

# The interface between strategic sustainability & design strategy, explored through a case study of

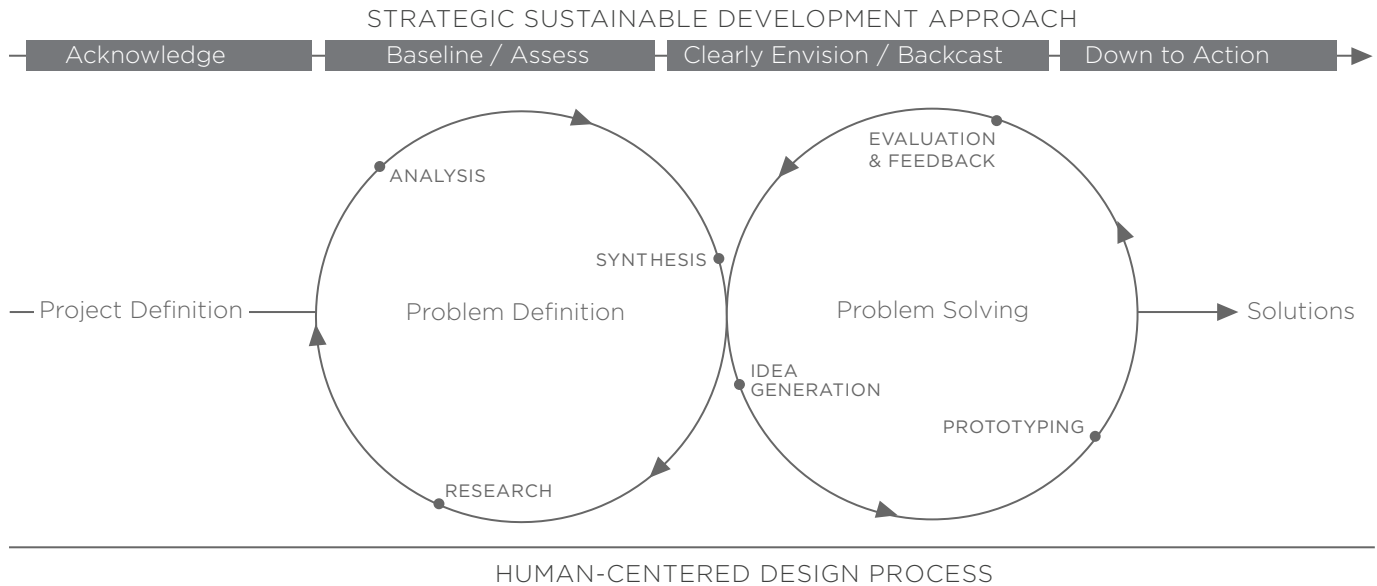


Design strategy focuses on generating new product, service, or organizational concepts inspired by human needs and organizational understanding. A systems-based approach to strategic sustainability outlined by Robért et al may provide design consultants and teams with a way to approach this activity in a manner that will provide businesses with new concepts that are part of a flexible platform that will fulfill human, business, and sustainability needs.

This report explores the application of this approach through a hypothetical case study of TiVo.

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# Strategic Sustainability & Human-centered Design



## Strategic sustainability

When planning in a complex system, it is useful to use a systems approach based on work by the Natural Step, and outlined by Rob ert et al<sup>1</sup>, who have defined 4 system conditions for sustainability: *“In a sustainable society, nature is not subject to systematically increasing...*

- 1...concentrations of substances extracted from the Earth’s crust,
- 2...concentrations of substances produced by society,
- 3...degradation by physical means and, in that society. . .
- 4...people are not subject to conditions that systematically undermine their capacity to meet their needs.<sup>2</sup>

The general approach outlined consists of 4 stages<sup>1</sup>:

- Awareness* – Where an understanding of the business and sustainability is generated
- Baseline* – Assessing the current “flows and practices” that are sustainability issues
- Visioning* – Backcasting solutions based on the outlined principles of sustainability
- Setting and Managing Priorities* – Determining what solutions should be implemented, and when

## Design Strategy

Design strategy is the activity of generating new concepts for business strategy through the human-centered design (HCD) process. The HCD process often considers many stakeholders and systems, but is driven by an understanding of human needs and generates of product, service and organizational change concepts that better align the business with those needs<sup>3</sup>. As design activity moves evermore upstream in to business processes, it is necessary that new tools and approaches are used to address sustainability and business issues from a more systemic level.

## The overlap

Visualized above is an overlay of the strategic sustainability process and a general HCD process. The four-step approach to strategic sustainability overlays well on to the human-centered design process, which uses a similar approach to understanding context and envisioning concepts based on principles for success<sup>4</sup>. This paper will explore the use of a hybrid approach that may help to generate better concepts for all systems.

# TiVo, Inc. Today

	<b>First to Market</b> 1997-2002	<b>Intense Competition</b> 2003-2007	<b>Convergence</b> 2008-
COMPETITION	None	Cable, PC, Internet	Cable, PC, Internet, Mobile, ?
USERS	Lead, early adopters	Broader, but still niche	Broader market
MESSAGE	TV, the way it was meant to be	The ultimate TV experience	Entertainment that fits your life
OFFERING FOCUS	<i>Product w/ service</i>	Service +/- product	<i>Service +/- product(s)</i>
CONTENT	TV (Cable, Ant., Satellite)	Television, movies, on demand	TV, www, movies, music, user
PARTNERS	A few	Growing partnerships	Synthesizer / simplifier
ECOSYSTEM	Simple: VCR, TV, TiVo	More: VCR, TV, TiVo, DVD,	Complex: TV, Internet, Mobile...

## A brief history

TiVo invented the Digital Video Recorder (DVR) category, and were focused on delivering a service experience through technology. TiVo's profits from its inception were generated from the service, with the DVR units being sold at cost<sup>5</sup>

Eventually, competition entered in the form of cable company supplied DVRs that were much less expensive, though not as well designed. The growth of PCs as media centers started to affect the market, as well<sup>6</sup>. TiVo has stayed relevant through this period by focusing on delivering a great user experience to their current customers (their customer satisfaction level is above 70%<sup>5</sup>) and through a string of strategic partnerships with Netflix, Amazon.com, and others.

TiVo now has a small, but devout share of the DVR market. They have begun offering their service to be used on other brands of DVRs and have expanded their partnerships. Device convergence and the growing complexity of connecting people to entertainment through the internet and myriad other sources is increasing the complexity of TiVos domain. Their partnerships will continue to grow and a larger focus on their service and ability to gather information from their customers will be prominent.

## TiVo's reason for being

TiVo became a company when they connected the human need of watching the television one wants to watch it, when they want to watch it with a technology that could enable this to occur. At its core, TiVo is about providing simplification and personalization of the entertainment experience to people.

## TiVo's core values

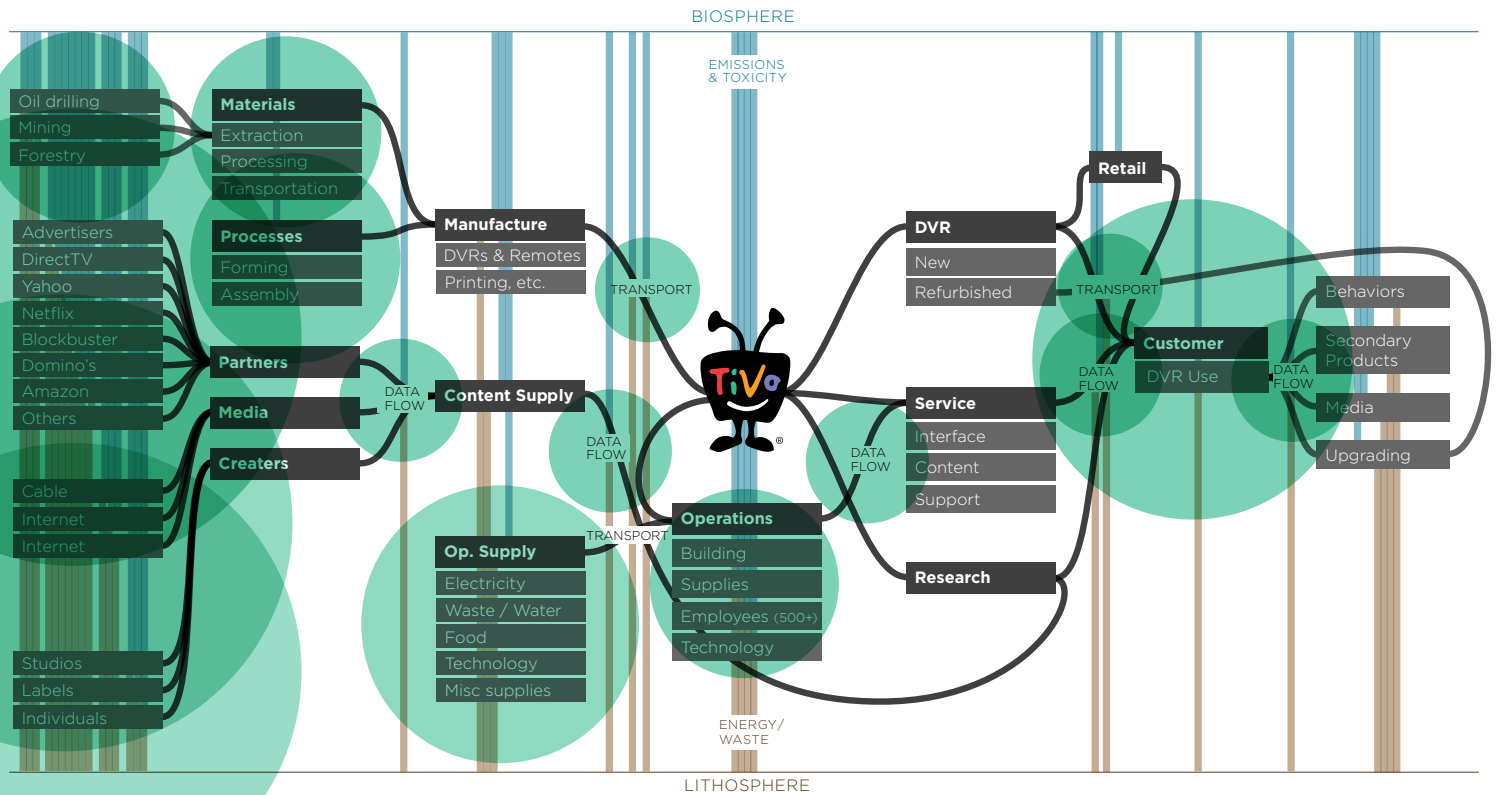
Through their corporate materials<sup>7</sup>, TiVo espouses their core values as an organization. They can be distilled into four core values:

- Customer experience first
- Simplicity and fun
- Open participation inside and outside of TiVo
- Taking educated, pragmatic business risks

## TiVo's vision

The vision for TiVo, laid out by the leaders of the company, is to "Be a leader in the new world of TV, where the customer is in control." This vision statement displays a clear knowledge of the changing world of entertainment, but also demonstrates the company's pragmatic approach. TiVo does not seem to be a company that forms "Big Hairy Audacious Goals", but one that is very focused on making incremental, practical changes.

# TiVo & Sustainability



## TiVo's throughput

The diagram above explores the TiVo's impact on the environment and the different stakeholders affected by the company. As a service oriented company with a technology component, one could presume that operations would be their largest impact but, though this is a qualitative analysis of their throughput, it is apparent that their company has large impacts in other parts of its system.

## Ecological impacts

Though within its entire system TiVo has many indirect ecological, the company has four major areas of direct ecological impact:

*Operations and its supply* - All operations to run the company, its data flow, and its customer service have multiple local and global impacts

*DVR manufacture, transport and end of life* - The DVR devices affect the biosphere and lithosphere in their manufacture, transport, and eventual disposal.

*Data flow throughout the system* - The amount of

data flowing between TiVo, their customers, and their suppliers has many adverse ecological affects. *Energy consumption and behavioral impacts on customers* - The energy consumed during use of TiVo products and services as well as the behaviors it causes in people could have a significant impact on the biosphere and lithosphere.

Upon analyzing TiVo's throughput further, it becomes apparent that their large content supply and partnership chain may be the largest impact factor. TiVo cannot change their supply chain directly, but they do have influence on these suppliers and could begin to take steps to use that influence.

## Human impacts

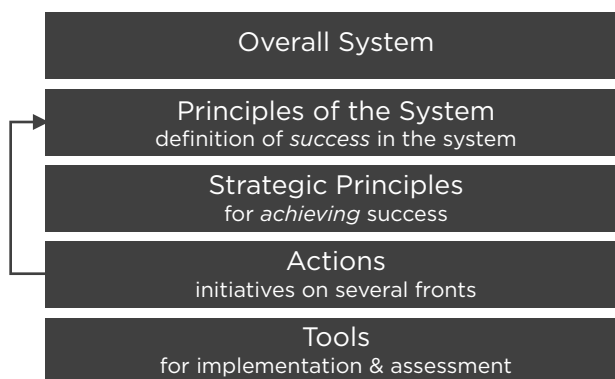
Human impacts of TiVo's activities include the possible affects on the behavior and well being of their customers, treatment of employees, impact on their community, and the human impact of their suppliers and manufacturers.

# TiVo & Human Needs

## The systems approach

As discussed, design strategy focuses on understanding human needs to guide new offerings or organizational changes to align with those human needs. These more immediate needs (such as the need to watch television on one's own time) tend to be more actionable and profitable than long term human needs, such as sustaining the planet for future generations, and therefore overtake those longer term needs.

The ultimate goal of this case study was to explore the use of the approach to strategic sustainable development as a way to create design strategies that synthesize human needs with sustainability needs. To do this it is useful to map out these different needs on the five level system proposed in the strategic sustainable development approach. The system consists of 5 levels, and proposes that actions within the system should be backcasted from the principles for success in the system.<sup>2</sup>



The system for TiVo's current operation, the sustainability system related to TiVo, and the system of an ideal human experience in relation to TiVo are visualized overleaf. Human needs were not derived as they would usually be in the HCD process (through primary research), but were generally inferred for the purpose of this case study.

## An overall system of human needs related to TiVo

The highest level of the system in which people are operating in relation to TiVo boils down to this: people want to be entertained through multimedia. Their consumption of multimedia has transformed over the past 5 years based on the many different platforms (cable, on demand, internet, etc.) becoming available. Television is still a large component of this entertainment, but the scope has widened.

## Principles for success

In the HCD process, principles for design success are often formed based on the "ideal experience" synthesized from design research activities. In the TiVo-human need system people have four general principles of their ideal experience:

- They are entertained
- Entertainment is time effective / fits into their life
- The entertainment is cost effective
- They are able to access the content they want

## Strategic principles

Success within this system can be achieved through several strategies, generated based on the principles for success:

- Let people focus on being entertained
- Synthesize content for them
- Simply the entertainment experience
- Provide them with variety
- Fit the entertainment to their life / schedule
- Communicate the value of their experience

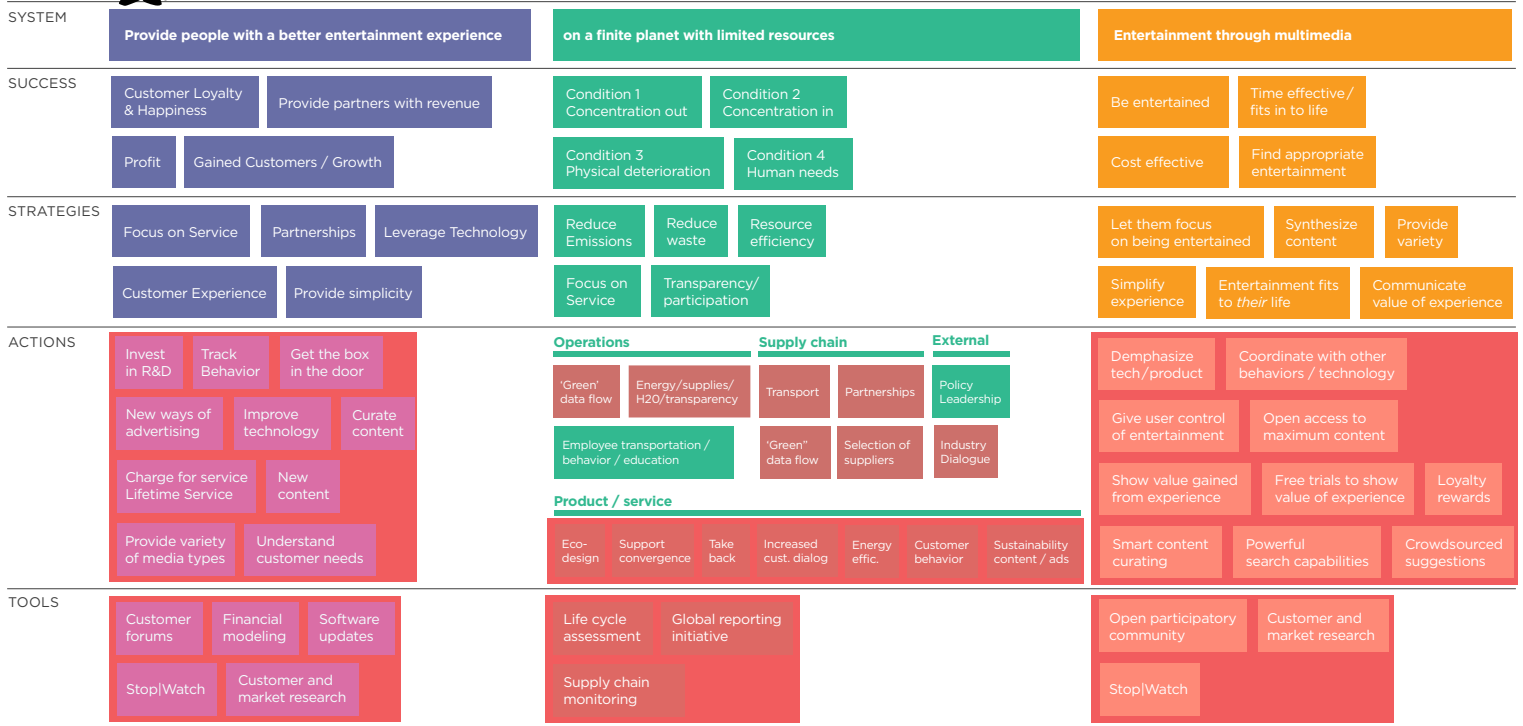
It is at strategic principles that the design process typically shifts gears in to a generative phase in which ideas for actions and tools are created en masse, and then culled down in to solutions that can be prototyped and evaluated. The next section will discuss using the systemic view as a tool for both idea generation and idea evaluation.

# Synthesizing a Sustainability & Design Strategy for TiVo



## Sustainability

## People



### Synthesizing the system

The above diagram is a full system view in which TiVo's business model, a model for achieving sustainability, and a model for successfully meeting peoples' needs relating to entertainment through multimedia are considered.

Actions, in the form of product, service, or organizational concepts, can be generated for each of the systems, based on the principles for success and strategic principles. In the design process, brainstorming sessions could be focused on each of these systems or combinations of them to provide a large number of solutions that could then be evaluated based on their ability to achieve success in all of the systems considered.

Once actions are generated for each system, connections can be made across the systems

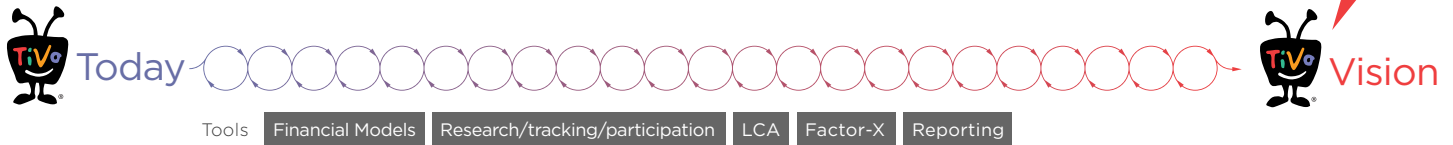
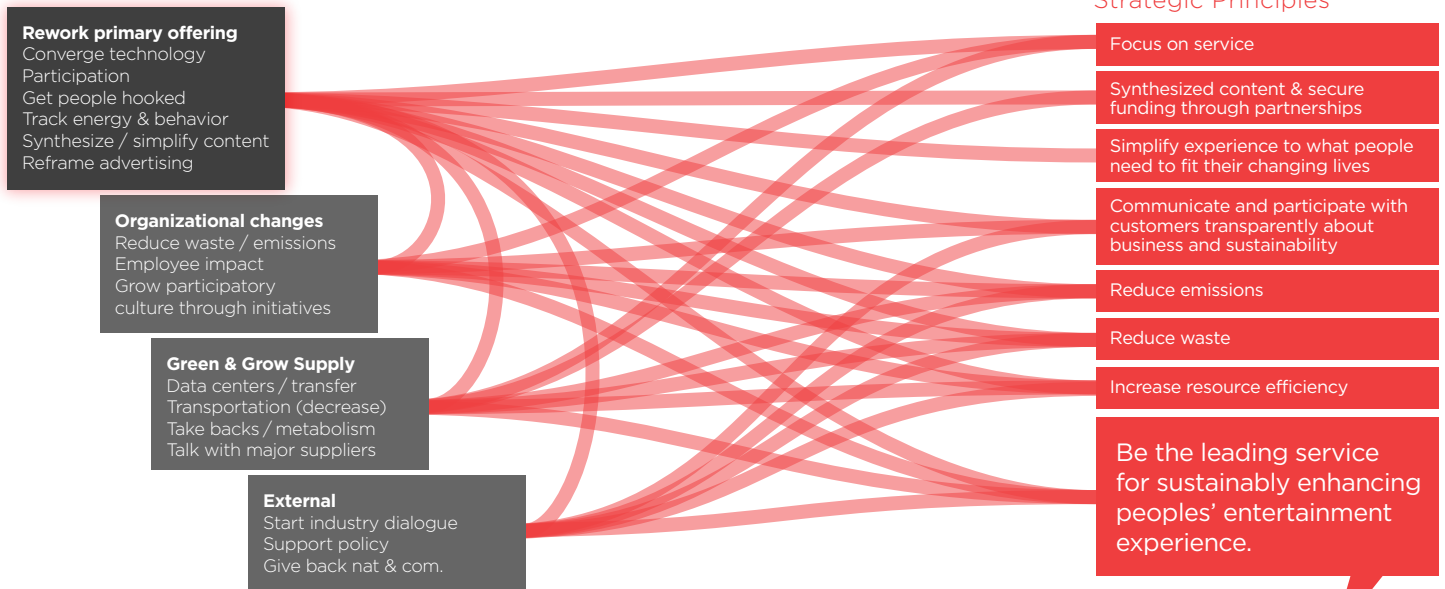
to identify which actions could be combined to achieve success in two or all systems. Though in the case of TiVo there were many possible actions, those that provided success in two or more systems fell in to several categories:

- Participating with and understanding customer behaviors, whether media consumption or energy
- Eliminating the TiVo "product" and focusing on the service of synthesizing content
- Making the data flow between suppliers, TiVo, and customers more efficient
- Reducing the organization's and its customers' ecological footprint

Sustainability is often applied in the design process at two levels. Projects are either sustainability focused, or sustainability is an afterthought, or analysis that occurs once a new product has been defined. Connecting human needs and behavior with

# Designing a Flexible Platform

## Action Plan



## Providing a new direction

Though asked to provide innovative ideas and strategy, design consultants or teams are rarely entrusted to reformat a company's entire strategy. Taking a systems approach to the design process can give designers the ability to present a company with a product that can be the first step in a flexible platform for moving toward sustainability.

In TiVo's case, the design team can provide a new vision (or principles for success) for the company's primary offering. This service offering would integrate the actions that will drive toward success in all systems and connect them with strategies for achieving the new vision, as visualized above.

A new primary offering for an organization like TiVo could provide the company with a catalytic mechanism for change. In order to implement the

offering the organization would have to begin making changes within itself. Eventually this change would reach out in to their supply chain, and in to the industry as a whole. Tools, selected for their ability to measure success, such as financial modeling, customer research, and life cycle assessments, could be used to continually guide and reorient the company's journey toward sustainability.

## Conclusion

This case study outlined an approach of using a strategic sustainability process and systemic approach to guide the human-centered design process to synthesize user needs with sustainability and business needs. Such an approach could help design strategy consultants and internal teams to generate solutions that consider and affect the larger organizational strategy, and drive it toward positive change.

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