Food Sustainability: Virtual Living Lab Helps to Identify the Important Narrative and Simplify the Complex

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Abstract

A direct consequence of the heightened interest in climate and environmental sustainability are food diets that are environmentally friendly. For some, sustainable food production has societal security concerns related to ensuring a resilient supply chain. For others, healthy foods and diets have become more important as well-being moved up the agenda during the pandemic. This research employs state-of-the-art communication science to compare the food sustainability narrative in Japan and the UK, where the nature of what is currently important differs, in terms of content and focus, regarding this global issue. It analyses all open digital media to determine what is important to people and likely to affect their behaviour. Since emotions precede action, it is critical to track both content and tone if one is to be able to leverage and purposefully engage with on-going narratives of societal concern. Even though interconnectivity of people is greater than globalization, for transformational behaviour to be affected there is an increasing need to leverage both ethics and culture.

Keywords

Big Data, AI, Narratives, Food Sustainability, Engagement, Transformation, Culture, Health

1. Introduction

Since the onset of Covid-19, people around the world have been on an unpredictable "lifestyle rollercoaster", with unprecedented change. We were constrained through with fear of infection; our systems and leaders were tested to an extreme

and health and well-being took on more importance. Such was the breadth and immediacy of change for many that things that were "norms" changed, as did our personal expectations of life satisfaction (Beaumont & Ricketts, 2020).

As healthy lifestyle choices become increasingly important, social sharing of new ideas and practices will have increasing potential to drive major behavioural shifts. Narratives and social media are integral parts of today's connected experiences and can shape our world. Context and clarity are foundations of strong, positive, leadership during a period of unprecedented change and volatility. Leadership demands that there is competence in complexity that can simplify, providing a culture for growth, change and social innovation.

Nobel Laurate, Shiller (2019) eloquently showed that the public's subjective perceptions can shape economic trends. He called this narrative economics. Narratives should be seen as complex, organic structures, with unique behaviours and characteristics. Overtime narratives transform in response to new debate, new voices, new events, and/or new communications. Much of Schiller's analyses relate to analogue "real world" examples, yet the term viral marketing has been used since the turn of the millennium, with interconnectivity also acting as a driver of behaviour. Social sharing of new ideas is now magnified by social media. Popular stories affect individual and community behavior. Recognising this social "network" effect will improve decision-making by addressing what people feel is important to them, with the ability to provide the relevant content, and appropriate tone, enhancing and sustaining the on-going narrative.

To deal effectively with the future, we must acquire skills to manage two equally inescapable situations: uncertainty and risk. For policy makers, it is more complex still with the "right" policy needing the "right" message to multiple constituencies, within the "right" context. The complexity of change is increased by the growing interdependence of our world. With the pandemic, our world was seen to be friable, unequal, and extractive (RSA, 2022). Leaders and institutions were found to be lacking as uncoordinated responses and changing priorities compounded the fear of the unknown. Going forward there is a need for greater clarity and intention. Such purpose can be enhanced by design thinking. Design Thinkers are leaders who couple the skills of a designer with conventional corporate strategy to drive the open and unashamed innovation that revolutionizes everything from products to processes.

"*A lack of faith in societal institutions triggered by economic anxiety, disinformation, mass-class divide, and a failure of leadership has brought us to where we are today, deeply and dangerously polarised.*"

(Edelman Trust Barometer, 2023)

Trust is more paramount, as it is amplified in a social setting, and more than ever people find trusted voices in their networks. Social mobilization is enhanced by growth. Especially for the rising middle class in emerging markets, people who are empowered by digital access, and the legitimacy of the status-quo can only be maintained by performance. The pandemic showed us much was broken and there is a need to reset. In both the UK and Japan, inequalities

were heightened, both economic and in respect of diversity. The goal going forward should not be simply safe, but to look at ways of regeneration that makes society better. Our analyses show a need to understand and respond to fundamental human and societal needs, which, after covid, now have a far greater immediate concern. The focus of this paper is food sustainability which has become increasingly topical within the broader sustainability discussion. That said, for some it was food safety (Karaman, 2020) that went up the agenda during the pandemic. Social media and social sharing have transformed how our connected world has become entangled. This contrasts sharply with the largely top-down and Western attitude regarding traditional, intrusive mass-media.

2. Virtual Living Lab

Living Labs have become an extremely popular research approach to open innovation and to help social entrepreneurism, where the focus is on user-driven and co-creative innovation (Bergvall-Kåreborn et al., 2010; Mulder, 2012). The analyses presented in this paper are similarly people/user orientated but are based on their digital conversations/social media. The ubiquity of the internet and mobility have augmented the significance of social media (first coined in 1994 by two of the authors and the founders of Significance Systems, Darrell Berry and John Ricketts (Bercovici, 2010)), and social sharing in effecting change. It is common that in enterprise communications planning the objective is to "create engagement". However, it is much more effective to recognize that the world is already rich with engagement "in the wild". Social media simply constitutes a regular update on an already formed worldview, itself informed by the perceived authority of other sources. Therefore, measuring and interpreting social and linguistic signals by accessing openly available online content is naturally more directly reflective of human behavior (Beaumont et al., 2021).

Thus, in a period of renewal, the character of any LifeStyle by Design initiative, to facilitate social entrepreneurism, would need to be:

✓ Progressive (a questioning disruptive innovator from "what is").
✓ Collaborative (brings multidisciplinary skills and melds a team to holistically explore "*what can be*").
✓ Authoritative (focused with access to execute material and readily scalable change).

The University of Tokyo's LifeStyle by Design Research Unit chose Significance System's proven and proprietary platform earth.ai to create a Virtual Living Lab (VLL).

It is a proven predictive insight engine, which captures and synthesizes internet structure in an unbiased way. The process takes all open data online as contending for consideration. It analyses vast amounts of unstructured raw data from across the internet to model human behavioural interactions with content, to present an authentic, nuanced view of the emotions that drive mass behaviour. This involves the analyses millions of behavioural interactions with content, to model human interaction, and to provide an objective read on engage-

ment, media power, and the authentic, emotional drivers of (new) behaviour. It can sense and quantify over 400 named emotional states, in response to any story. The process considers all open data online as contending for consideration. For practical expedience, it follows a computational-reductionist approach applying multiple layers of processing to identify and extract human-meaningful social-signaling structure within the petabytes of raw topical data available to the first stages of our process. This process dramatically reduces the volume of data to which they then apply computationally intensive processes such as detailed grammatical analysis. Understanding of the emotional depth of the narrative, allows for better understanding and connection with people, and focus on leveraging the strong story. In this way, the internet is leveraged as a massive behavioral test, where the act of measurement does not itself create bias. As such, it provides a significant development in the goal of improving decision-making when compared with popular social value monitors, which the first author was an architect.[1,2]

A key element of the analyses is to create a narrative landscape and classify their engagement (**Figure 1**) to affect behaviour. Not all narratives are equally important. Generally, those narratives with the most utility are either timeless or transformational. Most narratives have little impact being transient/white noise, which can create confusion if not identified and eliminated.

Humans have always been social animals. Technology empowering social media is transforming humanity. It is creating more populism, which is polarising discussion. In fact, populists are often superficial and often more interested in headlines and being disruptive. Increasing concern among the complexity is misinformation, disinformation, which paradoxically create a lack of knowledge. So, with complexity one must also consider accuracy. They are interwoven. To simplify the complex, we do not just talk about headlines, we cannot dumb it
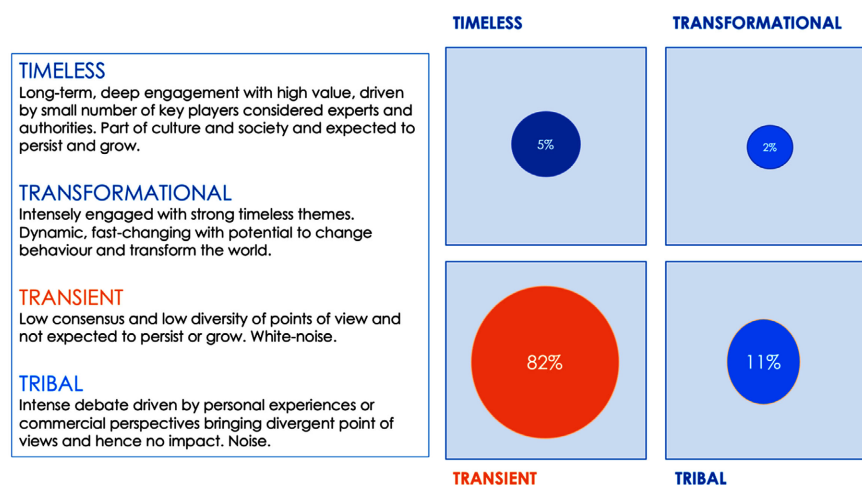

TIMELESS
Long-term, deep engagement with high value, driven by small number of key players considered experts and authorities. Part of culture and society and expected to persist and grow.

TRANSFORMATIONAL
Intensely engaged with strong timeless themes. Dynamic, fast-changing with potential to change behaviour and transform the world.

TRANSIENT
Low consensus and low diversity of points of view and not expected to persist or grow. White-noise.

TRIBAL
Intense debate driven by personal experiences or commercial perspectives bringing divergent point of views and hence no impact. Noise.

TIMELESS 5%
TRANSFORMATIONAL 2%
TRANSIENT 82%
TRIBAL 11%

Figure 1. Narrative engagement classification ©Significance Systems (used with permission).

[1]Japan Insights 1993-2002, Infoplan.
[2]Eye on Asia 2003-2010, Grey Global Group.

down. We have to provide clarity. We need to dig beyond the headline. We need to think about things in terms of convergent thinking and divergent thinking. The process of figuring out concrete solutions is the convergence, but we need to think broader and explore multiple possible solutions in order to create. Indeed, people can benefit by being members of multiple, worldly, societies that enrich our life experiences. Increasingly we will embrace complexity because of the richness it provides to broaden and deepen experiences. Geography is no longer a border to enlightenment. Broader understanding (Hofstede, 2001) can fuel creativity, but the shared understanding is a strong foundation to progress. Criticism can be replaced shared aspirations and a new vocabulary can facilitate a collaboration by removing historical bias. The pandemic has heightened inequality as do unreliable narratives.

Consequently, with our Big Data-based, AI communications insight, it is practically expedient (Beaumont et al., 2022) to:

✓ Objectively explore these narratives to understand the drivers and dynamics of changing behavior and consensus.

✓ Explore what people value and feel is important.

✓ Determine how new solutions can be effectively introduced to create new and better behaviours.

The LifeStyle by Design Research Unit initiated an investigation, in June 2019, of some narratives that aligned with the Unit's mission to explore a holistic lifestyle design that can contribute to improved personal well-being and life satisfaction. The original premise was to understand what people wanted and enable innovation by magnifying on-going narratives. The ten waves of research have taken place during a period of unique, fundamental change and uncertainty. Some thirty significant, lifestyle narratives are now regularly tracked in both Japan and the UK. To develop the narrative landscapes, we look at all online sources, in Japan and the UK respectively, up to the date of the research wave. There is no time window. So, depending on the specific narrative, which self organises, it could be dominated by recent content…or not.

3. Key Findings

The food sustainability (食のサステナビリティ) narrative in Japan is tribal in December 2022. Overall, tribal narratives represent eleven percent of all narratives (Figure 1). They are characterised by intense debate. However, by their nature, they are narrowcast, and the debate often has no lasting impact. Often, they are driven by personal experiences or commercial perspectives, bringing divergent POVs. That said, it is easy to be a participant, but far more difficult to be a significant player or leader in such narratives. Understanding of the structure of the narrative, offers orientation on the long-term value of engagement, and the way to engage, to achieve Communication Power.

Since emotion precedes action, it is important to probe this as well as the key content that drives engagement around the narrative. The affect orientation

(Figure 2) is active and positive confirming the food sustainability has momentum. Most narratives are neutral creating no response. The emotional response (Figure 3) is simple and positive as the narrative is associated with cheerfulness bringing joy.
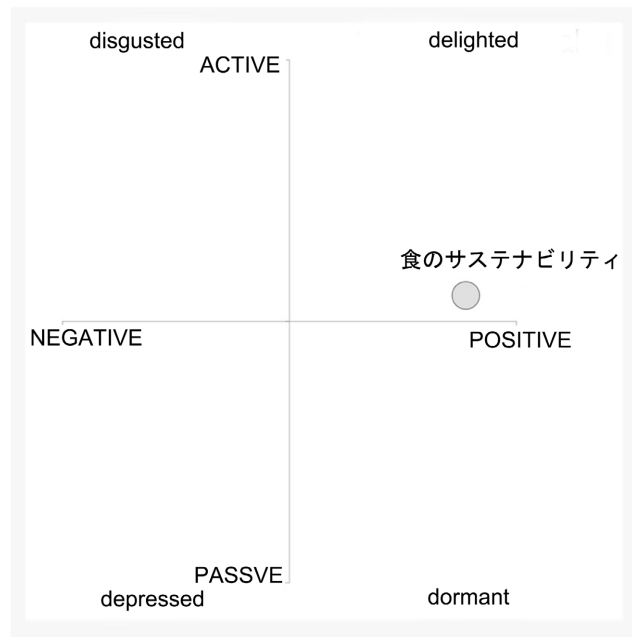

Figure 2. Affect orientation of food sustainability narrative in Japan (December 2022).
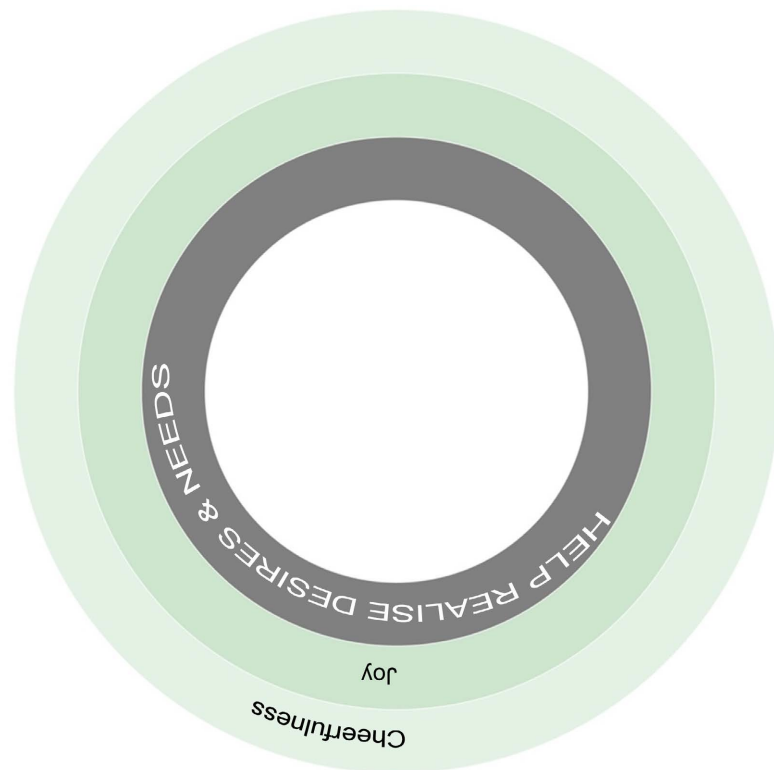

Figure 3. Emotional response of food sustainability narrative in Japan (December 2022).

Probing what media is driving the category, it is possible ranks media voices (Figure 4) according to their power to lead debate and shape perception, and drive market performance in terms of preference and desirability. This is not a volumetric measure. Commonly the most popular media are not the ones with the strongest impact on topical or social engagement. RED U-35 (Ryorinin's Emerging Dream U-35) is the most important media driving the food sustainability narrative. Others reflect a corporate presence; with Kikkoman, Nicheiri, Ajinomoto, …, included. Figure 5 provides a visual exploration of the key media in Japan.

In the UK, at the same time, the food sustainability narrative was timeless (Figure 1) with a higher content efficiency compared to Japan. The key media had a greater consumer focus. Its' affect orientation also differed from Japan, being positive but erring to being passive, as economic household concerns and food availability were beginning to be felt. Narratives such as this, which are driven by a passive, positive engagement, are often long-lived, but are more easily vulnerable to apathy and unanticipated disruption. They may not have the strength to survive rapid transformative change. The frustration felt is reflected in the emotional response (Figure 6) which has anger balanced with some positive expectations for the future. The passivity associated with narrative is illustrated by the fact that the emotions found are weak (illustrated by relatively pale colouring in Figure 7). The greater consumer orientation is illustrated in Figure 7. The stories driving engagement also reflect the huge expectation of sustainability improvement by discussing agriculture and food.
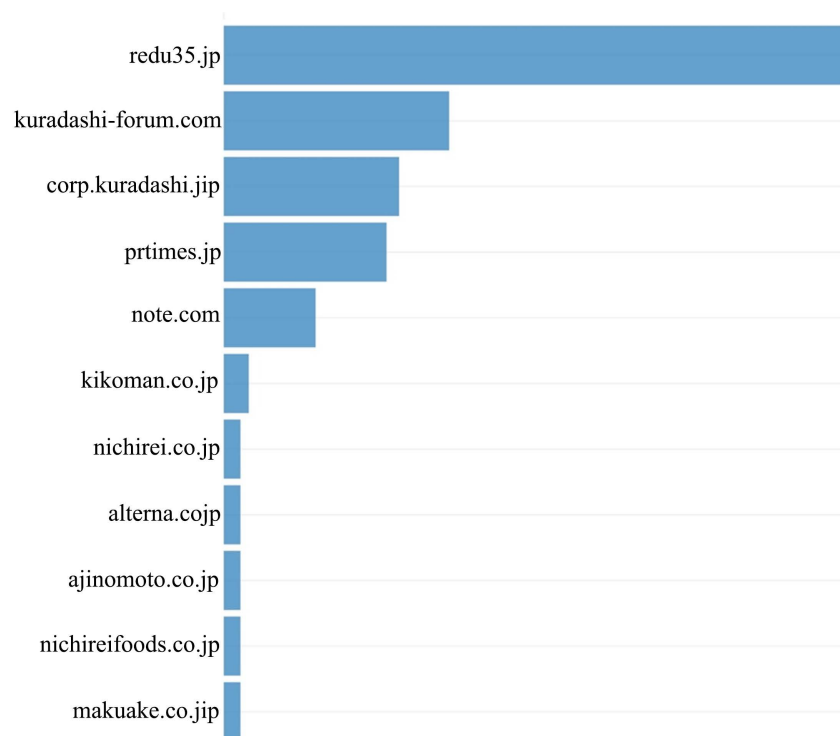

Figure 4. Media driving food sustainability narrative in Japan (December 2022).

Figure 5. Exploration of media driving food sustainability narrative in Japan (December 2022).

Figure 6. Emotional response of food sustainability narrative in the UK (December 2022).
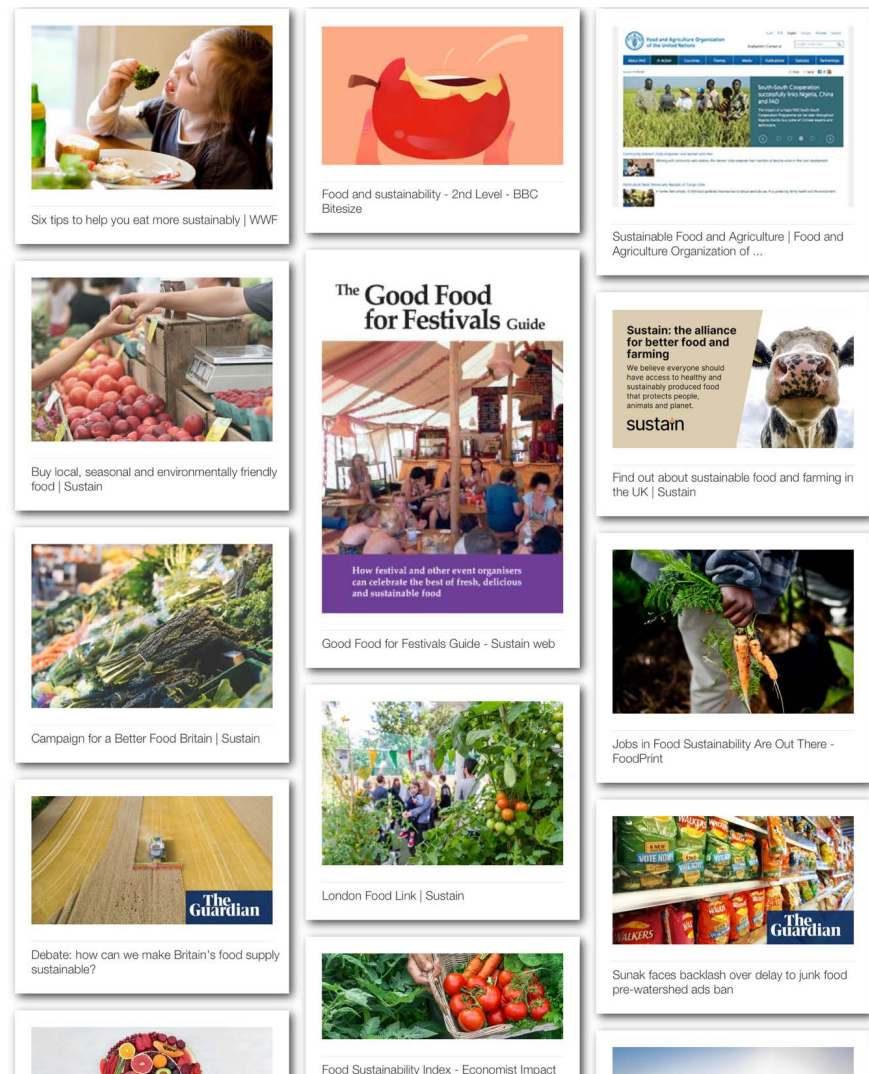
Figure 7. Exploration of media driving food sustainability narrative in the UK (December 2022).

Aligned to the food sustainability narrative, we see that both personal nutrition balance (個人の栄養バランス) and healthy food (ヘルシーフード) are transformational narratives, in Japan. In contrast, in the UK environmentally friendly food and carbon efficient foods are both transient narratives. However, along with the food sustainability narrative healthy food, plant-based food and animal-based food narratives are all timeless, while personal nutritional balance is transient and not currently in the vernacular.

Animal-based food, in the UK, has content which is relatively efficient. There is some understanding, and existing content provides reasonable definition. Whilst we can learn from existing content creation, there is also space for novelty that can capitalise on the strong pre-existing engagement. However, it is driven by a passive and negative engagement. As such, it is unlikely to inspire engagement. That said, the tone of some of the influential stories fueling the narrative are driving anticipation by setting new expectations in food supply and

production; cf. the importance of plant-based foods. This contrasts with narratives that simply provide updated facts.

In contrast to the animal-based food narrative, in the UK, the timeless, plant-based narrative has an active and positive affect orientation, which is creating momentum. Powered by enthusiasm and energy with expectations, such narratives exhibit growth and adaptation, and drive behaviour. The media driving the plant-based narrative has a consumer orientation, rather than a B2B development focus. The Media Power index ranks media voices according to their power to lead debate and shape feeling, and drive market performance in terms of preference and desirability. Significantly, video is playing an increasingly important pedagogic role in driving interest in the narrative. Furthermore, to engage with the existing narrative, it is important to focus with a singular and objective health stance. The video (Figure 8; available on YouTube) shows hospitals with 100 percent Plant-based menus; focusing on the nutrition facts. Other powerful content consider such issues as dental health; asthma and eczema treatment; cutting risks of "silent killer" in men; …, as well as reducing racial health disparities. Such specific content creates a credibility and relevance, which is supported by more general and practical content providing recipes and meals.

Food sustainability is increasingly moving up the agenda of both the public and private sector, as well as influencing the behaviour of individuals. For some the discussion is relatively embryonic and creating a reassessment of how environmental concerns can be addressed. For others it is affecting their behaviour, a characteristic which is more mature in the UK than in Japan currently since the orientation is more B2C than B2B.

That said, a bigger driver of behavioural change is the broader acceptance of the need for healthy food and a nutritious diet. One may hypothesise that this personal consideration is a stronger and more permanent driver, in the long, than food sustainability considerations in effecting a groundswell of behavioural change. Environmental behaviour is, in the steady-state, reflective of changing

Figure 8. Important content of the plant based food narrative in the UK (December 2022).

laws and constraints on packaging and waste disposal rather than public opinion. That said, the healthier orientation of both plant-based foods and local (fresh) produce do explicitly help climate considerations by reducing emissions. Monitoring the current narrative content and enagement of these fundamental but complex issues can more effectively and efficiently improve decision-making and effect change, when compared with traditional research. Focusing on what is important can ensure both decisiveness and clarity.

4. Implications

Since people find trusted voices in their networks, the analyses described in this paper prove how one can "engage with engagement" and be part of the ongoing story rather than try to dominate it from outside, which has been the traditional mass communication norm of intrusion. Indeed, it is now possible to go beyond traditional media planning considerations and focus on the strong narrative. This is not only cheaper but also more likely to have a material impact. Simply:

✓ Know what to say
✓ How to say it
✓ Who to say it to
✓ Where to say it

Transformational times bring heightened uncertainty and risk. As such, trust is critical to empower change. When times are uncertain and media is unregulated, or new, then trust is harder to create. All businesses have access to the same information. What sorts the winners from the losers is not access to information but use of information. The current paradox is with more information, readily available, people do not feel better informed rather there is an increasing concern about what information is correct. Trust comes from meaningful and relevant narratves, facilitated by simplifying the complexing a compelling and inspirational manner. Not just facts! People have always trusted well told stories that are meaningful to them. Going forward creating trusted narratives will define future success as we move into an uncertain future. Social media and social sharing have enabled narratives to readily go viral and influence people's attitudes and behaviour, more than at any past time. Winners will create their own futures. Fortunately, one can track narratives, with distinct characteristics and expressions, so that one can engage with existing engagement/significant stories, in a relevant and credible way. With trust in traditional institutions at an all-time low, the ability to connect and communicate new ways of healthy living, to address food sustainability and broader social challenges, by understanding what is important to people is critical to bring about behavioral change, at scale. Appreciating what is important to people aids leaders, educators and policy makers to engage with their different constituencies in a meaningful and effective manner. What is vital, especially, during changing times, is a need to ensure that your story maintains relevance in both content and emotion, so that your message is embraced.

The interconnectivity of people, from anywhere is a bigger story than globalisation. Ideas can come from anywhere. Thankfully, globalisation does not massify humanity, rather it makes it an imperative to investigate what is locally important. Comparing Japan and the UK proves culture comes more to the fore, influencing behaviour. Thus, any global messaging demands local nuances if they are to engage and move people. The imperative to communicate and really connect is to ensure that the complex is simplified. Since most narratives are Transient this is also indicative that not all screen time/social media is productive time. Creating healthy, productive social media user experiences has become topical given the increasing reliance of social media and social sharing due to social distancing. As people evolve from the pandemic, they are looking forward to experimenting with newer activities. The pandemic has brought forward people's expectations in technology and innovation, as well as a desire to streamline their lives. Companies that recognize the new nature of convenience and community will embrace mobility, contactless experiences, and social sharing to create dynamic, future-forward behaviours.

5. Conclusion

It has proved a rich and fertile time to track what people think and feel is important to them. The pandemic has also illustrated that any communication must be inclusive and understood and embraced by multiple constituencies to have a coherent effect. These are complex issues that are prioritized in different ways, by groups with differing agendas and discussions. They are increasingly influenced by, and need, to take account of ethics and culture if the necessary transformational change is to regenerate societies around the world.

We contend that social innovation/entrepreneurism, around sustainability, will be fostered by bottom-up approaches, with a view to quickly expand. This will be helped by clear and motivating narratives in tune with ethics and culture. This is an ideal adjunct to the global SDG pathways. As we look to the future, we should support the things that bind us together, and invest in our communities at scale. Narratives can create the energy. Narratives change the world. So your narrative can change your world. There has never been a greater need to help create social innovation creating sustainable value for all stakeholders. A key element going forward will be to have sustainability as a central theme, but if we empower individuals they can go beyond to personally thrive, as seen by the enjoyment and health associated with an immersion in on-going food narratives.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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