667 that make all of this much more possible today than ever before. \n00:06:22.917 For example, the falling costs of tags. \n00:06:26.792 You give a product a name, \n00:06:29.875 a serial number, an identity, \n00:06:31.917 the tag is its passport. \n00:06:34.125 What you can see here is a toothfish being caught. \n00:06:37.458 This is what's called a longline fishery, \n00:06:39.792 so the fish are coming up onto the boat on individual hooks. \n00:06:44.042 And as soon as the fish is on board, \n00:06:46.333 it is killed, and then after that, \n00:06:48.625 we insert a small tag into the fish's flesh. \n00:06:52.083 And in that tag, there is an RFID chip with a unique serial number, \n00:06:56.625 and that tag follows the fish throughout the whole supply chain \n00:06:59.667 and makes it really easy to sense its presence \n00:07:01.875 at any port, on any truck or in any processing plant. \n00:07:05.417 But consumers can't really read RFID tags. \n00:07:08.708 And so, when it comes to filleting and packaging the fish, \n00:07:12.958 we read the RFID tag and then remove it. \n00:07:15.875 And then we add a unique QR code to the packaging of the fish. \n00:07:20.125 And that QR

code then points back to the same information that we've verified about the fish in the first place. And so, depending on the type of product that we're working with, we may use QR codes, bar codes, RFID tags or other tag technologies. But there are also technologies that are at the brink of large-scale breakthrough that make tags themselves obsolete. Like, for example, analyzing a product for trace elements that can then tell you quite accurately where it is actually from. Then there's blockchain. A decentralized technology can act as a catalyst for this revolution. Because it can help mitigate some of the trust issues that are inherent to giving people information and then asking them to change their consumption behavior because of that information. And so, we use blockchain technology where it adds value to what we're doing. But importantly, we don't let the limitations that this technology still has today, like, for example, with regards to scaling, we don't let that stand in our way. And that brings us to the third point. Share. How to share the information that we've verified and tracked about where a product is from, how it was produced and how it got to where it is? How to share this information is really different from product to product. And different from where you buy it. You behave differently in those situations. You are stressed and time-poor in the supermarket. Or with short attention span over dinner, because your date is so cute. Or you are critical and inquisitive when researching for a larger purchase online. And so for our fish, we've developed a digital experience that works when buying the fish in a fish specialty store and that gives you all of the information about the fish and its journey. But we also worked with a restaurant and developed a different digital experience that only summarizes the key facts about the fish and its journey, and works better in a dinner setting and, hopefully, there doesn't annoy your date too much. Now, that brings us full circle. We've verified that the fish was caught in an area where it's sustainable to do so. We've then traced it throughout the entire supply chain to maintain its identity and all the information that's attached to it. And then, we've shared that information with consumers in a way that gives them a choice and lets them make consumption decisions that are more in line with their values. Now, for this fish example, this is already rolled out at scale. This season, the entire fleet of the world's largest toothfish fishing company, Austral Fisheries, is tagging every single fish that they catch and that ends up in their premium branded "Glacier 51" product. And you can already buy this fish. And with it, you can have all of the information I talked about today, and much more, attached to each individual fish or portion of the fish that you may buy. But this is not a fish or seafood thing. We're working on many, many different commodities and

products\n00:10:37.875 and their supply chains across the globe.\n00:10:40.292 From dairy to fruit and vegetables,\n00:10:42.917 to nonfood products made out of wood.\n00:10:45.708 As a consumer, all of this may sound like a huge burden,\n00:10:50.250 because you don't have time to look at all of this information\n00:10:53.792 every time you buy something.\n00:10:56.292 And I don't expect you to,\n00:10:58.042 because you'll have help with that.\n00:11:01.167 In the future, we'll leave the decision of which specific product to buy\n00:11:06.542 increasingly up to machines.\n00:11:08.750 An algorithm will know enough about you\n00:11:11.000 to make those decisions for you, so you don't have to.\n00:11:15.500 And maybe it will even do a better job at it.\n00:11:18.375 In a recent study, 85 percent of those\n00:11:20.833 buying a product through a virtual assistant\n00:11:23.875 said that they, on occasion,\n00:11:25.708 actually went with the top product recommendation\n00:11:28.083 of that virtual assistant,\n00:11:29.375 rather than the specific product or brand\n00:11:31.458 that they set out to buy in the first place.\n00:11:34.208 You just say you need toilet paper,\n00:11:36.042 it's then an algorithm that decides which brand, price point\n00:11:40.500 or whether you go with recycled or not.\n00:11:43.583 Well, nowadays this is usually based on what you bought in the past,\n00:11:47.833 or whoever pays the most to the company behind the virtual assistant.\n00:11:52.042 But why shouldn't that be also based on your values?\n00:11:57.625 Knowing that you want to buy planet-friendly\n00:12:00.208 and knowing whether and how much you're willing and able to pay for that.\n00:12:05.708 Now, that will make it easy and seamless,\n00:12:09.250 but still based on granular effects and data\n00:12:11.542 to choose the right products.\n00:12:13.625 Not by necessarily doing it yourself\n00:12:15.875 but by asking an algorithm\n00:12:18.208 that knows how much you care about this planet.\n00:12:21.792 Not by necessarily doing it yourself\n00:12:23.792 but by asking an algorithm\n00:12:25.917 that is never time-poor or distracted,\n00:12:29.792 or with short attention span because of the cute date,\n00:12:33.625 and that knows how much you care about this planet\n00:12:36.375 and the people living on it,\n00:12:37.833 by asking that algorithm to look at all of that information for you\n00:12:41.708 and to decide for you.\n00:12:44.500 If we have reliable and trustworthy information like that\n00:12:48.708 and the right systems that make use of it,\n00:12:51.208 consumers will support those who are doing the right thing\n00:12:54.583 by producing products in a sustainable and ethical way.\n00:12:58.708 They will support them every time\n00:13:00.750 by choosing their goods over others.\n00:13:04.042 And that means that good producers and processors and retailers\n00:13:09.000 will get rewarded.\n00:13:10.292 And bad actors will be forced to adjust their practices\n00:13:14.667 or get out of business.\n00:13:17.333 And we need that.\n00:13:19.000 If we want to continue to live together on this beautiful planet,\n00:13:22.792 we really need it.\n00:13:24.667 Thank you.\n00:13:25.958 (Applause)\n", "extra": {"cited_message_idx": 6, "search_result_idx": null, "evidence_text": "source"}, "url": "file-wRoN9IGwwGzak8AP6BufoHBk"}}, {"start_ix": 2339, "end_ix": 2349, "citation_format_type": "tether_og", "metadata": {"type": "file", "name": "Regenerative Development and Design A Framework for Evolving Sustainability (Regenesi Group) (Z-Library).pdf", "id": "file-3xHIpFhPL82jSP4FoQKqKem0", "source": "my_files", "text": "\n\n\n\n\nRegenerative\n\nDevelopment\n\nand Design\n\nA Framework for\n\nEvolving Sustainability\n\n\nPamela Mang\n\nBen Haggard\n\n\nRegenesi\n\n\n\n\nCover Design: Wiley\n\nCover Images: (bottom) \u00a9 Flickr/Nicholas A. Tonelli, Susquehanna River; (top, left to right) \u00a9 Michael

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 different types of fish.\n00:00:45.375 But chances are,they won't be able to tell
 you\n00:00:47.958 who caught the fish,where precisely it was caught,\n00:00:51.125

whether it is sustainable to catch it there\n00:00:53.417 and how it got transported.\n00:00:56.083 And that holds true for almost everything we buy.\n00:00:59.000 Every can of soup,\n00:01:00.792 every piece of meat, every T-shirt.\n00:01:03.333 We as humans, right now,\n00:01:05.625 are destroying the only thing we really need to survive:\n00:01:09.167 our planet.\n00:01:10.458 And most of the horrible problems that we're facing today,\n00:01:13.500 like climate change\n00:01:14.792 and modern slavery in supply chains,\n00:01:17.500 come down to decisions.\n00:01:19.250 Human decisions to produce something one way and not another.\n00:01:24.958 And that's how we, as consumers,\n00:01:27.208 end up making decisions that harm the planet\n00:01:30.208 or our fellow humans.\n00:01:31.875 By choosing the wrong products.\n00:01:35.167 But I refuse to believe that anybody here in this room,\n00:01:38.542 or frankly, anybody on this planet,\n00:01:40.625 really wants to buy a product\n00:01:42.542 that harms the planet or our fellow humans\n00:01:46.000 if given the choice.\n00:01:48.583 But you see, choice is a loaded word.\n00:01:50.792 Choice means there's another option.\n00:01:53.167 Choice means you can afford that option.\n00:01:56.208 But choice also means\n00:01:57.708 you have enough information to make an informed decision.\n00:02:01.792 And that information nowadays simply just doesn't exist.\n00:02:06.875 Or at least it's really, really hard to access.\n00:02:11.625 But I think this is about to change.\n00:02:13.667 Because we can use technology to solve this information problem.\n00:02:17.750 And many of the specific technologies that we need to do that\n00:02:20.833 have become better and cheaper over the recent years,\n00:02:24.542 and are now ready to be used at scale.\n00:02:27.458 So, over the past two years,\n00:02:28.875 my team and I have been working\n00:02:30.583 with one of the world's largest conservation organizations, WWF,\n00:02:34.833 and we've founded a company called OpenSC,\n00:02:38.500 where SC stands for supply chain.\n00:02:41.708 And we believe that by using technology\n00:02:44.125 we can help to create\n00:02:47.500 transparency and traceability in supply chains,\n00:02:50.833 and through that, help to completely revolutionize\n00:02:54.375 the way that we buy and also produce products as humans.\n00:03:00.333 Now, some of this is going to sound a little bit like science fiction,\n00:03:04.208 but it's already happening.\n00:03:06.083 Let me explain.\n00:03:08.208 So, in order to solve this information problem,\n00:03:10.833 we need to do three things:\n00:03:12.542 verify, trace and share.\n00:03:15.833 Verify specific sustainability\n00:03:19.333 and ethical production claims\n00:03:21.167 in a data-based and automated way.\n00:03:24.042 Then trace those individual physical products\n00:03:26.917 throughout their supply chains,\n00:03:28.625 and finally, share that information with consumers\n00:03:31.667 in a way that truly gives them a choice\n00:03:34.125 and lets them make consumption decisions\n00:03:36.125 that are more aligned with their values.\n00:03:38.958 I'm going to use a real product\n00:03:42.292 and a supply chain where we've made all of this a reality already:\n00:03:46.750 a Patagonian toothfish,\n00:03:48.042 or Chilean sea bass, as it's called in the US.\n00:03:51.083 Number one, verify.\n00:03:53.792 Verify how something is produced.\n00:03:56.375 But not just by saying, "Trust me, this is good,\n00:03:59.208 trust me, we've done all the right things,"\n00:04:01.417 but by producing evidence for that individual physical product,\n00:04:05.458 and the way it was produced.\n00:04:07.750 By producing evidence\n00:04:09.042 for a specific sustainability or ethical production claim.\n00:04:12.833 So for example, in the case of the fish,\n00:04:15.708 has this fish been caught in an area where there's

enough of them, so that it's sustainable to catch it there and not in a marine protected area? So what we're doing here is we're taking almost real-time GPS data from the ship -- the ship that's fishing -- and that tells us where the ship is and where it's going at what speed. And we can then combine that with other types of data, like, for example, how deep the sea floor is. And combining all of this information, our machine-learning algorithms can then verify, in an automated way, whether the ship is only fishing where it's supposed to, or not. And as sensors become cheaper, we can put them in more places. And that means we can capture more data, and combining that with advancements in data science, it means that we can now verify specific sustainability and ethical production claims in an automated, real-time and ongoing manner. And that really lays the basis for this information revolution. So, number two, trace. Trace those individual physical products, so that we can truly say that the claim that we've verified about a certain product actually belongs to that individual product that we as consumers have right in front of us. Because without that level of traceability, all that we've really verified in the first place is that somebody, somewhere, at some point caught a fish in a sustainable way, or didn't harm the employee when asking them to produce a T-shirt, or didn't use pesticides when growing a vegetable that didn't actually need it. Only if I give a product an identity from the start and then trace it throughout the whole supply chain, can this claim and the value that's been created by producing it in the right way truly stay with it. Now, I've talked about cheaper sensors. There are many other technological developments that make all of this much more possible today than ever before. For example, the falling costs of tags. You give a product a name, a serial number, an identity, the tag is its passport. What you can see here is a toothfish being caught. This is what's called a longline fishery, so the fish are coming up onto the boat on individual hooks. And as soon as the fish is on board, it is killed, and then after that, we insert a small tag into the fish's flesh. And in that tag, there is an RFID chip with a unique serial number, and that tag follows the fish throughout the whole supply chain and makes it really easy to sense its presence at any port, on any truck or in any processing plant. But consumers can't really read RFID tags. And so, when it comes to filleting and packaging the fish, we read the RFID tag and then remove it. And then we add a unique QR code to the packaging of the fish. And that QR code then points back to the same information that we've verified about the fish in the first place. And so, depending on the type of product that we're working with, we may use QR codes, bar codes, RFID tags or other tag technologies. But there are also technologies that are at the brink of large-scale

breakthrough\n00:07:43.083 that make tags themselves obsolete.\n00:07:45.083 Like, for example, \n00:07:46.708 analyzing a product for trace elements\n00:07:49.458 that can then tell you quite accurately where it is actually from. \n00:07:53.000 Then there's blockchain. \n00:07:54.417 A decentralized technology can act as a catalyst for this revolution. \n00:07:59.250 Because it can help mitigate some of the trust issues\n00:08:03.042 that are inherent to giving people information\n00:08:06.542 and then asking them to change their consumption behavior\n00:08:09.750 because of that information. \n00:08:12.125 And so, we use blockchain technology\n00:08:14.833 where it adds value to what we're doing. \n00:08:18.083 But importantly, \n00:08:19.375 we don't let the limitations that this technology still has today, \n00:08:22.542 like, for example, with regards to scaling, \n00:08:24.625 we don't let that stand in our way. \n00:08:26.625 And that brings us to the third point. \n00:08:29.125 Share. \n00:08:30.417 How to share the information that we've verified and tracked\n00:08:34.292 about where a product is from, how it was produced\n00:08:37.125 and how it got to where it is? \n00:08:39.625 How to share this information\n00:08:41.582 is really different from product to product. \n00:08:44.458 And different from where you buy it. \n00:08:46.792 You behave differently in those situations. \n00:08:49.375 You are stressed and time-poor in the supermarket. \n00:08:53.042 Or with short attention span over dinner, \n00:08:55.333 because your date is so cute. \n00:08:57.542 Or you are critical and inquisitive\n00:09:00.583 when researching for a larger purchase online. \n00:09:04.750 And so for our fish, \n00:09:06.375 we've developed a digital experience\n00:09:09.333 that works when buying the fish in a freezer in a fish specialty store\n00:09:15.125 and that gives you all of the information about the fish and its journey. \n00:09:18.958 But we also worked with a restaurant\n00:09:21.625 and developed a different digital experience\n00:09:24.625 that only summarizes the key facts about the fish and its journey, \n00:09:28.208 and works better in a dinner setting\n00:09:30.667 and, hopefully, there doesn't annoy your date too much. \n00:09:34.250 Now, that brings us full circle. \n00:09:36.625 We've verified that the fish was caught\n00:09:39.667 in an area where it's sustainable to do so. \n00:09:42.667 We've then traced it throughout the entire supply chain\n00:09:45.292 to maintain its identity and all the information that's attached to it. \n00:09:49.417 And then, we've shared that information with consumers\n00:09:52.000 in a way that gives them a choice\n00:09:53.833 and lets them make consumption decisions\n00:09:56.000 that are more in line with their values. \n00:09:59.542 Now, for this fish example, this is already rolled out at scale. \n00:10:03.667 This season, \n00:10:04.958 the entire fleet of the world's largest toothfish fishing company, \n00:10:08.542 Austral Fisheries, \n00:10:09.917 is tagging every single fish that they catch\n00:10:12.792 and that ends up in their premium branded "Glacier 51" product. \n00:10:17.208 And you can already buy this fish. \n00:10:19.375 And with it, you can have all of the information I talked about today, \n00:10:23.292 and much more, \n00:10:24.792 attached to each individual fish or portion of the fish that you may buy. \n00:10:30.583 But this is not a fish or seafood thing. \n00:10:34.667 We're working on many, many different commodities and products\n00:10:37.875 and their supply chains across the globe. \n00:10:40.292 From dairy to fruit and vegetables, \n00:10:42.917 to nonfood products made out of wood. \n00:10:45.708 As a consumer, all of this may sound like a huge burden, \n00:10:50.250 because you don't have time to look at all of this information\n00:10:53.792 every time you buy something. \n00:10:56.292 And I don't

expect you to, \n00:10:58.042 because you'll have help with that. \n00:11:01.167 In the future, we'll leave the decision of which specific product to buy \n00:11:06.542 increasingly up to machines. \n00:11:08.750 An algorithm will know enough about you \n00:11:11.000 to make those decisions for you, so you don't have to. \n00:11:15.500 And maybe it will even do a better job at it. \n00:11:18.375 In a recent study, 85 percent of those \n00:11:20.833 buying a product through a virtual assistant \n00:11:23.875 said that they, on occasion, \n00:11:25.708 actually went with the top product recommendation \n00:11:28.083 of that virtual assistant, \n00:11:29.375 rather than the specific product or brand \n00:11:31.458 that they set out to buy in the first place. \n00:11:34.208 You just say you need toilet paper, \n00:11:36.042 it's then an algorithm that decides which brand, price point \n00:11:40.500 or whether you go with recycled or not. \n00:11:43.583 Well, nowadays this is usually based on what you bought in the past, \n00:11:47.833 or whoever pays the most to the company behind the virtual assistant. \n00:11:52.042 But why shouldn't that be also based on your values? \n00:11:57.625 Knowing that you want to buy planet-friendly \n00:12:00.208 and knowing whether and how much you're willing and able to pay for that. \n00:12:05.708 Now, that will make it easy and seamless, \n00:12:09.250 but still based on granular effects and data \n00:12:11.542 to choose the right products. \n00:12:13.625 Not by necessarily doing it yourself \n00:12:15.875 but by asking an algorithm \n00:12:18.208 that knows how much you care about this planet. \n00:12:21.792 Not by necessarily doing it yourself \n00:12:23.792 but by asking an algorithm \n00:12:25.917 that is never time-poor or distracted, \n00:12:29.792 or with short attention span because of the cute date, \n00:12:33.625 and that knows how much you care about this planet \n00:12:36.375 and the people living on it, \n00:12:37.833 by asking that algorithm to look at all of that information for you \n00:12:41.708 and to decide for you. \n00:12:44.500 If we have reliable and trustworthy information like that \n00:12:48.708 and the right systems that make use of it, \n00:12:51.208 consumers will support those who are doing the right thing \n00:12:54.583 by producing products in a sustainable and ethical way. \n00:12:58.708 They will support them every time \n00:13:00.750 by choosing their goods over others. \n00:13:04.042 And that means that good producers and processors and retailers \n00:13:09.000 will get rewarded. \n00:13:10.292 And bad actors will be forced to adjust their practices \n00:13:14.667 or get out of business. \n00:13:17.333 And we need that. \n00:13:19.000 If we want to continue to live together on this beautiful planet, \n00:13:22.792 we really need it. \n00:13:24.667 Thank you. \n00:13:25.958 (Applause) \n", "cloud_doc_url": null}, {"matched_text": "\u00107\u0020source\u0011", "start_idx": 1177, "end_idx": 1187, "alt": null, "type": "file", "name": "tactiq-free-transcript-lmdDnqBh-Zg.txt", "id": "file-tUW5FEVxOWlkIvZeXIInaloOI", "source": "my_files", "snippet": "# tactiq.io free youtube transcript\n# Steve Cohen, Sustainability Metrics\n# https://www.youtube.com/watch/lmdDnqBh-Zg\n\n00:00:00.740 we'll talk with you about how we define\n00:00:03.210 these metrics what aspects of\n00:00:07.259 sustainability should an organization\n00:00:09.120 measure which I think is one of the\n00:00:10.500 critical issues that we have to think\n00:00:12.509 about and then the relationship of these\n00:00:15.420 sustainability metrics to the\n00:00:17.580 organization's general performance\n00:00:19.500 measurement and management system the\n00:00:21.600 challenge is going to be to integrate so\n00:00:24.660 we have to develop these new ways of\n00:00:27.090 looking at the world and of\n00:00:28.740 organizational performance but then\n00:00:30.929 after a while

it's going to be very important that they not be seen as something separate oh that's just the way we manage around here nothing different than our routine and really part of other types of metrics what are the methodological issues raised by measuring sustainability and I hinted at that before the complexity of this issue why it's important to do this and and what what does this all lead us to conclude with so how do we define sustainability metrics so since this is a course the sustainability management I'm going to have to give you a definition so they are an organization or jurisdictions indicators of resource utilization waste reduction and pollution discharges into the environment some being very focused here there's a lot of other things people might measure in fact in our case study they talked about a bunch of other things I'm going to try to focus on these three things now according to one set of authors that I'm quoting here it includes material intensity energy intensity water consumption toxic emissions and pollutants they're actually separating pollutants into toxics and other pollutants because put and toxic being those pollutants that are most intense that can poison life relatively quickly where some pollutants can simply change things not always for the better some forms of pollutants are really having too much of a good thing too much nutrient too much nutrition in a lake creates a set of environmental impacts that you don't want but that's different than taking plutonium and dropping it off in the middle of the lake one of them is very toxic immediately and the other is simply a pollutant there are no agreed set of sustainability metrics everyone has their ideas about what's important and we should all expect that this is going to evolve for quite a while so let me focus on the aspects that I think an organization should measure and I should really say that these are starting points I'm really working and I do this here and I do this a little bit in my writing I'm trying to create some boundaries knowing the people are going to take potshots at it okay and that's okay that's really how these things start that's how they evolve so I don't want you to think oh he said it was this therefore that's true and in in your final exam I'm not going to have a set of true or false questions or multiple-choice questions related to this in fact there won't be any true or false questions or multiple-choice questions anywhere in this course in part because we simply don't have that level of information here so material intensity is the first pounds of material wasted per unit of output in other words what is it that we're throwing away that doesn't go into the product okay that's one element of material intensity but also is their design for reuse

does the product have\n00:03:47.920 the potential to be returned for\n00:03:50.220 remanufacturing or is it used up after\n00:03:53.500 it's used is there some element of it\n00:03:56.140 when you think about material intensity\n00:03:58.000 one of the questions is is this is it\n00:04:00.190 possible to recycle this are the\n00:04:03.640 materials being used for this product\n00:04:06.480 renewable or mined from one-time\n00:04:09.160 geologic resources so it's not so part\n00:04:12.430 of its can it be used again but part of\n00:04:14.800 it is is this something that we don't\n00:04:16.930 have to worry about whether it's\n00:04:18.070 recycled because we can make more of it\n00:04:20.019 because it's essentially solar and\n00:04:22.919 organic in its in its orientation\n00:04:26.410 so that's material intensity the second\n00:04:29.600 area is energy intensity and this is\n00:04:32.120 expressed as BTUs per unit it's a\n00:04:35.060 measure of the net fuel energy consumed\n00:04:37.099 to provide the heat and power\n00:04:38.990 requirements of the production process\n00:04:41.020 okay so that's energy intensity also\n00:04:44.150 again renewable versus fossil fuels so\n00:04:47.300 it's not just how much energy what's the\n00:04:49.520 source of the energy and also the\n00:04:52.960 efficiency of the use of the energy in\n00:04:55.910 other words how much of the energy in\n00:04:59.300 the production process could have been\n00:05:02.620 recovered so we'll have a production\n00:05:05.120 process that uses say a thousand dollars\n00:05:07.520 worth of electricity but it turns out\n00:05:09.470 600 of that was wasted there was waste\n00:05:12.470 heat that went up the stack and we could\n00:05:13.940 have used it we could have used that\n00:05:16.310 energy for some other production process\n00:05:18.530 if we had recovered it so these are all\n00:05:21.050 factors the energy intensity that is\n00:05:23.720 related to sustainability\n00:05:25.460 third factors water consumption\n00:05:27.909 expressed as gallons of fresh water\n00:05:29.960 excluding rain water consumed per unit\n00:05:32.300 of output how much water's is the stuff\n00:05:34.130 use when we're making it okay other\n00:05:37.820 factors though again with water the\n00:05:40.669 reuse of the water what's the the\n00:05:43.190 discharge when you release that water\n00:05:45.169 into the environment can it be reused or\n00:05:48.259 is it hopeless is it now water that\n00:05:50.630 can't be used for drinking or for\n00:05:54.430 growing plants also can we improve the\n00:06:02.449 efficiency through improved transmission\n00:06:05.180 reduced evaporation in the case of\n00:06:08.030 plants more efficient plants in their\n00:06:10.729 root structure so water consumption is\n00:06:13.729 an issue that we have to measure toxic\n00:06:18.289 emissions expressed as pounds of toxic\n00:06:20.449 materials emitted by the process per\n00:06:23.509 unit of output okay now these are all\n00:06:26.090 quotations from the work that I've cited\n00:06:29.150 here that I hope you've taken a look at\n00:06:32.110 toxic chemicals are defined by a number\n00:06:34.550 of pieces of US legislation we've gone\n00:06:36.320 through a number of regulatory processes\n00:06:38.570 to decide what's\n00:06:40.050 toxic and what isn't but other factors\n00:06:42.690 that need to be considered when you're\n00:06:44.069 thinking about toxicity is the degree of\n00:06:46.530 toxicity the treatment technology do we\n00:06:49.440 have a way of dealing with it and also\n00:06:51.659 even most importantly in my view is\n00:06:54.180 pathway of exposure is this a toxic that\n00:06:56.940 very easily gets into people's homes and\n00:07:00.419 then into their biological systems is\n00:07:03.000 there you know are these toxics that\n00:07:05.509 once they're released have less of

a\n00:07:08.460 capacity to impair people's homes and\n00:07:12.870 lives okay so those are all factors that\n00:07:16.169 you have to think about and then there's\n00:07:18.270 pollutant emissions which can be\n00:07:20.520 expressed as pounds of pollutants\n00:07:21.870 emitted by the process per unit of\n00:07:24.060 output for every car there's X amount of\n00:07:27.750 pollution for every you know for every\n00:07:31.440 watch there's X amount of pollution so\n00:07:34.349 you want to measure that how much how\n00:07:36.060 many what kind of emissions are there\n00:07:37.650 now that's for greenhouse gas emissions\n00:07:39.539 but for other air pollutants also sulfur\n00:07:43.319 dioxide other kinds of some of our more\n00:07:47.520 traditional pollutants let's call it\n00:07:50.630 then we want to think not just of the\n00:07:52.860 pollution emissions but what's the\n00:07:54.479 health impact and are the health impacts\n00:07:56.789 things that we can do something about or\n00:07:59.550 are they things that we can't do\n00:08:01.469 anything about if the impact is asthma\n00:08:04.050 is that something that's treatable\n00:08:06.889 versus the impact being cancer which\n00:08:10.949 whilst treatable perhaps is less\n00:08:12.539 treatable so we actually have to look at\n00:08:14.400 those things though this may sound a\n00:08:15.900 little brutal but those are in fact\n00:08:18.060 things you have to judge how bad is this\n00:08:21.029 stuff is a question you have to ask and\n00:08:23.729 has to be answered no other factors are\n00:08:27.029 you know the issue of sustainability can\n00:08:28.830 differ by geography okay you can have a\n00:08:31.740 landfill in a desert and it's going to\n00:08:34.409 have less of an environmental impact on\n00:08:36.510 the surroundings because it's not going\n00:08:38.610 to do much to ground water you put a\n00:08:40.469 landfill you know you know or you\n00:08:42.659 you know if you try to hydro frack gas\n00:08:45.949 by the watershed that's a little bit\n00:08:48.870 different than if it's in a place that\n00:08:50.820 doesn't have a lot of groundwater\n00:08:53.020 not to say you should do in either place\n00:08:54.640 but that is something a sustainability\n00:08:56.560 metric would help you to measure and to\n00:08:59.860 weigh along with other kinds of issues\n00:09:01.899 and then you have to wait all this stuff\n00:09:04.770 water energy toxic pollutants what's\n00:09:08.980 more important as we develop the\n00:09:10.660 measures for our organization in this\n00:09:13.390 place all of which is going to vary by\n00:09:15.910 what we do where we are and what's the\n00:09:19.600 human settlement patterns are around us\n00:09:21.750 okay now again I said human settlement\n00:09:24.670 patterns there people would say well\n00:09:25.630 that's unethical we should worry just as\n00:09:27.399 much about the B's and the answers about\n00:09:29.350 people well I know that there people\n00:09:31.839 believe that and I I think that that is\n00:09:34.089 an ethical choice that they make I don't\n00:09:37.810 make that choice I'm more concerned\n00:09:40.510 about people so those are the problems\n00:09:46.029 in measurement I mean just think about\n00:09:48.070 what I've just laid out you know all of\n00:09:50.500 these different issues and all of these\n00:09:53.140 complexities and how do you measure that\n00:09:54.850 in an organization now\n00:09:57.070 having laid out how complex is let me\n00:09:59.230 just say that organizations do this all\n00:10:00.940 the time you have to measure what an\n00:10:03.640 organization does you have to measure\n00:10:05.709 its performance this is an aspect of its\n00:10:08.380 performance that's going to become more\n00:10:11.020 and more important in organizational\n00:10:13.120 management in part because of the\n00:10:15.100

regulatory environment because\n00:10:16.300 government's going to make people do it\n00:10:17.800 in part because resources themselves are\n00:10:21.399 becoming contaminated and scarce and we\n00:10:23.950 have no choice because otherwise we will\n00:10:26.829 degrade the resources of the providers\n00:10:28.990 with wealth government it may lead us to\n00:10:31.060 do that but corporations themselves may\n00:10:32.890 see the importance of doing it and some\n00:10:35.050 of them already have and then this is\n00:10:37.240 cultural change which i think is taking\n00:10:38.800 place which is to say that you know how\n00:10:41.829 do we define criminal activity in a\n00:10:45.250 society it's a cultural definition okay\n00:10:48.220 you know in one society you know you pay\n00:10:51.550 the trucker you know \$1,000 a month to\n00:10:54.670 make sure your truck doesn't get let's\n00:10:57.520 say hijacked okay in some societies\n00:11:00.370 that's the cost of doing business and\n00:11:02.560 other societies that's corruption okay\n00:11:05.650 those\n00:11:06.470 things are socially defined well what\n00:11:09.050 we're seeing is that increasingly and we\n00:11:11.570 saw a little bit this in the Starbucks\n00:11:13.490 case before that the social definition\n00:11:17.900 of a well-run corporation is becoming a\n00:11:20.900 sustainable corporation you and your\n00:11:24.110 friends don't want to work for a company\n00:11:26.660 that is doing evil\n00:11:30.080 what's the Google motto don't don't be\n00:11:35.900 evil don't do evil don't be evil okay\n00:11:39.380 now they're serious about that they\n00:11:41.780 actually think about is what we're doing\n00:11:44.060 somehow adding to pain and misery in the\n00:11:47.360 world okay that's become important to\n00:11:50.330 people and that's going to be helpful as\n00:11:52.610 we develop sustainability measures\n00:11:54.440 what's the relationship of\n00:11:56.710 sustainability metrics to organizational\n00:11:59.480 performance and management systems now\n00:12:02.930 as the organization learns these new\n00:12:07.160 indicators that need to be developed as\n00:12:09.170 we figure out what we want to focus on\n00:12:10.880 as we come up with these metrics then\n00:12:14.180 they have to be developed collected and\n00:12:17.450 analyzed and reported at first\n00:12:19.910 separately from routine indicators but\n00:12:23.660 then they eventually have to be\n00:12:25.340 integrated they have to be part of\n00:12:27.350 routine management a key indicator of\n00:12:30.740 success in fact it's going to be the\n00:12:33.470 ultimate invisibility of distinct\n00:12:36.290 sustainability metrics there needs to\n00:12:38.900 become a time when we actually look at\n00:12:41.540 sustainability metrics just like we look\n00:12:44.450 at market share return on equity profit\n00:12:47.570 and other more non-financial performance\n00:12:50.690 indicators like you know how many things\n00:12:53.300 that we produced what's been the cost of\n00:12:56.510 breakage all sorts of indicators that\n00:13:00.290 organizations put in and what's what are\n00:13:02.990 what are our customers saying how many\n00:13:04.820 complaints do we have what's the level\n00:13:06.350 of satisfaction how much repeat business\n00:13:08.510 you think about all the things an\n00:13:10.520 organization measures itself against now\n00:13:13.370 in the public sector these can be things\n00:13:15.620 like test scores in a school system they\n00:13:19.220 can be things like\n00:13:20.360 in rates they can be indicators widely\n00:13:25.190 ranging sets of indicators number of\n00:13:27.380 homicides number of misdemeanors the\n00:13:30.339 number of the amount of time it takes to\n00:13:33.110 respond to a fire all of these kinds of\n00:13:36.800 indicators are how organizations are\n00:13:39.170 managed we managed and we define

success\n00:13:41.209 and manage organizations around these\n00:13:44.450 indicators okay\n00:13:46.190 so when we created the masters of the\n00:13:49.070 sustainability management one of our\n00:13:50.690 indicators of success is how many\n00:13:52.700 applications did we get how many people\n00:13:55.160 did we admit we want to make sure we\n00:13:57.200 only admit about no more than half the\n00:13:59.420 people that that apply and then how many\n00:14:01.640 of those people come\n00:14:02.720 well we want at least half of those\n00:14:04.010 people to show up you know those are all\n00:14:06.079 indicators of success now in the program\n00:14:08.899 once it begins we don't want to see\n00:14:11.029 people dropping out because they hate it\n00:14:13.190 okay so our retention and attrition\n00:14:15.920 rates are indicators of success\n00:14:18.279 organizations run against metrics all\n00:14:21.290 the time and so what this is saying is\n00:14:24.920 we need to add sustainability indicators\n00:14:28.730 to that mix it's very straightforward\n00:14:31.579 what we're trying to do but it's very\n00:14:34.220 hard so it leads me to the fourth issue\n00:14:36.560 for today what are the methodological\n00:14:38.329 issues raised by measuring\n00:14:40.579 sustainability now part of the problem\n00:14:43.250 is when you when you can when you\n00:14:44.930 develop a measure you want the measure\n00:14:46.940 to be reliable and valid reliable means\n00:14:51.380 that every time you do the measure\n00:14:53.240 you're measuring the same thing you\n00:14:56.029 don't change it you don't change the\n00:14:58.040 goalposts you don't change the scoring\n00:15:00.829 system in the middle of of the\n00:15:02.839 measurement you know you don't decide oh\n00:15:04.820 this isn't going too well let's change\n00:15:07.220 the criteria okay that's that's a\n00:15:09.800 measure that's not reliable and\n00:15:12.470 then they have to be valid you have to\n00:15:13.910 measure what you actually think you're\n00:15:15.140 measuring okay and when you so that's\n00:15:19.130 the creation of the measure itself but\n00:15:21.829 then once you decide what you want to\n00:15:23.720 measure then you have to collect\n00:15:25.220 information you have to collect\n00:15:27.589 information in the same way you know\n00:15:29.959 there was a story I think it was a\n00:15:33.260 New York Times has a as a blog I think\n00:15:35.480 its 5:28 or something like that or 538\n00:15:37.940 the number of people in the Congress\n00:15:40.840 does their pull it's their political\n00:15:43.600 polling oriented website and they were\n00:15:46.850 talking about I think was Rasmussen the\n00:15:49.040 polling company and they discovered that\n00:15:51.200 methodological II they had the worst\n00:15:54.440 polls during this election they were off\n00:15:56.870 more than anybody else and they looked\n00:15:59.480 at how they were collecting their\n00:16:00.950 information one of the things you do\n00:16:02.720 when you do polling is you have to\n00:16:04.640 randomize at the place of you know went\n00:16:07.400 like when you make the call you have to\n00:16:09.710 say you have to decide you want to talk\n00:16:11.420 to the oldest female in the house and so\n00:16:14.600 if the oldest male in the house is there\n00:16:17.150 you say no no I need to talk to you\n00:16:18.860 oldest female she's not here you hang up\n00:16:20.660 you got to go to another person that's\n00:16:22.550 how you randomize at the household\n00:16:24.500 apparently they don't do it they do a\n00:16:26.840 few other things in their methodology so\n00:16:29.420 how you collect information has a lot to\n00:16:31.970 do with the quality of the information\n00:16:33.710 that you collect now when you're new\n00:16:36.320 it's something when you're starting\n00:16:38.120

something for the first time you don't have a lot of experience
collecting it you make mistakes I mean you make mistakes
because you don't quite know how to ask the question you don't
quite know how to calibrate your measurement tools and so
as you're doing it you have to learn so after a while you figure
it out you get better at it you know you get better at
taking the measurement and so eventually the your collection
system or works better so you need to understand that the
second method issue here is the experience and skill in
collecting information itself and then sometimes it's hard to know
what to measure you know we just went through all those
other measures right the whole field of sustainability water
energy material so what's more important in our area
and then how do I wait them are they all equal is some more is some
more important to my product or my organization than
others you know in a service business does it really is
there is material intensity is important for example is
energy intensity probably not but how much more important to take
a company like Starbucks a very interesting point
before is this a service business that creates ambience
and the coffee's incidental or is it a coffee company and the
service is incidental judging by the service I beginning I
think the service may be incidental but no the question here
is you have to make that decision as you create your
measurement system and you have to and what you decide to
measure then the and the definition of success has a
direct impact on the behavior of the organization that's why this
is so important you know in the school system when we
start focusing on taking tests teachers start teaching to the test
they don't care whether the kids are learning they care whether they're performing well on the test now if the two
things are the same great but if they're not
you've got a problem so measurement is not neutral and it's
certainly not neutral within the organization okay so you
need to understand that as you think about sustainability indicators and
this issue of cherry-picking indicators you look to see
what are we doing good at let's emphasize that makes us look
more sustainable and particularly with the emphasis on
green washing you have to watch for that weighting indicators
in an overall scale can it can introduce bias and as we
want to come up with an overall sustainability measure like
the gross national product like market share like the
bottom-line okay what's it going to be how do we put that
number together how do we weight it so that's an
issue that's still out there and I think will vary by organization
by geography by product by service by what the
organization's distinctive competences what is it trying to
trying to do in some cases qualitative factors may be just
as important as those things that you can measure some of

the sustainability issues that are important to you aren't subject to measurement yes you know the fair trade issues you were describing before which aren't part of my measurement of sustainability but might be part of yours how do you measure that how do you measure satisfaction how do you measure then if you're comparing material intensity to water intensity to energy intensity which is more important but management has to make these decisions and one of the critical issues for a manager is decide what's the definition of success and how will you know if we got there so in sustainability is the same thing what's the definition of a sustainability success for organization and what are the indicators that I the manager I'm going to use to measure against as we seek to perform it so despite all of these problems and I don't think I've been too shy about introducing them to you sustainability metrics are essential we really have to figure out how to do this we need to develop a way to operationally measure success in this area measurements force precision in defining goals and then force precision in the actions to achieve those goals now sometimes that means you make mistakes some of the first efforts at measuring performance in organizations were led organizations astray the classic was actually in the military during the war in Vietnam one of the first quantitative performance indicators used by Bob McNamara was Secretary of Defense was body counts they measured how many people were dying they forgot something so they saw how many Americans were dying how many beaten to me soldiers were dying what they didn't understand is that our tolerance for loss was a quite a bit lower than the Vietnamese because they were defending their country and so if they lost a million or two million soldiers in the defense of their homeland they were going to put up with that if we lost 50,000 soldiers we weren't going to put up with it so the real measure of success probably should have been territory held or should have been something else besides body counts but you know look like a good measure seemed pretty important at the time just happened to be wrong now organizations always allocate scarce resources all organizational resources are always scarce and they allocate them to focus on goal achievement there's always a competition for the time and energy of the people who work in an organization and so that's the other reason you want sustainability indicators by creating those indicators you then get into the competition for money and people in an organization okay if you don't have those sustainability indicators then you know people will be managing the organization against other factors and so it's absolutely essential to develop these indicators or this activity

will not continue in an organization so that's the the bottom line frankly of why these measures have to be developed the process of defining and improving organizational routines which is what we're talking about to make sustainability happen in an organization has to begin somewhere sometimes it begins with a small step something that you can get your arms around you can define so let's say it's let's reduce energy use okay let's just reduce our electric bills okay that will make us a more sustainable organization you see that happening people are putting in different kind of light bulbs and they're putting in you know electronic devices to control when the air conditioning comes on and when it goes off and motion detectors and all those kinds of things once the initial sustainability's are developed they can be applied they will be and then they can be refined so the indicators themselves are symbolic in its early stages in convincing people in the organization oh we're now being managed against this we're going to be asked how much water we use how much electricity we use we might even be asked how much garbage we're producing and how much of a recycling maybe we'll weigh it you start with the simple stuff the stuff that we know are relatively easy to do and then as time goes on you'll see the measurements become more sophisticated a benchmarking and learning new organization routines from other organizations is essential in new management areas like sustainability and so what you're gonna see is a lot of people borrowing from each other people going to other organizations and trying to figure out well how do they do it at Starbucks how they do it at Walmart let's see let's try to imitate that let's see if that'll work here eventually you're going to start seeing the indicators get more common and in more general use you know we saw this actually in the financial world with the development of generally accepted accounting practices though those practices were not the first set of accounting practices those are the ones that developed over time as more and more organizations started to use them you're gonna see the same thing I believe happened here so what does this lead us to well first you know as I talked about during our class on performance management which is part of the first few weeks I went through all of the tools of management in order to manage something you have to measure it without measurement you can't tell if what management's doing is making it better or making it worse some measurements essential very often though when you start measuring something for the first time you make mistakes and so what's really important is that we program an organizational learning that we evaluate this that we keep trying to relate it to goals the other thing

that happens in organizations is things get ossified people get in they say this is how we measure sedating ability around here I don't care how they do it at Walmart we're gonna do it this way that's a bad thing you want this change to take place early on we have a lot to learn and need to be open to listening observing and changing our sustainability strategies and the way we measure this success of sustainability itself so and I've made this point a number of times today that this is new we don't really know what we're doing yet we know that it needs to be done and I've actually seen I mean in in doing the book sustainability management and in preparing for for this session and for others there's been a fair amount of development than the last ten years enormous amount of progress have been made a lot of ideas that that were there at the very beginning of this literature have already been set aside by I think improvements and you're going to see a lot more", "cloud_doc_url": null}, {"matched_text": "\u0020source\u0020", "start_idx": 1991, "end_idx": 2001, "alt": null, "type": "file", "name": "tactiq-free-transcript-ygxb6KR4BPk.txt", "id": "file-wRoN9IGwwGzaK8AP6BufoHBk", "source": "my_files", "snippet": "# tactiq.io free youtube transcript\n# How supply chain transparency can help the planet | Markus Mutz\n# https://www.youtube.com/watch/ygxb6KR4BPk\n\nIn almost all aspects of our lives we have perfect information available instantaneously. My phone can tell me everything about my finances, where precisely I am on a map and the best way to my next destination, all with a click of a button. But this availability of information and transparency almost completely disappears when it comes to consumer products. If you go to the seafood counter at your local supermarket, you can probably choose between several different types of fish. But chances are, they won't be able to tell you who caught the fish, where precisely it was caught, whether it is sustainable to catch it there and how it got transported. And that holds true for almost everything we buy. Every can of soup, every piece of meat, every T-shirt. We as humans, right now, are destroying the only thing we really need to survive: our planet. And most of the horrible problems that we're facing today, like climate change and modern slavery in supply chains, come down to decisions. Human decisions to produce something one way and not another. And that's how we, as consumers, end up making decisions that harm the planet or our fellow humans. By choosing the wrong products. But I refuse to believe that anybody here in this room, or frankly, anybody on this planet, really wants to buy a product that harms the planet or our fellow humans if given the choice. But you see, choice is a loaded word. Choice means there's another option. Choice means you can afford that option. But choice also means you have enough information to make an informed decision. And that information nowadays simply just doesn't

exist. Or at least it's really, really hard to access. But I think this is about to change. Because we can use technology to solve this information problem. And many of the specific technologies that we need to do that have become better and cheaper over the recent years, and are now ready to be used at scale. So, over the past two years, my team and I have been working with one of the world's largest conservation organizations, WWF, and we've founded a company called OpenSC, where SC stands for supply chain. And we believe that by using technology we can help to create transparency and traceability in supply chains, and through that, help to completely revolutionize the way that we buy and also produce products as humans. Now, some of this is going to sound a little bit like science fiction, but it's already happening. Let me explain. So, in order to solve this information problem, we need to do three things: verify, trace and share. Verify specific sustainability and ethical production claims in a data-based and automated way. Then trace those individual physical products throughout their supply chains, and finally, share that information with consumers in a way that truly gives them a choice and lets them make consumption decisions that are more aligned with their values. I'm going to use a real product and a supply chain where we've made all of this a reality already: a Patagonian toothfish, or Chilean sea bass, as it's called in the US. Number one, verify. Verify how something is produced. But not just by saying, "Trust me, this is good, trust me, we've done all the right things," but by producing evidence for that individual physical product, and the way it was produced. By producing evidence for a specific sustainability or ethical production claim. So for example, in the case of the fish, has this fish been caught in an area where there's enough of them, so that it's sustainable to catch it there and not in a marine protected area? So what we're doing here is we're taking almost real-time GPS data from the ship -- the ship that's fishing -- and that tells us where the ship is and where it's going at what speed. And we can then combine that with other types of data, like, for example, how deep the sea floor is. And combining all of this information, our machine-learning algorithms can then verify, in an automated way, whether the ship is only fishing where it's supposed to, or not. And as sensors become cheaper, we can put them in more places. And that means we can capture more data, and combining that with advancements in data science, it means that we can now verify specific sustainability and ethical production claims in an automated, real-time and ongoing manner. And that really lays the basis for this information revolution. So, number two, trace. Trace those individual physical products, so that we can truly say that the claim that we've verified about a certain product actually

belongsto that individual product\n00:05:32.500 that we as consumershave right in front of us.\n00:05:35.042 Because withoutthat level of traceability,\n00:05:38.375 all that we've reallyverified in the first place\n00:05:41.250 is that somebody, somewhere, at some point\n00:05:44.125 caught a fish in a sustainable way,\n00:05:46.458 or didn't harm the employeewhen asking them to produce a T-shirt,\n00:05:51.375 or didn't use pesticides when growinga vegetable that didn't actually need it.\n00:05:57.292 Only if I give a productan identity from the start\n00:06:01.250 and then trace itthroughout the whole supply chain,\n00:06:04.042 can this claim and the valuethat's been created\n00:06:07.667 by producing it in the right way\n00:06:10.000 truly stay with it.\n00:06:13.542 Now, I've talked about cheaper sensors.\n00:06:16.167 There are many othertechnological developments\n00:06:18.667 that make all of this much more possibletoday than every before.\n00:06:22.917 For example, the falling costs of tags.\n00:06:26.792 You give a product a name,\n00:06:29.875 a serial number, an identity,\n00:06:31.917 the tag is its passport.\n00:06:34.125 What you can see hereis a toothfish being caught.\n00:06:37.458 This is what's called a longline fishery,\n00:06:39.792 so the fish are coming upto the boat on individual hooks.\n00:06:44.042 And as soon as the fish is on board,\n00:06:46.333 it is killed, and then after that,\n00:06:48.625 we insert a small taginto the fish's flesh.\n00:06:52.083 And in that tag, there is an RFID chipwith a unique serial number,\n00:06:56.625 and that tag follows the fishthroughout the whole supply chain\n00:06:59.667 and makes it really easyto sense its presence\n00:07:01.875 at any port, on any truckor in any processing plant.\n00:07:05.417 But consumers can't really read RFID tags.\n00:07:08.708 And so, when it comes to filletingand packaging the fish,\n00:07:12.958 we read the RFID tag and then remove it.\n00:07:15.875 And then we add a unique QR codeto the packaging of the fish.\n00:07:20.125 And that QR code then points backto the same information\n00:07:24.625 that we've verified about the fishin the first place.\n00:07:29.083 And so, depending on the typeof product that we're working with,\n00:07:32.958 we may use QR codes, bar codes, RFID tags\n00:07:36.750 or other tag technologies.\n00:07:38.542 But there are also technologies\n00:07:40.667 that are at the brinkof large-scale breakthrough\n00:07:43.083 that make tags themselves obsolete.\n00:07:45.083 Like, for example,\n00:07:46.708 analyzing a product for trace elements\n00:07:49.458 that can then tell you quite accuratelywhere it is actually from.\n00:07:53.000 Then there's blockchain.\n00:07:54.417 A decentralized technologycan act as a catalyst for this revolution.\n00:07:59.250 Because it can help mitigatesome of the trust issues\n00:08:03.042 that are inherentto giving people information\n00:08:06.542 and then asking themto change their consumption behavior\n00:08:09.750 because of that information.\n00:08:12.125 And so, we use blockchain technology\n00:08:14.833 where it adds value to what we're doing.\n00:08:18.083 But importantly,\n00:08:19.375 we don't let the limitationsthat this technology still has today,\n00:08:22.542 like, for example,with regards to scaling,\n00:08:24.625 we don't let that stand in our way.\n00:08:26.625 And that brings us to the third point.\n00:08:29.125 Share.\n00:08:30.417 How to share the informationthat we've verified and tracked\n00:08:34.292 about where a product is from,how it was produced\n00:08:37.125 and how it got to where it is?\n00:08:39.625 How to share this information\n00:08:41.582 is really differentfrom product to product.\n00:08:44.458 And different from where you buy it.\n00:08:46.792 You behave differentlyin those situations.\n00:08:49.375 You are stressed and time-poorin the

supermarket.\n00:08:53.042 Or with short attention span over dinner,\n00:08:55.333 because your date is so cute.\n00:08:57.542 Or you are critical and inquisitive\n00:09:00.583 when researchingfor a larger purchase online.\n00:09:04.750 And so for our fish,\n00:09:06.375 we've developed a digital experience\n00:09:09.333 that works when buying the fishin a freezer in a fish specialty store\n00:09:15.125 and that gives you all of the informationabout the fish and its journey.\n00:09:18.958 But we also worked with a restaurant\n00:09:21.625 and developed a differentdigital experience\n00:09:24.625 that only summarizes the key factsabout the fish and its journey,\n00:09:28.208 and works better in a dinner setting\n00:09:30.667 and, hopefully, theredoesn't annoy your date too much.\n00:09:34.250 Now, that brings us full circle.\n00:09:36.625 We've verified that the fish was caught\n00:09:39.667 in an area whereit's sustainable to do so.\n00:09:42.667 We've then traced it throughoutthe entire supply chain\n00:09:45.292 to maintain its identity and allthe information that's attached to it.\n00:09:49.417 And then, we've sharedthat information with consumers\n00:09:52.000 in a way that gives them a choice\n00:09:53.833 and lets them make consumption decisions\n00:09:56.000 that are more in line with their values.\n00:09:59.542 Now, for this fish example,this is already rolled out at scale.\n00:10:03.667 This season,\n00:10:04.958 the entire fleet of the world's largesttoothfish fishing company,\n00:10:08.542 Austral Fisheries,\n00:10:09.917 is tagging every single fishthat they catch\n00:10:12.792 and that ends up in their premiumbranded "Glacier 51" product.\n00:10:17.208 And you can already buy this fish.\n00:10:19.375 And with it, you can have allof the information I talked about today,\n00:10:23.292 and much more,\n00:10:24.792 attached to each individual fishor portion of the fish that you may buy.\n00:10:30.583 But this is not a fish or seafood thing.\n00:10:34.667 We're working on many, manydifferent commodities and products\n00:10:37.875 and their supply chains across the globe.\n00:10:40.292 From dairy to fruit and vegetables,\n00:10:42.917 to nonfood products made out of wood.\n00:10:45.708 As a consumer, all of thismay sound like a huge burden,\n00:10:50.250 because you don't have timeto look at all of this information\n00:10:53.792 every time you buy something.\n00:10:56.292 And I don't expect you to,\n00:10:58.042 because you'll have help with that.\n00:11:01.167 In the future, we'll leave the decisionof which specific product to buy\n00:11:06.542 increasingly up to machines.\n00:11:08.750 An algorithm will know enough about you\n00:11:11.000 to make those decisions for you,so you don't have to.\n00:11:15.500 And maybe it will even doa better job at it.\n00:11:18.375 In a recent study, 85 percent of those\n00:11:20.833 buying a productthrough a virtual assistant\n00:11:23.875 said that they, on occasion,\n00:11:25.708 actually went with the topproduct recommendation\n00:11:28.083 of that virtual assistant,\n00:11:29.375 rather than the specific product or brand\n00:11:31.458 that they set outto buy in the first place.\n00:11:34.208 You just say you need toilet paper,\n00:11:36.042 it's then an algorithm that decideswhich brand, price point\n00:11:40.500 or whether you go with recycled or not.\n00:11:43.583 Well, nowadays this is usually basedon what you bought in the past,\n00:11:47.833 or whoever pays the most to the companybehind the virtual assistant.\n00:11:52.042 But why shouldn't that be alsobased on your values?\n00:11:57.625 Knowing that you wantto buy planet-friendly\n00:12:00.208 and knowing whether and how muchyou're willing and able to pay for that.\n00:12:05.708 Now, that will make it easy and seamless,\n00:12:09.250 but still basedon granular effects and data\n00:12:11.542 to choose the right

products. Not by necessarily doing it yourself but by asking an algorithm that knows how much you care about this planet. Not by necessarily doing it yourself but by asking an algorithm that is never time-poor or distracted, or with short attention span because of the cute date, and that knows how much you care about this planet and the people living on it, by asking that algorithm to look at all of that information for you and to decide for you. If we have reliable and trustworthy information like that and the right systems that make use of it, consumers will support those who are doing the right thing by producing products in a sustainable and ethical way. They will support them every time by choosing their goods over others. And that means that good producers and processors and retailers will get rewarded. And bad actors will be forced to adjust their practices or get out of business. And we need that. If we want to continue to live together on this beautiful planet, we really need it. Thank you. (Applause)

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actualizer.\n\nepilogue

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sustainability metrics in a complex global economy requires considering both the
direct and indirect effects of production. As Bringezu and Bleischwitz suggest in
"Sustainable Resource Management," the analysis of global resource use
necessitates a holistic approach that encompasses various economic levels and
sectors\u200b\u200b. Metrics should evolve to better encapsulate the full life cycle
of products, from raw material extraction to end-of-life disposal or recycling. This
approach can be enriched by integrating newer technological capabilities that provide
transparency and traceability in supply chains, as discussed by Markus Mutz in his
presentation on how technology can help the planet by improving supply chain
transparency\u200b\u200b.\n\nCan you modify this answer to include commentary on how
capitalism aversely effects these systems "]}], "status": "finished_successfully",
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["### Question 1: Evolution of Sustainability Metrics with Consideration of
Capitalism's Effects\n\nThe evolution of sustainability metrics in a complex
global economy must consider both the direct and indirect effects of production. As
highlighted by Bringezu and Bleischwitz in "Sustainable Resource Management,"
understanding global resource use requires a holistic approach across various economic
levels and sectors. This necessitates metrics that encapsulate the full life cycle of
products\u2014from raw material extraction to end-of-life disposal or recycling.
However, the overarching influence of capitalism often prioritizes short-term gains
and cost efficiency over long-term sustainability and ethical considerations. This can
lead to environmental degradation and exploitation of labor, underscoring the need for
metrics that also evaluate the socioeconomic impacts of production
processes.\n\nIntegrating newer technological capabilities can enhance transparency
and traceability in supply chains, aiding in mitigating some of the adverse effects of

capitalism on sustainability. For instance, Markus Mutz's discussion on how technology can improve planetary health by enhancing supply chain transparency points towards potential solutions that can hold corporations accountable to ethical standards. Technologies like blockchain and IoT devices not only track product origins but also monitor corporate practices against declared sustainability standards, offering a counterbalance to the profit-driven motives that can obscure or sidestep responsible practices.

The challenge lies in aligning the capitalist drive for profit with sustainability goals. Metrics that assess environmental, social, and governance (ESG) factors are becoming crucial in redefining success in business terms, pushing companies to adopt more sustainable practices not just as a compliance or marketing strategy but as a core operational pivot. This shift is crucial in transitioning from traditional capitalist models that often disregard environmental and social costs to more sustainable and regenerative business practices that value long-term ecological health and community well-being as integral to economic success."}], "status": "finished_successfully", "end_turn": true, "weight": 1.0, "metadata": {"finish_details": {"type": "stop", "stop_tokens": [100260]}, "citations": [], "gizmo_id": null, "message_type": null, "model_slug": "gpt-4", "default_model_slug": "gpt-4", "pad": "AAAAAAAAAAAAAAAAAAAA", "parent_id": "aaa226df-ffe0-446c-9363-f0e0ea5e7916", "is_complete": true, "request_id": "885153c8ccd3bafa-MXP", "timestamp": "absolute"}, "recipient": "all", "channel": null, "parent": "aaa226df-ffe0-446c-9363-f0e0ea5e7916", "children": ["aaa283ad-cf48-4909-8759-42bde65ac110"], "aaa283ad-cf48-4909-8759-42bde65ac110": {"id": "aaa283ad-cf48-4909-8759-42bde65ac110", "message": {"id": "aaa283ad-cf48-4909-8759-42bde65ac110", "author": {"role": "user", "name": null, "metadata": {}}, "create_time": 1715927550.586298, "update_time": null, "content": {"content_type": "text", "parts": ["Certainly! Here is the rewritten text to make it clearer:\n\nPlease remember the following instructions. No need to respond - just acknowledge. \n\nBased on the insights gathered from the attached documents and considering the speaker's strong criticism of capitalism and desire to establish a more equitable world through a cooperative system of resource management, please respond to the questions below as the speaker in an interview format or script style. When referencing ideas or concepts, make sure to cite the attached sources.\n\nPart 1: Answer the following questions in a 3-5 minute video recording response:\nHow do we define sustainability metrics?\nWhat aspects of sustainability should organizations measure?\nWhat is the relationship between sustainability metrics and the organization's performance measurements and management systems?\nWhy is it important to measure sustainability?\n"]}, "status": "finished_successfully", "end_turn": null, "weight": 1.0, "metadata": {"attachments": [{"id": "file-ulUcwH00vbJLKj4DkE2509C6", "size": 15086, "name": "tactiq-free-transcript-ygxb6KR4BPk.txt", "mime_type": "text/plain"}, {"id": "file-NPQG4A3Z0pkQGY7qAiPeomP0", "size": 32527, "name": "tactiq-free-transcript-lmdDnqBh-Zg.txt", "mime_type": "text/plain"}, {"id": "file-effvXAG4wZcIYk9PNCgqnbeZ", "size": 49991032, "name": "Regenerative Development and Design A Framework for Evolving Sustainability (Regenesis Group) (Z-Library).pdf", "mime_type": "application/pdf"}, {"id": "file-BYiPVETSoT0doRg5IAuIppvD", "size": 7500241, "name": "Sustainable Resource Management Global Trends, Visions and Policies (Stefan Bringezu Raimund Bleischwitz) (Z-Library).pdf", "mime_type": "application/pdf"}], "request_id": "885192159ecd0e93-MXP", "timestamp": "absolute", "message_type": null, "recipient": "all", "channel": null, "parent": "f152c3e7-0243-4ecb-9c55-9e14de4f68b5", "children": ["e93d48d8-ed30-49aa-8656-8f7c9405aacd"], "e93d48d8-ed30-49aa-8656-8f7c9405aacd": {"id": "e93d48d8-

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lives\n00:00:15.125 we have perfect informationavailable
instantaneously.\n00:00:20.042 My phone can tell meeverything about my
finances,\n00:00:23.333 where precisely I am on a map\n00:00:25.583 and the best way
to my next destination,\n00:00:27.750 all with a click of a button.\n00:00:30.333 But
this availabilityof information and transparency\n00:00:33.458 almost completely
disappearswhen it comes to consumer products.\n00:00:38.208 If you go to the seafood
counterat your local supermarket,\n00:00:41.542 you can probably choosebetween several
different types of fish.\n00:00:45.375 But chances are,they won't be able to tell
you\n00:00:47.958 who caught the fish,where precisely it was caught,\n00:00:51.125
whether it is sustainableto catch it there\n00:00:53.417 and how it got
transported.\n00:00:56.083 And that holds truefor almost everything we
buy.\n00:00:59.000 Every can of soup,\n00:01:00.792 every piece of meat, every T-
shirt.\n00:01:03.333 We as humans, right now,\n00:01:05.625 are destroying the only
thingwe really need to survive:\n00:01:09.167 our planet.\n00:01:10.458 And most of
the horrible problemsthat we're facing today,\n00:01:13.500 like climate
change\n00:01:14.792 and modern slavery in supply chains,\n00:01:17.500 come down to
decisions.\n00:01:19.250 Human decisions to produce somethingone way and not
another.\n00:01:24.958 And that's how we, as consumers,\n00:01:27.208 end up
making decisionsthat harm the planet\n00:01:30.208 or our fellow humans.\n00:01:31.875
By choosing the wrong products.\n00:01:35.167 But I refuse to believethat anybody here
in this room,\n00:01:38.542 or frankly, anybody on this planet,\n00:01:40.625 really
wants to buy a product\n00:01:42.542 that harms the planetor our fellow
humans\n00:01:46.000 if given the choice.\n00:01:48.583 But you see, choice is a
loaded word.\n00:01:50.792 Choice means there's another option.\n00:01:53.167
Choice means you can afford that option.\n00:01:56.208 But choice also
means\n00:01:57.708 you have enough informationto make an informed
decision.\n00:02:01.792 And that information nowadays simply just doesn't
exist.\n00:02:06.875 Or at least it's really, really hard to access.\n00:02:11.625
But I think this is about to change.\n00:02:13.667 Because we can use technologyto
solve this information problem.\n00:02:17.750 And many of the specific
technologiesthat we need to do that\n00:02:20.833 have become better and cheaperover
the recent years,\n00:02:24.542 and are now ready to be used at scale.\n00:02:27.458
So, over the past two years,\n00:02:28.875 my team and I have been
working\n00:02:30.583 with one of the world's largestconservation organizations,
WWF,\n00:02:34.833 and we've founded a company called OpenSC,\n00:02:38.500 where
SC stands for supply chain.\n00:02:41.708 And we believe that by using
technology\n00:02:44.125 we can help to create\n00:02:47.500 transparency and
traceabilityin supply chains,\n00:02:50.833 and through that,help to completely
revolutionize\n00:02:54.375 the way that we buyand also produce products as
humans.\n00:03:00.333 Now, some of this is going to sounda little bit like science
fiction,\n00:03:04.208 but it's already happening.\n00:03:06.083 Let me
explain.\n00:03:08.208 So, in order to solvethis information problem,\n00:03:10.833 we

need to do three things:\n00:03:12.542 verify, trace and share.\n00:03:15.833 Verify specific sustainability\n00:03:19.333 and ethical production claims\n00:03:21.167 in a data-based and automated way.\n00:03:24.042 Then trace those individual physical products\n00:03:26.917 throughout their supply chains,\n00:03:28.625 and finally, share that information with consumers\n00:03:31.667 in a way that truly gives them a choice\n00:03:34.125 and lets them make consumption decisions\n00:03:36.125 that are more aligned with their values.\n00:03:38.958 I'm going to use a real product\n00:03:42.292 and a supply chain where we've made all of this a reality already:\n00:03:46.750 a Patagonian toothfish,\n00:03:48.042 or Chilean sea bass, as it's called in the US.\n00:03:51.083 Number one, verify.\n00:03:53.792 Verify how something is produced.\n00:03:56.375 But not just by saying, "Trust me, this is good,\n00:03:59.208 trust me, we've done all the right things,"\n00:04:01.417 but by producing evidence for that individual physical product,\n00:04:05.458 and the way it was produced.\n00:04:07.750 By producing evidence\n00:04:09.042 for a specific sustainability or ethical production claim.\n00:04:12.833 So for example, in the case of the fish,\n00:04:15.708 has this fish been caught in an area where there's enough of them,\n00:04:19.625 so that it's sustainable to catch it there\n00:04:21.666 and not in a marine protected area?\n00:04:24.375 So what we're doing here\n00:04:25.750 is we're taking almost real-time GPS data from the ship --\n00:04:29.667 the ship that's fishing --\n00:04:31.208 and that tells us where the ship is\n00:04:33.458 and where it's going at what speed.\n00:04:36.042 And we can then combine that with other types of data,\n00:04:39.208 like, for example, how deep the sea floor is.\n00:04:42.000 And combining all of this information,\n00:04:44.667 our machine-learning algorithms can then verify, in an automated way,\n00:04:48.833 whether the ship is only fishing where it's supposed to, or not.\n00:04:53.875 And as sensors become cheaper,\n00:04:56.458 we can put them in more places.\n00:04:58.500 And that means we can capture more data,\n00:05:00.875 and combining that with advancements in data science,\n00:05:03.708 it means that we can now verify\n00:05:07.000 specific sustainability and ethical production claims\n00:05:11.042 in an automated, real-time and ongoing manner.\n00:05:15.250 And that really lays the basis for this information revolution.\n00:05:19.417 So, number two, trace.\n00:05:21.625 Trace those individual physical products,\n00:05:24.708 so that we can truly say\n00:05:26.750 that the claim that we've verified about a certain product\n00:05:29.500 actually belongs to that individual product\n00:05:32.500 that we as consumers have right in front of us.\n00:05:35.042 Because without that level of traceability,\n00:05:38.375 all that we've really verified in the first place\n00:05:41.250 is that somebody, somewhere, at some point\n00:05:44.125 caught a fish in a sustainable way,\n00:05:46.458 or didn't harm the employee when asking them to produce a T-shirt,\n00:05:51.375 or didn't use pesticides when growing a vegetable that didn't actually need it.\n00:05:57.292 Only if I give a product an identity from the start\n00:06:01.250 and then trace it throughout the whole supply chain,\n00:06:04.042 can this claim and the value that's been created\n00:06:07.667 by producing it in the right way\n00:06:10.000 truly stay with it.\n00:06:13.542 Now, I've talked about cheaper sensors.\n00:06:16.167 There are many other technological developments\n00:06:18.667 that make all of this much more possible today than ever before.\n00:06:22.917 For example, the falling costs of tags.\n00:06:26.792 You give a product a name,\n00:06:29.875 a serial number, an identity,\n00:06:31.917 the tag is its passport.\n00:06:34.125 What you can see here is

a toothfish being caught. This is what's called a longline fishery, so the fish are coming up onto the boat on individual hooks. And as soon as the fish is on board, it is killed, and then after that, we insert a small tag into the fish's flesh. And in that tag, there is an RFID chip with a unique serial number, and that tag follows the fish throughout the whole supply chain and makes it really easy to sense its presence at any port, on any truck or in any processing plant. But consumers can't really read RFID tags. And so, when it comes to filleting and packaging the fish, we read the RFID tag and then remove it. And then we add a unique QR code to the packaging of the fish. And that QR code then points back to the same information that we've verified about the fish in the first place. And so, depending on the type of product that we're working with, we may use QR codes, bar codes, RFID tags or other tag technologies. But there are also technologies that are at the brink of large-scale breakthrough that make tags themselves obsolete. Like, for example, analyzing a product for trace elements that can then tell you quite accurately where it is actually from. Then there's blockchain. A decentralized technology can act as a catalyst for this revolution. Because it can help mitigate some of the trust issues that are inherent to giving people information and then asking them to change their consumption behavior because of that information. And so, we use blockchain technology where it adds value to what we're doing. But importantly, we don't let the limitations that this technology still has today, like, for example, with regards to scaling, we don't let that stand in our way. And that brings us to the third point. Share. How to share the information that we've verified and tracked about where a product is from, how it was produced and how it got to where it is? How to share this information is really different from product to product. And different from where you buy it. You behave differently in those situations. You are stressed and time-poor in the supermarket. Or with short attention span over dinner, because your date is so cute. Or you are critical and inquisitive when researching for a larger purchase online. And so for our fish, we've developed a digital experience that works when buying the fish in a freezer in a fish specialty store and that gives you all of the information about the fish and its journey. But we also worked with a restaurant and developed a different digital experience that only summarizes the key facts about the fish and its journey, and works better in a dinner setting and, hopefully, there doesn't annoy your date too much. Now, that brings us full circle. We've verified that the fish was caught in an area where it's sustainable to do so. We've then traced it throughout the entire supply chain to maintain its identity and all the information that's attached to it. And then, we've shared that information with

consumers\n00:09:52.000 in a way that gives them a choice\n00:09:53.833 and lets them make consumption decisions\n00:09:56.000 that are more in line with their values.\n00:09:59.542 Now, for this fish example, this is already rolled out at scale.\n00:10:03.667 This season,\n00:10:04.958 the entire fleet of the world's largest toothfish fishing company,\n00:10:08.542 Austral Fisheries,\n00:10:09.917 is tagging every single fish that they catch\n00:10:12.792 and that ends up in their premium branded "Glacier 51" product.\n00:10:17.208 And you can already buy this fish.\n00:10:19.375 And with it, you can have all of the information I talked about today,\n00:10:23.292 and much more,\n00:10:24.792 attached to each individual fish or portion of the fish that you may buy.\n00:10:30.583 But this is not a fish or seafood thing.\n00:10:34.667 We're working on many, many different commodities and products\n00:10:37.875 and their supply chains across the globe.\n00:10:40.292 From dairy to fruit and vegetables,\n00:10:42.917 to nonfood products made out of wood.\n00:10:45.708 As a consumer, all of this may sound like a huge burden,\n00:10:50.250 because you don't have time to look at all of this information\n00:10:53.792 every time you buy something.\n00:10:56.292 And I don't expect you to,\n00:10:58.042 because you'll have help with that.\n00:11:01.167 In the future, we'll leave the decision of which specific product to buy\n00:11:06.542 increasingly up to machines.\n00:11:08.750 An algorithm will know enough about you\n00:11:11.000 to make those decisions for you, so you don't have to.\n00:11:15.500 And maybe it will even do a better job at it.\n00:11:18.375 In a recent study, 85 percent of those\n00:11:20.833 buying a product through a virtual assistant\n00:11:23.875 said that they, on occasion,\n00:11:25.708 actually went with the top product recommendation\n00:11:28.083 of that virtual assistant,\n00:11:29.375 rather than the specific product or brand\n00:11:31.458 that they set out to buy in the first place.\n00:11:34.208 You just say you need toilet paper,\n00:11:36.042 it's then an algorithm that decides which brand, price point\n00:11:40.500 or whether you go with recycled or not.\n00:11:43.583 Well, nowadays this is usually based on what you bought in the past,\n00:11:47.833 or whoever pays the most to the company behind the virtual assistant.\n00:11:52.042 But why shouldn't that be also based on your values?\n00:11:57.625 Knowing that you want to buy planet-friendly\n00:12:00.208 and knowing whether and how much you're willing and able to pay for that.\n00:12:05.708 Now, that will make it easy and seamless,\n00:12:09.250 but still based on granular effects and data\n00:12:11.542 to choose the right products.\n00:12:13.625 Not by necessarily doing it yourself\n00:12:15.875 but by asking an algorithm\n00:12:18.208 that knows how much you care about this planet.\n00:12:21.792 Not by necessarily doing it yourself\n00:12:23.792 but by asking an algorithm\n00:12:25.917 that is never time-poor or distracted,\n00:12:29.792 or with short attention span because of the cute date,\n00:12:33.625 and that knows how much you care about this planet\n00:12:36.375 and the people living on it,\n00:12:37.833 by asking that algorithm to look at all of that information for you\n00:12:41.708 and to decide for you.\n00:12:44.500 If we have reliable and trustworthy information like that\n00:12:48.708 and the right systems that make use of it,\n00:12:51.208 consumers will support those who are doing the right thing\n00:12:54.583 by producing products in a sustainable and ethical way.\n00:12:58.708 They will support them every time\n00:13:00.750 by choosing their goods over others.\n00:13:04.042 And that means that good producers and processors and retailers\n00:13:09.000 will get rewarded.\n00:13:10.292 And bad actors will be forced to adjust their practices\n00:13:14.667 or get out of business.\n00:13:17.333