Starbucks Cups: Trash or Treasure? An Example of Facilitated Systems Thinking Assisting Stakeholders in Designing Their Own System to Recycle Take-Away Cups

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Abstract

A mixed methods, action-research study was conducted to assess the efficacy and usefulness of Facilitated Systems Thinking as an intervention for system design in complex, multi-stakeholder systems, especially where the stakeholders themselves design the system. This research is contextualized within and provides a case study on the Starbuck's Coffee Company's efforts to collaborate with stakeholders throughout food packaging value chain to create a system for recycling hot (poly-coated paper) and cold (plastic) take-away beverage cups.

Comparative interview results indicate an increase in interviewee awareness of others in the value chain, increase in discussion of prototyping and pilots, and increase in their awareness of their own responsibilities and leverage points within the system. Preliminary results from the most recent intervention are nine stakeholder-designed pilot tests.

This study supplements a larger investigation of the emerging system to recycle take-away cups. Results from this study, as well as suggestions for investigation design changes will contribute to and be incorporated in the larger study.

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Special thanks and appreciation go to Assem Tannir and Igor Cunha, Sloan Fellows, and my teammates on the January Starbucks project. Mr. Tannir's wonderful ideas on how to engage stakeholders in the workshop and great real-time adjustments helped ensure a successful workshop and his artistic hand created a mural for the Cup Summit 2. Mr. Cunha's creativity and food industry knowledge ensured a holistic and informed approach.

Without the Leadership Lab course, this thesis would not have been possible. Therefore, special thanks goes to both Starbucks Coffee Company and the MIT teaching team. Dr. Peter Senge co-taught the Leadership Lab course, authored helpful reference materials, offered feedback on our agenda for the January Workshop, and allowed my help as he facilitated the Cup Summit 2. Professor Wanda Orlikowski co-taught the Leadership Lab course and offered encouragement during our immersion in Seattle. Jason Jay, MIT Sloan doctoral candidate, served as Teaching Assistant to the Leadership Lab course and met with Mr. Cunha, Mr. Tannir, and me as we prepared to engage with Starbucks. Similarly, MIT Researcher and Society of Organizational Learning program manager James Leppert met with us to provide feedback on our engagement ideas for the January Workshop.

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Chapter 1: Introduction and Motivation

This Masters Thesis explores the use of Facilitated Systems Thinking in the design of a complex multi-stakeholder system where the stakeholders themselves are designing the system. This investigation is contextualized in Starbucks Coffee Company's convening stakeholders from throughout the take-away beverage cup value chain to create a system to recycle these cups after consumer use. This initiative originally focused on hot beverage cups, currently made of poly-coated paper. During Cup Summit 2, a professionally facilitated convening of stakeholders from throughout the cup value chain, the initiative was expanded to include cold cups, currently made of plastic. Much of this thesis focuses on the hot beverage cup value chain.

Since 80% of the hot beverage cups leave the stores, because the performance requirements for the cup itself necessitate a combination of materials, and because infrastructures in locations differ and are not easily or inexpensively changed, because not all of Starbucks' customers place the same value on non-landfill end-of-life options for the cup, and because local governments are experimenting with regulation for food container end-of-life options, this initiative is a "systems problem." Through the Leadership Lab class at MIT, a team of two Sloan Fellows and I spent three weeks embedded at the Starbucks Support Center in Seattle in January 2010. We conducted interviews with stakeholder representatives throughout the value chain and within Starbucks. Toward the end of the three weeks, we facilitated a Workshop that assembled these stakeholder representatives at the Starbucks Support Center in Seattle for a focused day addressing the end-of-life options for hot beverage cups. We used Facilitated Systems Thinking methods we had been learning in Leadership Lab. This "MIT Workshop," as Starbucks calls it, began *in medias res*, in the middle of things, between two larger and professionally facilitated Cup Summits. The first summit was held in May 2009 in Seattle and the second was held on 22-23 April 2010 on MIT's campus. Dr. Peter Senge of MIT and the Society of Organizational Learning facilitated both summits. I worked with Dr. Senge and the Starbucks steering team in designing the agenda for the Cup Summit 2, I led a participant activity in the Summit itself, and I helped coordinate logistics.

This thesis seeks to explore the role Facilitated Systems Thinking has played in the Cup Initiative. It uses the MIT January Workshop as a pilot study to evaluate the methodology, it gives an initial indication of the efficacy of Facilitated Systems Thinking in this situation, and it documents substantive components from the Cup Initiative thus far for use in future research. The extended study on this system will partner with other completed and on-going investigations into Facilitated Systems Thinking (and the other names this methodology goes by) to form a multi-case exploration of processes for stakeholders designing their own systems.

By looking at an on-going real-business application of Facilitated Systems Thinking, this thesis also paves the way for research investigating the use of Facilitated Systems Thinking upstream of system architecture in other systems and other contexts. This author anticipates that Facilitated Systems Thinking (and/or consensus building in situations that start more contentiously), will become a very useful addition to the system architecture process because it will give the architects more information about stakeholders' wants and needs and, in ideal cases, will involve the stakeholders more directly in designing the architecture itself. This may be especially true for systems that span organizational and industry boundaries and where the technical expertise is therefore dispersed.

Chapter 2: Literature Review

Facilitated Systems Thinking

Facilitated Systems Thinking is a process for guiding groups of stakeholders to design systems of which they are a part. A large, initial, and recurring component of this process is the stakeholders communicating their needs and wants for the system: their current reality they wish to improve and their vision for the system. In Facilitated Systems Thinking, a facilitator, who is often a neutral party, leads a convened group to see clearly their existing system and define their vision for the future of the system. The difference between the current reality of the existing system and the vision for the future of the system is a "creative tension" that can be resolved either by lowering the vision or raising the current reality (Senge, Smith, et al. 2008) (Senge 1990). Sometimes the "current reality" of the system is that it does not (obviously or coherently) exist yet.

Facilitated Systems Thinking uses the motivation inherent in the creative tension by asking open-end, guiding questions of the convened stakeholders to spark ideas for moving reality toward vision. Through small group work, large group idea harvesting, and playful, creative means of looking at the system in different perspectives, Facilitated Systems Thinking guides stakeholders to test assumptions in their mental models (ways of seeing/understanding) and identify generative overlaps in their interests, wants, needs, and offerings/resources/capabilities.

Especially helpful in the convened stakeholders' exploration of the current reality are the competencies of systems thinking. These competencies include appropriate definition of the "universe" and the overall system, and identifying boundaries; an "ability to see relationships" both "within the system and between the system and the universe;" holistic vantage points "within and across relationships;" tolerance of complexity as it manifests in "uncertain, dynamic, nonlinear states and situations;" cross-disciplinary communication; ability to select and use appropriate "concepts, principles, models, methods, and tools" (Valerdi and Rouse 2010).

Involving Stakeholders in Designing Their Own System

MIT Sloan Professor Eric von Hippel indicates that the details about each stakeholder's wants and needs are "sticky;" that is, wants and needs reside with the stakeholders themselves (von Hippel 2005). Therefore, the shortest path to determining the stakeholder wants and needs is to ask and involve the stakeholders. Systems that more readily address stakeholder wants, needs, and visions are more effective and better used. Professor Lawrence Susskind, of MIT's Department of Urban Studies and Planning and Vice Chair of the Program on Negotiation at Harvard Law School, has found that parties involved in designing their own agreements are more likely to implement these agreements (Susskind and Cruikshank 1987). Extending this logic for negotiated agreements to systems: involving stakeholders in designing their own system increases their participation in resulting system.

An additional reason for employing stakeholders in the design of systems of which they are involved is that they simultaneously develop the familiarity and expertise to evolve the system in the future and to address concerns that arise. Without this intimate involvement, stakeholders rely on outside experts or architects who intervene and leave, perpetuating the dependence of the system on these outside experts, and not developing the systems' participants' capacity to innovate (Kofman and Senge 1993).

An analogous situation where groups of individuals make decisions that impact other groups of people is grantmaking. Researchers at the Grantmakers for Effective Organizations (GEO) found that "grantmaking initiatives are more likely to fail to the degree that they do not engage grantees and other stakeholders in identifying problems and designing solutions" Oppositely, grants that do involve stakeholders appropriately, in carefully designed interaction processes that ensure utilization of feedback and efficient process (i.e. "not wasting people's time") "develop a deeper understanding of the problem, create new and better solutions, and build more effective organizations." (Enright and Bourns 2010).

Following the global examples of cities such as Porto Alegre, Brazil, Chicago's notably diverse 49th Ward used a Participatory Budgeting process to allocate its $1.3 million discretionary budget. Residents, regardless of legal status, language (80 languages are spoken in this Ward), community of residence and income level, formed investigatory committees to explore Ward needs. 1,652 voters voted in this participatory budgeting ballot. Although the full diversity was not reflected (the Latino community was particularly under represented), this pilot suggested areas of improvement such as conducing one-on-one interviews with leaders from under-represented groups and extending participatory budgeting to budgets that might meet these groups' interests and needs more than the budget for infrastructure. In addition to spreading to other budgets within in the 49th Ward, it is spreading to other wards (Lerner and Antieau 2010).

Comparison to Other Examples

Designed changes in a system move it from current reality to enacted vision. Ideally, the stakeholders themselves are involved in the system design, particularly when the system is highly socio-technical, crosses organizational boundaries or industry expertise, and impacts large numbers of people. Senge et. al. offer many examples of systems designed by groups of stakeholders with apparently conflicting wants and needs working together to create systems that meet their collective and individual needs. Particularly salient is the Coca-Cola-World Wildlife Foundation collaboration on clean water (Senge, Smith, et al. 2008). As Senge et. al. describe in *The Necessary Revolution,* Coca-Cola and the World Wildlife Foundation collaborated together to address global water supplies even after years of conflict between the two organizations. Furthermore, Coke habitually considered water usage within its own processing plants, but had not looked at how its water consumption might be perceived by the communities in which its plants are located. One such community in India experienced water shortages and did not forgive Coke its continued

production based on Coke's explanation that it was pulling water from a deeper aquifer that did not affect the ground water the villagers used. This situation shifted the boundaries of Coke's water system and included groups not accustomed to working together, some of which previously hostile (Senge, Smith, et al. 2008).

The Initiative to Recycle Hot Beverage Cups similarly convenes stakeholders from disparate organizations whose intersection is along the life cycle of the hot beverage cup. Suppliers like International Paper mill the paper and produce the cups, sell them to Starbucks, who makes coffee that it sells to consumers. After consumers finish their beverage, they deposit their used cups in receptacles all over the city which haulers empty and take along with other waste and recyclable materials to Materials Reclamation Facilities (MRFs). The MRFs process the items, separating them by material and baling like-materials for sale. Manufacturers who use reclaimed materials buy these bales for use in their products. Governments, especially local municipalities, regulate the sale of materials within their limits and contact for hauling and recycling and other waste management services. None of the organizations, nor individual consumers in this "system" likely thinks of this as a coherent system, until the cup and its material become their unifying focus. As such, the hot beverage cup also convenes individuals unused to seeing themselves as one coherent system or as allies with a common goal.

Further similarities between the recycling take-away cups and the Coke-WWF situations include that these corporations' business models are based on volume of sales, a business model presumably at odds with conservation. However, as dependent as Coke is on water to produce its products, the paper cup suppliers are dependent on fibers to produce cups and coffee retailers in the take-away culture are dependent on having cups to convey their products to their customers. Using the paper cups' strong fibers in other paper products reduces these other products' dependency on virgin fibers, allowing a concentration of virgin fibers to go into paper food containers and other uses that require high percentages of virgin materials. Plastics experience a similar synergy with the distribution of virgin resins concentrated in products that truly necessitate it by using reclaimed resin pellets in products that don't.

Employing Facilitated Systems Thinking

The first step in employing Facilitated Systems Thinking is in convening the appropriate individuals and organizations, or "getting the system in the room" (Senge, Smith, et al. 2008). "Building this capacity [to collaborate, especially when goals differ and there is potentially a history of "distrust or antagonism"] rests on three capabilities: convening, listening, and nurturing shared commitment" (Senge, Smith, et al. 2008).

Once the "system is in the room" the process for facilitating stakeholders through systems thinking differs according to the particulars of the situation, the system, the vision, the constraints on the process, and the stakeholders themselves (Senge, Smith, et al. 2008). These differences include varying means of using the social technologies such as dialogue and presencing (Scharmer 2007) (Senge, Scharmer, et

al. 2005) to engage collectively in system creation. Despite these differences, there are common steps including stakeholders seeing and challenging their own assumptions or "mental models" (Senge 1990), collaboratively exploring, and creating together (Scharmer 2007).

Convening: Getting the "System in the Room"

Employing Facilitated Systems Thinking requires identifying whom to convene. The conflict assessment initiating the Consensus Building Approach that Professor Lawrence Susskind developed for conflict resolution offers a useful approach for identifying the stakeholders. In *Breaking Robert's Rules* Susskind groups stakeholders into three circles: the first are the stakeholders whom the paid neutral or the convener identifies as obviously involved in a system; the second circle are those whom the first circle suggest and the third circle self-identify when they learn of the on-going work around the conflict/issue. In the conflict assessment, Susskind suggests that the paid neutral conduct independent interviews with each stakeholder to gauge their opinions, thoughts, needs, and wants regarding the conflict or issue. The paid neutral then produces a report that he/she circulates among the stakeholders. The report does not attribute any statements, thoughts, comments, or opinions to any particular stakeholder; rather, the neutral groups the comments by stakeholder groups (e.g. all labor comments are grouped, all management, all government, etc.). In the review of the conflict assessment, the paid neutral then asks each stakeholder whether he or she sees his/her comments accurately reflected and if not, to help the paid neutral correct them so that they are, a practice Susskind report works very well to ensure each voice is heard. The stakeholder identification, these interviews, and the document creation and review happen before the stakeholders "come to the table" to discuss the issue or conflict (Susskind and Cruikshank 2006).

Seeing and Challenging Mental Models

In designing the vision for the system, Facilitated Systems Thinking uses the systems thinking competencies to guide stakeholders to challenge their own assumptions and to conduct thought exercises about what will happen if their assumptions are inaccurate. As Dr. Senge et. al. point out in *The Necessary Revolution*, one particularly useful means of guiding stakeholders to see their own system is through inquiry and particularly inquiry down the ladder of inference. Senge describes the ladder of inference as beginning with observable data. From these data that our senses take in, we select some data to focus on. Then, we make meaning from these selected data, and from the meanings we've made, we base assumptions. We draw conclusions with the assumptions, which congeal to be beliefs about the world, which then inform our actions. Our beliefs also influence the data we select in the future (Senge, Smith, et al. 2008). In inquiry, an impartial outsider helps the thinker peel back the layers to reveal and then challenge assumptions and to reflect on the meaning the thinker is making (Isaacs 1993).

The Necessary Revolution describes former Ford executive and CEO of Plug Power, a fuel cell manufacturer, Roger Saillant's conversation with the managers of a large jet

engine manufacturer in which he led them through seeing and challenging their own assumptions for their own business strategy. Seeing the dependency of their business strategy on current governmental approaches to greenhouse gases reached them in ways no proselytizing environmental speeches had before. Saillant's apt use of the ladder of inference through guided inquiry led the managers to see their own situation from a different perspective (Senge, Smith, et al. 2008).

Collaboratively Exploring and Seeing the System

Through their different experiences and their use of different core technologies, organizations and organizational subunits often develop unique languages/vocabularies and views on reality. Dialogue helps these organizations and organizational subunits, share their experiences and communicate (Isaacs 1993) (Schein 1993). Even if they retain their unique views and meanings, dialogue can enable them to make room for the experiences of others within their own mental models or create their own mental model about the others' experiences. Furthermore, a group in dialogue together creates a shared mental model of their system, which can facilitate group problem solving and conflict resolution (Schein 1993).

As Dr. William Isaacs points out: "Dialogue proposes that some levels of coordinated action do not require...rational planning at all. In fact, some of the most powerful forms of coordination may come through participation in unfolding meaning, which might even be perceived differently by different people. A flock of birds suddenly taking flight from a tree reveals the potential coordination of dialogue: this is movement all at once, a wholeness and listening together that permits individual differentiation but is still highly interconnected." (Isaacs 1993)

World Café is a specific social technology designed to foster dialogue. Participants sit at tables with three other people to discuss a topic and then move to other tables. One of the four at each table agrees to be a "Table Host" who remains at the table to welcome the new participants and share what has been discussed at the table thus far. World Café is a procedural means of eliciting and sharing perspectives, thoughts, and opinions from and among many people (Atlee 2003).

Another means for stakeholders to explore collaboratively is to experience each other's situations. Immersive travels, called "Learning Journeys," are particularly valuable for stakeholder groups that are multi-cultural, very diverse (including procedurally or industrially diverse), and/or that contain stakeholders without clear representation. *The Necessary Revolution* documents the impact learning journeys had for the Sustainable Food Lab, an organization of Non-Governmental Organizations, corporate food production companies, and others from throughout the food industry (Senge, Smith, et al. 2008). Among other examples of learning journeys, COSTCO and CIAT similarly visited green bean farmers in Guatemala in their quest to share value throughout the green bean value chain and Coca-Cola and the World Wildlife Foundation visited the Mekong region of China in their investigations into water resources (Hamilton, et al. 2008) (Senge 2008).

Creating Together

Facilitated Systems Thinking guides groups to create together. A nuance is important: creating a vision is not the same as problem solving. *The Necessary Revolution* and other works such as "Communities of Commitment" carefully separate creating from problem solving: "problem solving is about making what you don't want go away. Creating involves bringing something you care about into reality" (Senge, Smith, et al. 2008) (Kofman and Senge 1993).

Facilitated Systems Thinking also fundamentally contains the concept of collaboration. Were each stakeholder to create independently a vision for the same system, redundancies would waste resources, efforts might counteract each other, and/or any given approach may not encompass the system in its entirety. By bringing together those who are impacted by a situation to create a system that meets their needs and wants, Facilitated Systems Thinking engages stakeholders as collaborators, enrolls them in meeting their own needs and wants, and in many cases creates an ad hoc (or sometimes longer lasting) group or organization to manage and continue to improve the system. Involving the stakeholders in their systems design allows them to derive the design from their vision for the system instead of having external forces impose change upon the system (Kofman and Senge 1993). Senge et. al. agree and suggest that in building collaboration for collectively creating and enacting a vision, letting individuals

> get to know one another through common tasks, [through which they] build shared understanding, however limited. And, if coupled with time for reflection and deeper conversation, getting people engaged can make it easier for diverse players to gradually talk together about their larger aims and deeper concerns (Senge, Smith, et al. 2008).

The same concerns and wants may not motivate any two stakeholders, but hearing all of concerns and wants paints a more complete picture of the system that currently exists (even if it is incoherent) and gives direction to the in-creation system (Senge, Smith, et al. 2008). Similarly, Enright and Bourns include in their article on involving stakeholders in grant design thoughts from Nelson Gonzalez, chief strategy and program officer with the Stupski Foundation, that philanthropy needs to move from "an expert focus" in defining and solving problems to a "design process that is more collaborative, cross-sector and multidisciplinary"(Enright and Bourns 2010).

In Presencing facilitators guide groups through successive steps of opening to new information that surrounds them and that they may not see when locked into their habitual mental models (Senge, Scharmer, et al. 2005). It uses dialogue to engender group generation. This successive opening is described as "going down the U" (Scharmer 2007). As a group "gets to the bottom of the U," they are in generative, creative mode (Scharmer 2007). "Moving up the right side of the U" begins with crystallizing of vision, followed by learning through rapid prototyping and then

performing/enacting (system up and running and "achieving results") (Scharmer 2007).

"Building this capacity [to collaborate, especially when goals differ and there is potentially a history of "distrust or antagonism"] rests on three capabilities: convening, listening, and nurturing shared commitment" (Senge, Smith, et al. 2008). Dr. C. Otto Scharmer of MIT Sloan School of Management and the Presencing Institute and the founding chair of Emerging Leaders for Innovation Across Sectors (ELIAS) discusses the need to move beyond a networked society/economy and into a means of relating where the entire system is co-evolving, linking the micro, meso and macro in the ecosystem (Scharmer 2009) (Scharmer 2010) (Scharmer 2007). He includes convening, listening and creating mutual commitment as means of realizing this co-evolving economy/society were every stakeholder's needs are met (Scharmer 2007)(Scharmer 2010). With its cross-organizational collaboration and inclusion, the work with the recycled cup value chain extends beyond a networked relationship into co-evolutionary territory.

Position in Design Process

Negotiated Regulation (Reg Neg) is an excellent analogy to Facilitated Systems Thinking's involving stakeholders in the design of their own system. Reg Neg redesigned the regulatory procedure, moving the open comments section where regulatees provide feedback on the proposed regulation to a more upstream position. That is, instead of having the governmental agency design the regulation fully and independently, communicate it to the public for comment, then incorporate the comments (or not) before instituting the final regulation, Reg Neg allows the public feedback before the agency spends the resources to create the first draft. This draft is more likely to be approved because those who are likely to offer feedback were involved in its design (Susskind and McMahon 1985). Twenty years ago, Congress passed the Negotiated Rulemaking Act of 1990 (5 U.S.C. 561-570), which "it permanently reauthorized" in 1996 (Coglianese 1997) (Spector 2004). Three years later a September 1993 Executive Order requiring all federal agencies to consider using negotiated rulemaking in future regulation (Spector 2004). Between 1982 and 1995, more than 50 federal and over 50 state-level Reg Neg cases have been documented (Spector 2004). The Environmental Protection Agency, The Department of Labor, and the Department of the Interior are frequent users of Reg Neg for cases such as standards for chemicals used in woodworking, hazardous waste transportation standards, controls for volatile organic chemical equipment leaks, noncompliance penalties for the Clean Air Act and others (Spector 2004). Bertram Spector of Negotiations.org espouses the benefits of Reg Neg as:

- "While negotiated rulemaking takes more time and effort upfront than traditional modes of developing regulations, all the stakeholders, including government agencies, are more satisfied with the results.

- Participants find that with a negotiated process, the resulting regulations tend not to be challenged in court. (In contrast, about 80 percent of all EPA regulations have been challenged in court and about 30 percent have been changed as a result.)
- Less time, money and effort are expended on enforcing the regulations.
- Final regulations are technically more accurate and clear to everyone.
- Final regulations can be implemented earlier and with a higher compliance rate.
- More cooperative relationships are established between the agency and the regulated parties" (Spector 2004).

Although not all agree that Reg Neg has achieved its promises of reducing litigation and streamlining the rulemaking process (Coglianese 1997), it provides a documented experiment and analogy in stakeholder co-design. The use of reduced litigation as a measure of success for Reg Neg may be where the analogy departs from system design because in system design, continual iterations, especially in light of emergent characteristics, are both accepted and desired. Therefore, considering the regulation to be "a system", if the litigation Coglianese cites is a form of "redesign" then this might be an indication of successful co-design. To further develop this analogy, comparing these litigations with the frequency of use of viable non-litigious means for stakeholder-suggested, post-enactment amendments would be pertinent. However, following the logic of this analogy may be helpful in the larger study of this system, but is out of scope for this thesis.

Perhaps bridging the gap between Reg Neg and Facilitated Systems Thinking, European Automakers worked with regulators to craft full lifecycle ownership of automobiles to ensure better end-of-life design and use for their cars through Extended Producer Responsibility (EPR) regulation (Laur n.d.). Similarly, the Federal Department of Agriculture contacted Starbucks Coffee Company's Café Practices expert, Dennis Macray, for consultation in drafting regulation around importing agricultural products into the United States (Wade 2010) (Senge, Smith, et al. 2008).

Place

The location for Facilitated Systems Thinking has both social and physical characteristics, described separately below.

Social Characteristics of Place

Both dialogue and Presencing require a "safe space" for the personal transformation Dr. W. Edwards Deming indicates is required for change (Kofman and Senge 1993). The Facilitator can help engender and protect such an environment in the

convention by ensuring each participant's voice is heard and that the dialogue does not degenerate into personal or organizational attacks. Susskind's Consensus Building Approach employs "ground rules" that all participants help create and then must agree to in order to participate; it is the paid neutral's role to enforce them or to ensure the group is self-enforcing them (Susskind and Cruikshank 2006). The facilitator in Facilitated Systems Thinking plays this role, though perhaps less overtly. Through inquiry, small group discussions and large group work, the Facilitator in Facilitated Systems Thinking invites all voices into the dialogue.

Although, consensus building is frequently used to resolve existing conflict, Facilitated Systems Thinking might also be convening individuals with aggressive views toward each other or toward each other's organizations. In some cases, formal ground rules may be beneficial for Facilitated Systems Thinking. In practice, the facilitated systems sessions of which this author has been a part included demonstrated/enacted mores for the day that include many of the ground rules Susskind suggests such as not interrupting a speaker, no personal attacks, etc. (Susskind and Cruikshank 2006). However, this author has not witnessed the formal agreement to ground rules, and enforcement of them has not required more than gentle reminders or demonstration of the desired behavior. These later are intervention strategies, David Straus provides to facilitators in Chapter 7 of the *Consensus Building Handbook* (Straus 2000).

A facilitator's benefit as an outside neutral party is in providing perspective and neutrality. As Senge points out in the "Four Player Model" a balanced conversation has bystanders, leaders, followers, and opposers (Senge, Smith, et al. 2008) This conversation model is also known as "David Kantor's Four Player System" (Isaacs 1999). The Facilitator can provide the bystander perspective to the conversation, especially by inquiring of others. Often, the natural composition of the group and the different organizational perspectives represented supply the leaders and the opposers. As the group creates the system of which they all are a part, they alternate turns in following. His/her neutrality and outside perspective allow the facilitator to guide individuals in exploring their own mental models in an unthreatening manner. However, the type and tone of questioning is important: as Senge et. al. note, the way to engage someone is by asking questions not that challenge his or her beliefs but are the questions the person "is ready to ask" about those beliefs (Senge, Smith, et al. 2008).

In addition to assessing a given conversation for its components, conversations evolve through four types into productivity. Initially, many conversations occur with participants "smoothing over," or preserving social norms and hearing only what they are ready to hear. These types of conversations might be described as not really communicating (as in exchanging substantive information), but more as attempting to preserve or establish relationship. That is, the group (relationship) takes priority over the individual and the conversation is enacting, if not reinforcing, past behavioral and thought patterns substantively. The second phase is "speaking out" in which participants advocate their interests through debate. The individual

and his/her interests become more important than the group. The conversation is still based in established views and patterns substantively. Here the substantive differences dominate social cohesion, and may erode it. Some individuals may view these conversations as threatening or confrontational. As conversations move into phase three, "empathetic listening," inquiry and advocacy come into better balance with each other as participants question and reflect on their own assumptions and suspend preconceived and newly arising judgments. In "empathetic listening" the individuals are acting as individuals, though the relationship is gaining importance through the substantive inclusion of each other's views. "Empathetic listening" brings participants past their old mental models as they make room for others' views and experiences within their own conceptions. Lastly, "generative dialogue" conversations are those in which the participants are inquiring as a collective, seeking what they can create together. Because individuals have communicated their own interests and incorporated those of others', the group's interests become more important than the individuals' and the substance takes on a collective (as compared to a personal/individual) significance (Senge, Smith, et al. 2008) (Scharmer 2007).

Physical Characteristics of Place

The physical space is equally as important as the social characteristics of the place. Facilitated Systems Thinking can occur in a venue hosted by a particular stakeholder, at a neutral environment, or can include a "learning journey" wherein stakeholders experientially learn about a component of the system by seeing it first hand (Senge, Smith, et al. 2008).

Evaluation

Systems engineering literature is replete with criteria for evaluating systems (e.g. "the ilities"). In addressing evaluation, this thesis assumes these "ilities" as essential. However, since this thesis focuses on the Recycling Hot Beverage Cup System, which is nascent, it leaves for future work the robust evaluation of this system. While not diving into evaluation, this thesis does suggest applying the simple model used in assessing negotiated agreements. The Consensus Building Approach and mutual gains negotiation evaluate agreements on whether they are stable, efficient, fair, and wise (Fisher and Ury 1991) (Susskind and Cruikshank 2006) (Susskind and Cruikshank 1987). As supplements of and in some cases restatements of "the ilities", these characteristics also describe good systems. Stable systems are those that the stakeholders use and contribute to over time; stable systems work for their designed lifetime and therefore utilize the resources that went into creating them. Like agreements, systems that are designed efficiently use rapid prototypes ("packages" in CBA/negotiation terminology) to test design options before committing to a particular course of action. Fair agreements and fair systems meet the needs of all their stakeholders, or at least leave very few with unmet needs. Fairness is determined in the eyes of the stakeholders and is directly related to stability: stakeholders whose needs are not met by the system will boycott, disrupt, impede, or compete with the system. The wisdom of systems and agreements is determined in the long term, and is directly related to their ability to

adapt to and/or anticipate emergent qualities and characteristics, and the minimization of negative unintended consequences.

Chapter 3: Research Methodology

As stated above, the fieldwork for this project is all in the Facilitated Systems Thinking realm (and not according to the consensus building literature's indication of consensus building procedure). Analogies to consensus building and negotiated regulation are illustrative. Furthermore, this project is on going and this Masters' thesis outlines relevant literature and initial steps. The January Workshop piece of the fieldwork for this thesis coincides with the project work for Leadership Lab that this author and two classmates conducted at the Starbucks Coffee Company Support Center in January 2010. My teammates were Assem Tannir, and Igor Cunha, both Sloan Fellows. The fieldwork continued with Dr. Peter Senge's facilitation of Cup Summit 2, with which this author assisted (with logistics, with creating the agenda, and by leading an exercise during the summit itself). The Cup Summit will be briefly described, but in depth analysis and reflection will be included in future research.

This study employs mixed research methods including interviews, embedded observation, action-research intervention, and case study description. My Leadership Lab team and I conducted interviews with most of the stakeholders who were invited to participate in the Facilitated Systems Thinking workshop we conducted. Furthermore, we spent three weeks embedded within Starbucks' Support Center going through Starbucks' new partner (employee) immersion process, which consists of meetings with key personnel in various specialties like Global Responsibility, Environmental Impact, Strategy & Implementation, Ethical Sourcing, Community Investments, Supplier Social Responsibility, Stakeholder Engagement, Governmental and Civic Affairs, SCO Procurement, Store Development–Global Energy and Resources, Marketing–Shared Planet, and the Coffee Team.

In conjunction with the many cases Dr. Peter Senge and other researchers have documented, this case adds support to Facilitated Systems Thinking as a viable means of creating changes within systems, especially change initiated and directed by a system's stakeholders. Using these prior works as precedent, the Starbucks' led initiative to take-away cups further illustrates cross-boundary collaboration in large-value-chain spanning systems to effect designed change throughout the value chain ecosystem (Siggelkow 2007). These methods adequately explore the use of systems thinking as a means to help stakeholders design their own system, in this case. Other cases will further confirm or will refute these findings. The mixed methods employed here (at least at this stage of the research) place primacy on the qualitative research methods of interview, embedded observation and action research (Creswell, et al. 2006).

However, the methods employed have some inherent threats to validity and some other limitations. For example, this case may be unique or behaving differently than other cases would. Furthermore, due to timing, this thesis does not extend the full duration of the emerging system; that is, the thesis explores the initial phases and does not address the implemented system, or any longer term outcomes.

This case was selected for accessibility reasons (my teammates and I were embedded within Starbucks for three weeks to conduct a Facilitated Systems Thinking workshop) and because it is an interesting, if not entirely unique, example of self-organization within a value chain. As such, it was not randomly identified. However, as with the Coke and WWF example discussed above in the literature review (Senge, Smith, et al. 2008), this case describes a specific, relatively rare phenomenon (Siggelkow 2007).

Pre-Workshop Interviews

In preparation for the January 2010 workshop, my teammates and I conducted informal phone interviews with all of the invitees who responded to our request. The purpose of these interviews was primarily to build a relationship with them and further encourage their participation both in the workshop itself and the initiative to recycle hot beverage cups in general. [As mentioned above, the January Workshop focused on paper hot beverage cups, leaving plastic cups for future work.] To retain the informality and maximize the relationship building, we did not record the calls or prepare transcripts afterward; we simply took notes during the conversations. The questions we asked were mostly for us to gain an understanding of how the invitees were viewing the current situation and to learn of any ideas they had for creating a system to recycle hot beverage cups. It also allowed us to learn more about their backgrounds and ideologies of sustainability. We phone interviewed nine non-Starbucks individuals in a combination of individual and group interviews. The groups were by company/organization. Of the nine we interviewed, eight attended the workshop. We also had immersion meetings with Starbucks partners in group meetings, structured by the Starbucks' organizational working groups/departments/functions. The immersion meetings served the same purpose as the interviews: primarily of orienting us to the workshop invitees' opinions, backgrounds, current work and thinking, etc. We did not pre-interview six of the participants before they participated; two were recyclers, two were from Starbucks, one was from the government, and one was a supplier. We talked to at least one person from each organization represented at the Workshop. Please see Table 1 for the distribution of organization, pre-workshop engagement and workshop attendance.

Table 1 Distribution of Organization, Position, Pre-workshop Engagement, and Workshop Attendance

Value Chain Role	Organization	Organizational Position	Before Workshop	Workshop
Recycler	Allied Waste Services of Seattle	General Manager, Allied Waste Services of Seattle and representing Rabanco Recycling a Regional Disposal Company	pre-interviewed	attended
Recycler	WA State Recycling Association (WSRA)	Board Chair, WSRA	pre-interviewed	attended
Recycler	Smurfit Stone	Director of National	none	attended

		Accounts		
Recycler	Smurfit Stone	Sr. National Account Manager	none	attended
Recycler	Smurfit Stone	Director, Global Sustainability	pre-interviewed	attended
Retailer	Starbucks Coffee Company	Director - Global Responsibility	immersion	attended
Retailer	Starbucks Coffee Company	Director, global policy & advocacy	immersion	attended
Retailer	Starbucks Coffee Company	Manager, marketing Shared Planet	immersion	attended
Retailer	Starbucks Coffee Company	Manager, Global Responsibility	immersion	attended
Retailer	Starbucks Coffee Company	Sr. energy & resource analyst	immersion	attended
Retailer	Starbucks Coffee Company	Implementation Manager, U.S. Store services	none	attended
Retailer	Starbucks Coffee Company	Senior Counsel	none	attended
Retailer	Starbucks Coffee Company	Government and Civic Affairs	immersion	NO
Government	Seattle Public Utilities	Business Area Manager for Waste Prevention and Product Stewardship	pre-interviewed	attended
Government	Seattle Public Utilities	Planning & Development	none	attended
Government	City of Bellevue	Councilmember - City of Bellevue	none	NO
Government	City of Portland Composting Initiative	City of Portland	pre-interviewed	NO
Worked with Government	Starbucks Coffee Company	Director, Environmental Impact, workshop sponsor	immersion	attended
Hauler	Cleanscapes	VP, Waste Reduction and Diversion	pre-interviewed	attended
Hauler	Republic Services	Municipal Sales Rep	pre-interviewed	attended
Supplier	International Paper	Director, Business Development (Foodservice Business)	pre-interviewed	attended
Supplier	International Paper	Global Sales Manager - Northwest (Foodservice Business)	pre-interviewed	attended
Supplier	International Paper	Director of Marketing	none	attended
Worked with Suppliers	Starbucks Coffee Company	Manager, Procurement	immersion	attended

Although I present the stakeholders in the terminology of Consensus Building and mutual gains negotiation in section "Stakeholders of the Hot Cup Recycling System," my team and I did not follow the full consensus building conflict assessment

process. We interviewed most of the participants, but did not circulate a non-attributed issue assessment document among them. Had we done so, we might have begun their connective thinking before the workshop and validated their perspectives. As in Consensus Building (including mutual gains negotiation, paid neutral facilitation and mediation) where the conflict assessment is primarily to orient and inform the paid neutral, these interviews helped to get us up-to-speed on the stakeholders, their roles, their views, opinions, needs and wants. However, we did also discuss that these pre-interviews served to initiate relationships with each stakeholder, encourage participation in the workshop itself and prompt the stakeholders to think about the emerging Cup System. The interview data also served as comparison to the post-workshop interview data in assessing the efficacy of Facilitated Systems Thinking, in the form of this particular workshop, in stakeholder-designed systems.

Workshop

The workshop convened 21 representatives of the hot beverage cup supply chain at Starbucks Support Center in Seattle, Washington. These 21 individuals represented seven organizations, including Starbucks. The MIT facilitators, my team and I, led the workshop participants through a series of activities designed to make the cup's existing life cycle system visible, brainstorm options for creating a better end-of-life for the hot beverage cups, and then to elicit suggestions for the 2nd Cup Summit scheduled for 22-23 April 2010 in Cambridge, MA on MIT's campus and facilitated by Dr. Peter Senge of MIT and the Society for Organizational Learning.

Igor Cunha, Assem Tannir, Starbucks Partners Liz Marzolf, Susan Long, and Jim Hanna, and I worked on a detailed agenda, which Dr. Senge and MIT Sloan doctoral candidate and Leadership Lab Teaching Assistant Jason Jay reviewed. As to be expected, we deviated from our agenda as the flow of the day emerged. Our working, detailed agenda is displayed in Figure 1.

Agenda for Stakeholder Workshop for 100% Recyclable Cup

Starbucks Support Center
Seattle, WA
Tuesday 26 Jan 2010

8:30-9:00 Arrival, Coffee and Danishes

Pick up nametags that have colored dots to divide into categories

9:00-9:45 State and Align the Vision

Goal: to state focus/vision and introduce

- As they are getting settled, ask them to sit with people they don't know.

(15-20 min) SBUX intro – Jim Hanna;

- Update on cup project and where going, progress on work streams
- Challenges and opportunities,
- Set background for forward looking interaction during the day,
- Introduce MIT relationship,
- Set the atmosphere,
- State goals of workshop (concrete next steps leading to 2010 Cup Summit) (include here)
- Share Shared Planet
- Explain why these particular stakeholders

(5 min) MIT intro – AIME; (Igor)

- MIT Students in a leadership class learning facilitation from Peter Senge, who facilitated the 2009 Cup Summit on behalf of Starbucks. We focus on systems thinking and generative dialogue to create a broader understanding of the cup value chain.
- Define our role for the day
- Set tone for conversation - create safe space for generating ideas
- Agenda for Day

Participant Intros (Small Group); (Igor)

- (5min) Please get into groups of 4 with different colored dots and preferably with people you don't know.
- (10-12 min) Groups of 4-5 of people they don't know (next check-in - they will meet with different group they don't know)
    - Check in instructions/questions: name, company, industry, share 1 hope for the day and 1 concern for the day

- (5-10 min) Harvest from volunteer groups
- Transition: Thank you for the hopes and concerns, we are going to hold them for later in the day. Now start new activity to understand each other's perspective in value chain.

9:45-11:10 Make Value Chain System Visible in the Room (Assem)

Goal: to understand connections among stakeholders, to build shared understanding about various perspectives and drivers and to surface areas of understanding

- **(80 min) Small Groups Drawing and Reporting Back**:
  - (3-5 min) Divide into group according to value chain role (e.g. haulers, waste recycling, retailer, government, suppliers)
    - Give example of non-cup value chain
    - Post example diagram from Seetha from the 2009 cups summit (minus the leverage points) as a focal point for the life cycle of the cup material.
  - **(1min) Ask starter question**
    - Taking the cup as example of piece of material through this value chain. Share your perspective. E.g. IP – you produce cups for lots of different organizations what does that look like for you?
    - Ask that they write down their opinions and thoughts and we'll air them later, but for now, the goal is to get into each other's shoes.
  - **(3-5 min) Give materials**:
    - Blank paper
  - **(10-15 min) Draw in groups**
    - Draw and annotate in black: simple material flow
    - Draw and annotate in blue: incentives
    - Draw and annotate in red: constraints
      - Consider: My role in cup value chain is....
      - Consider: My core business is....
      - Consider: Decisions you make
      - Consider: Where you assert your influence
      - Think beyond your perspective
    - Table Facilitators (very light facilitating)
      - Suppliers & Government: Ellen
      - Starbucks Cup Design & Starbucks Ops: Igor
      - Haulers & Recyclers: Assem
      - Roving: Liz & Jim
  - **(2-3 min) Reconvene whole group**

        - Please come sit in your "home group" which is the group you did your initial "check in"
    - **(10 from each of 5 groups= 50 min) Elicit drawings/explanations from each category/color group**
        - Suppliers, please share your drawing, your role in the value chain, your business model, incentives and constraints.
        - Retailers – Cup Designers
        - Retailer – Ops
        - Haulers
        - Recyclers
        - Government
        - Cover the rest of the questions after the break

11:10-11:25 Break

11:30-11:40 President of Starbucks America Speaks

Liz introduces

(N.B. not announcing title or name in case last minute change)

11:40-12:30 Elicitation of Options (Ellen)

Goal: to generate a list of options to use leverage points/drivers to achieve 100% recyclable cup, to design the future state, to bring assumptions about stakeholder responsibilities

- **(15-20 min) Reconnect to value chain and reflect**:
    - To reach the vision of 100% cup recycling, I would need....
    - What would prevent you from participating in recyclable the cup?
    - What help do you need from others?
    - What help could you offer to others?
- **(10-15 min) Whole Group Discussion led by facilitators**
    - What was surprising about what you saw?
    - What strikes you the most about entire system or other players?
- **(50 min) Path 1: Reflect then Speed Date**
    - (3-5 min) Explain that goal is for each person to generate 3 ideas individually and then compare in a series of one-on-one conversations with others in room.
        - Each person will reflection on and writes down:
            - What can I do as a stakeholder?
            - What could any pair of stakeholders do?
            - What can the whole system do?

        - To form the pairs, may do freeform or provide structure for the pairing, e.g. put in two rows and have one side stay and the other side move.
    - (10 min) Individual reflection and writing
    - (6-8 min per pair x 3 pairs = 30 min) – Each pair will compare ideas and "plagiarize"
    - (3-5 min) – reconvene to whole group
    - (3min) To collect thoughts re: favorite idea, most potential, and most challenging
    - (15 min) – generate collective list from these individual ideas according to these questions (can be done after lunch)
        - What is favorite idea and why?
            - Assem writing flip chart 1
        - Which was the most potential and why?
            - Igor writing flip chart 2
        - Which has the most challenging and why?
            - Liz writing flip chart 3

12:30 – 13:30 Lunch and freeform conversation

13:30 -14:30 Reflection (Ellen, Assem, Igor)

Goal: to discuss the underlying assumptions and differences that surface throughout the day, to leave on a sense of connection and possibility.

- **(15 min) – Carry-over from Options, if necessary. (Ellen)** Generate collective list from these individual ideas.
        - What is favorite idea and why?
            - Assem writing flip chart 1
        - Which was the most potential and why?
            - Igor writing flip chart 2
        - Which has the most challenging and why?
            - Liz writing flip chart 3

- **Path 1: (60 min) Reflection**: Whole Group with facilitator capturing notes on flip chart at front and directing participation
    - **Ellen (talk), Assem (write flip chart 1): Next Steps** to bring about these options?
        - What will I do?
        - What will we collectively do?
    - **Liz (talk), Ellen (write flip chart 2)**: Given today, what and how does this impact the **work streams**? [because they involve other stakeholders.]
    - **Igor (talk) Assem (write flip chart 1):** Forward looking to **next summit**

- What would success look like?
- What do we need to do between now and then?
- Who should be involved? (Organizations and industries, etc. not specific people)
- What did we do today that we would want to reenact at Cup Summit II? (Transition to unpacking agenda item)

14:30 -15:30 Unpacking of Methodology (Assem, Igor, Ellen)

Goal: to enable stakeholders to lead similar discussions in their organizations.

- **(60 min) Whole Group Discussion about day's activities with facilitator capturing notes on flip chart at front and directing participation**
  - Make transparent environment trying to create and why by talking about each activity of the day. e.g. trying to illuminate assumptions (that impose barriers or create conflict), trying to view system from others' perspective, etc.
  - **Conversation Model: Assem**
  - **Creative Tension: Igor**
  - **Ladder of Inference: Ellen**
  - Do you think we achieved these aims?
  - Is there anything you might find useful in your own organization?
  - Is there any support you might need to help you use these that you have identified?

Figure 1 Detailed Agenda for January Workshop, 26 Jan 2010 at Starbucks Support Center, Seattle, WA

Starbucks provided coffee, tea, and pastries for the participants as they arrived. As they were getting settled and enjoying breakfast, the participants began mingling with Starbucks partners and with each other. We convened the meeting shortly after 9am.

Mr. James Hanna, Director of Environmental Impact for Starbucks, initiated the Workshop with an update on and direction for the cup project, an introduction of the Starbucks-MIT relationship, goals and background setting for the Workshop, challenges and opportunities, an overview of Starbucks' Shared Planet, and an explanation of why these particular participants/stakeholders were invited. Following Mr. Hanna's remarks, Mr. Cunha briefly went over the agenda for the day [see Figure 2].

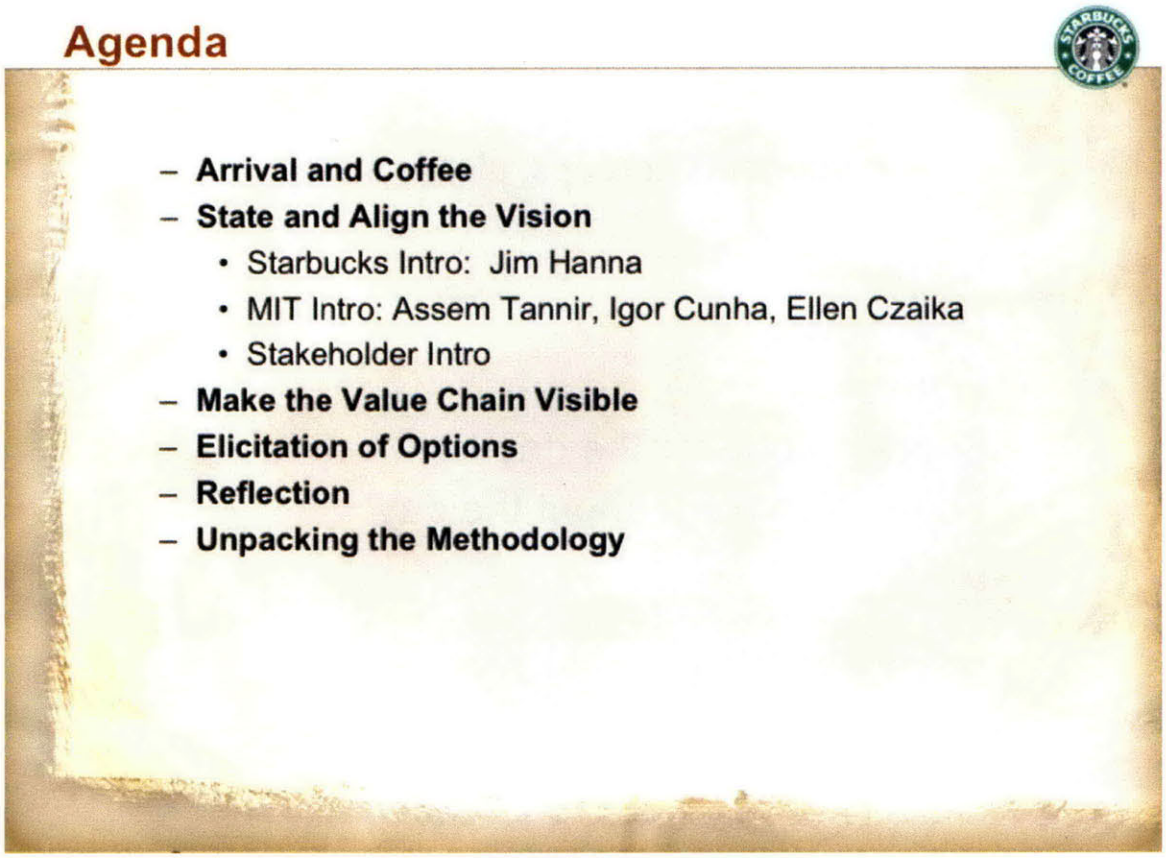


Figure 2 Agenda as presented to the Workshop Participants on 26 Jan 2010

We started the work of the Workshop with a small group "check in" to give the participants opportunity to meet each other, hear from each other and tell their own interest. In a "check in," participants each take turns explaining their views while the others listen without interrupting. Figure 3 contains the instructions that we displayed on a screen for the participants.

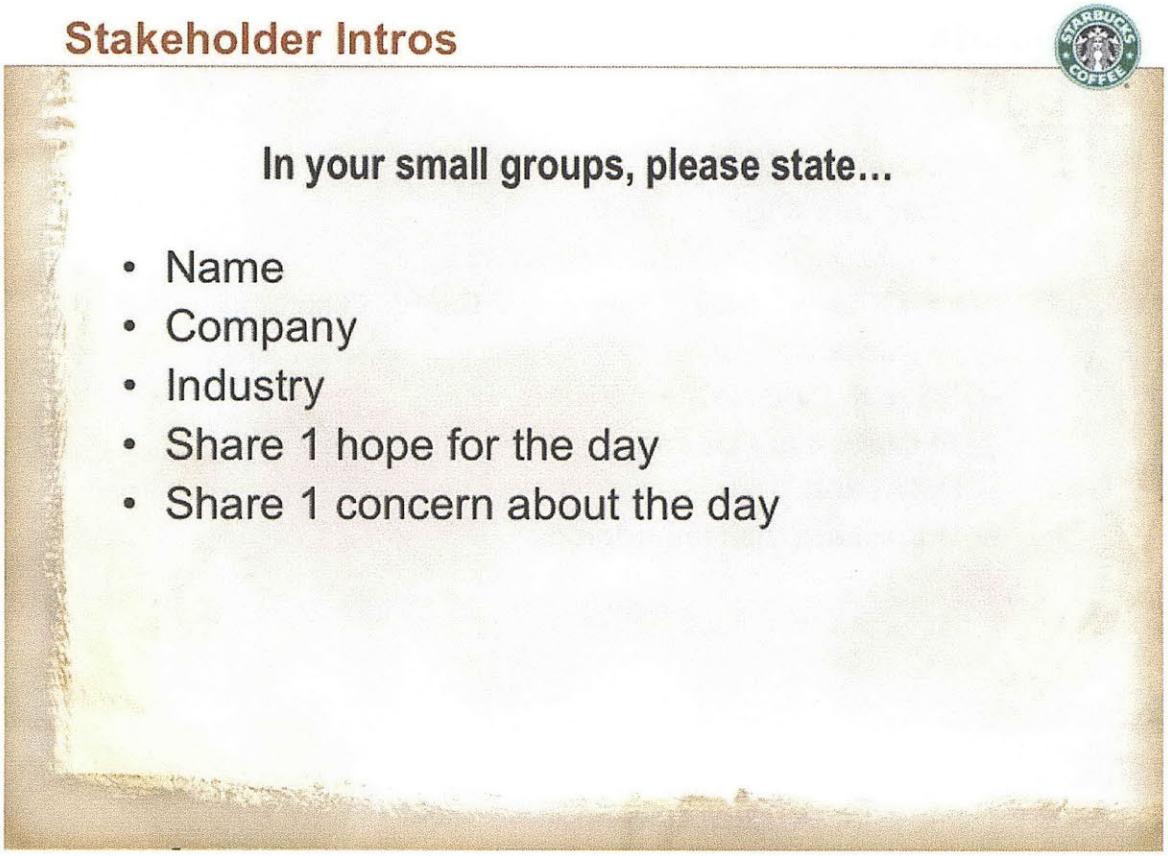


Figure 3 Instructions for Stakeholder Introductions as presented to the Workshop Participants on 26 Jan 2010

After the workshop participants worked in groups of four for 10-12 minutes, we harvested ideas from the small group. Mr. Cunha facilitated, Mr. Tannir captured the concerns on an easel on one side of Mr. Cunha and I wrote the hopes on an easel on the other side.

Following the report-out on the small group introductions, we divided them into other small groups based on their role in the supply chain. All the paper makers (cup suppliers) were together at a table, the government representatives collected at another table, the Starbucks partners at a third, the haulers were the fourth table and the recyclers, the fifth. In these small groups, we asked them to draw their part of the value chain with the material flow in black, the incentives in blue and the constraints in red. We asked them to consider their role in the cup value chain, their core business, the decisions they make, and where they assert their influence. The screen in the room rotated through the slides depicted in Figure 4 and Figure 5.

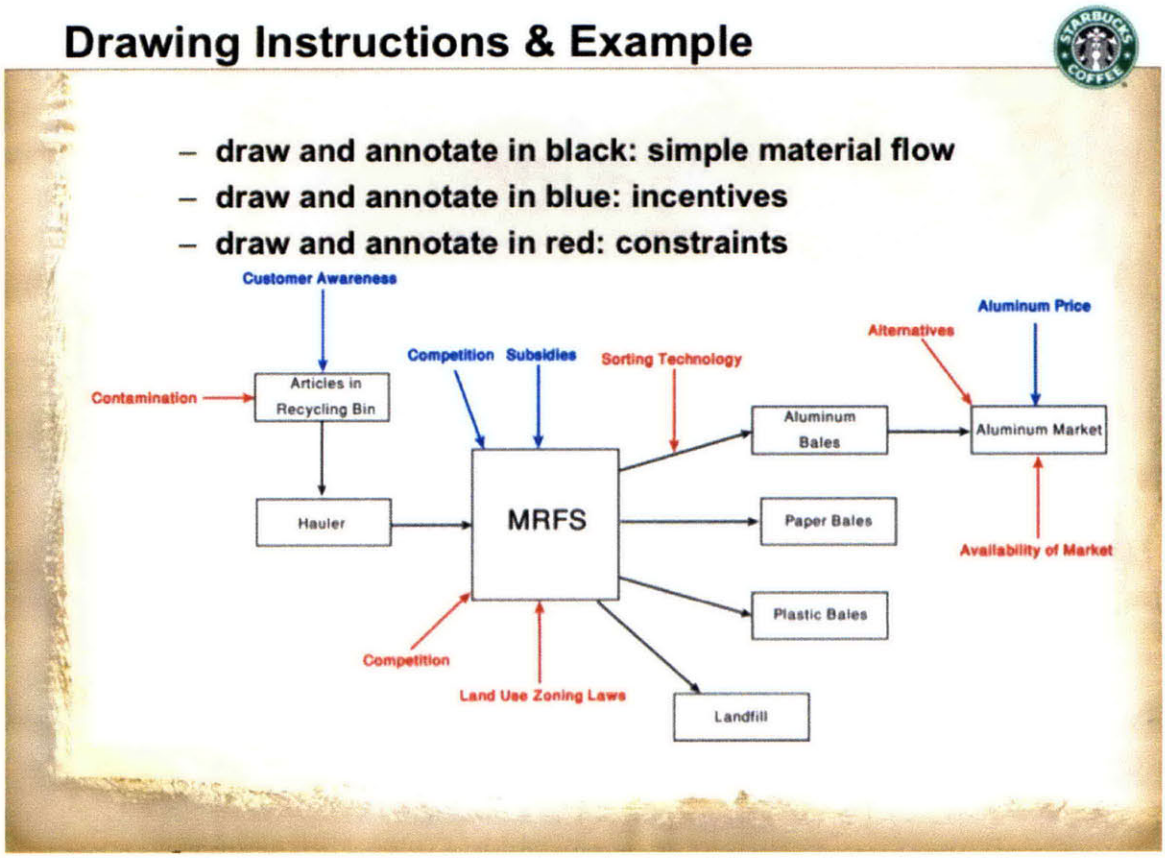


Figure 4 Instructions Drawing the Value Chain as presented to the Workshop participants 26 Jan 2010

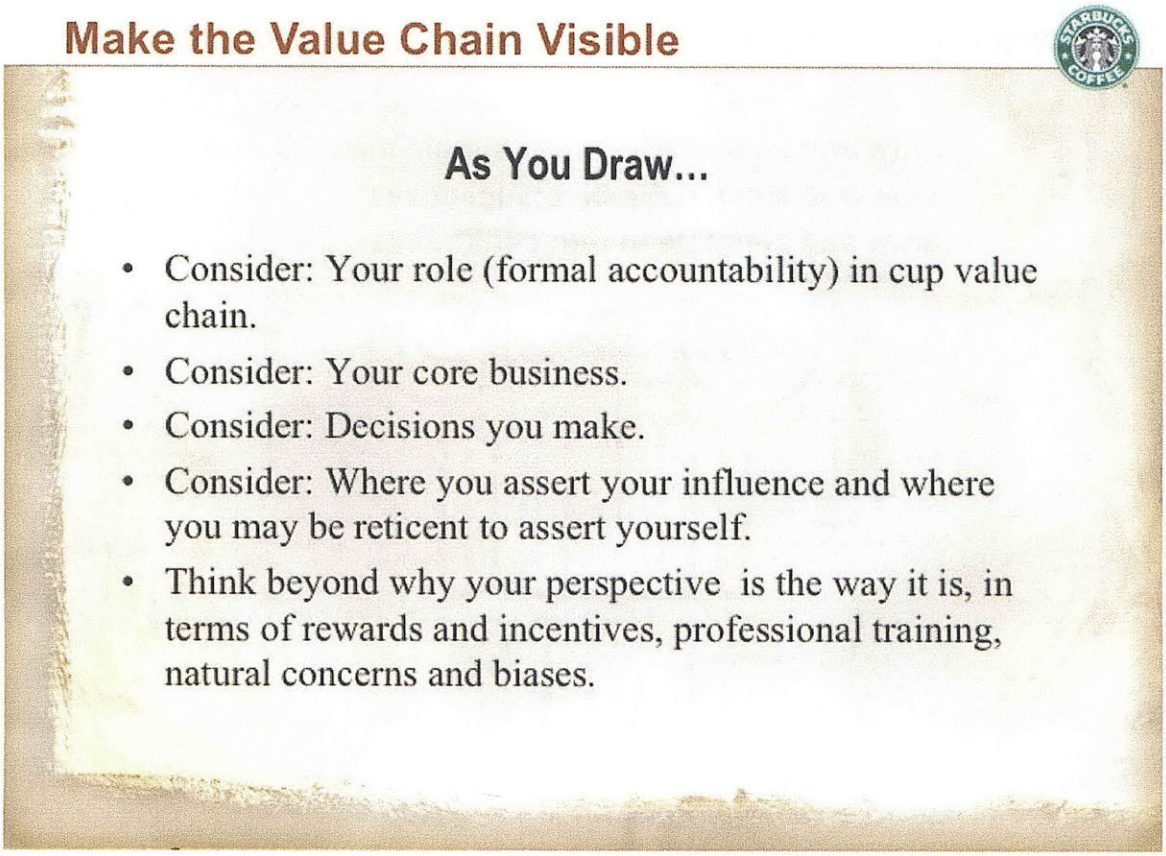


Figure 5 Further Instructions for Drawing the Value Chain as presented to Workshop participants 26 Jan 2010

After 30 minutes of drawing [see Figure 6], we reconvened the large group to hear from each small group [see Figure 7].

Figure 6 Participants in "Value Chain" Small Groups Drawing the Value Chain During the Workshop, from MIT Outbrief presentation to Starbucks on 28 Jan 2010

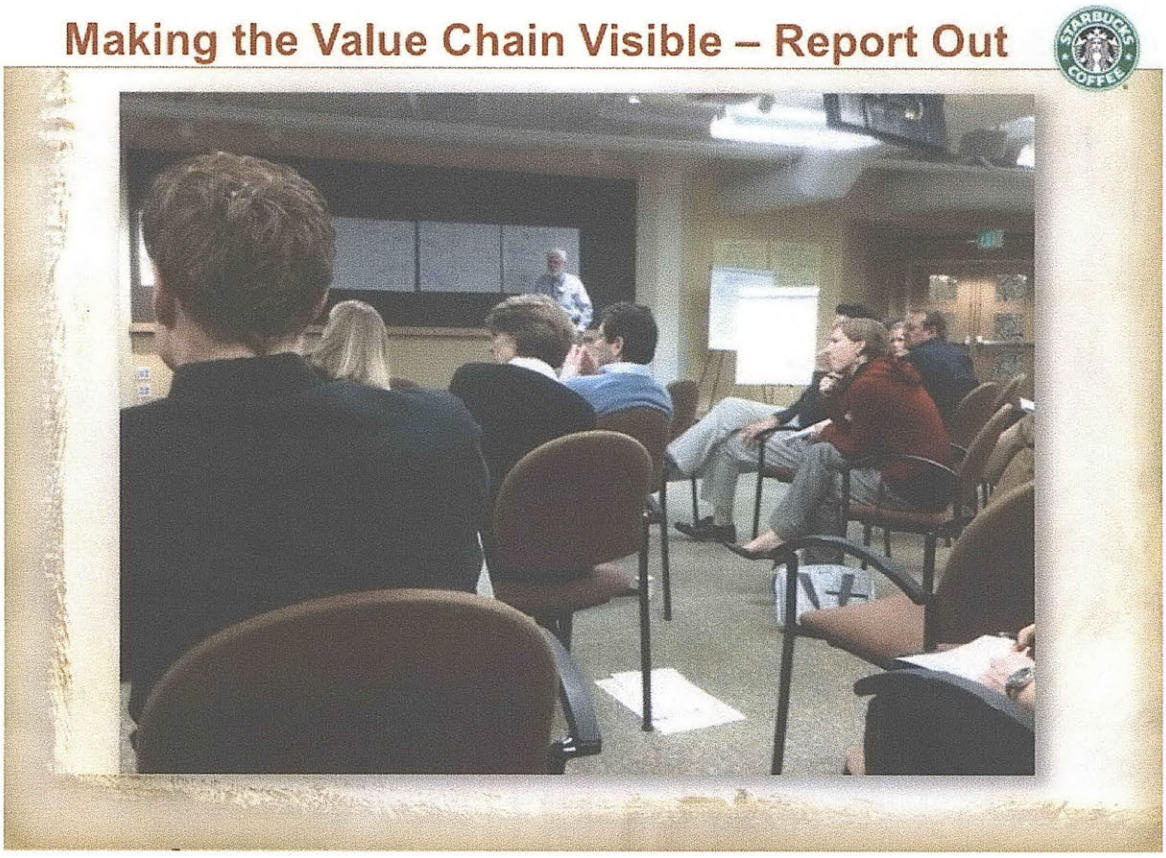


Figure 7 Government Reporting Out to the Full Participant Group, from MIT Outbrief to Starbucks on 28 Jan 2010

Following the groups' reports back to the group, President of Starbucks Coffee, United States, Cliff Burrows, addressed the participants. In his remarks, he confirmed Starbucks Coffee's interest in creating the ability to recycle the hot beverage cup and appealed to the participants to join together to realize this vision.

Mr. Burrows' talk preceded lunch, during which the participants mingled and discussed various components of the cup value chain and recycling/composting in general. Starbucks provided lunch for the participants.

After lunch, we started as a full group and asked participants to call out what they feel they can do as stakeholders in this system, what they would need to realize/participate in a system that recycles 100% of the hot beverage cups, and what they could provide to others. Figure 8 displays the instructions we displayed on the screen during this exercise.

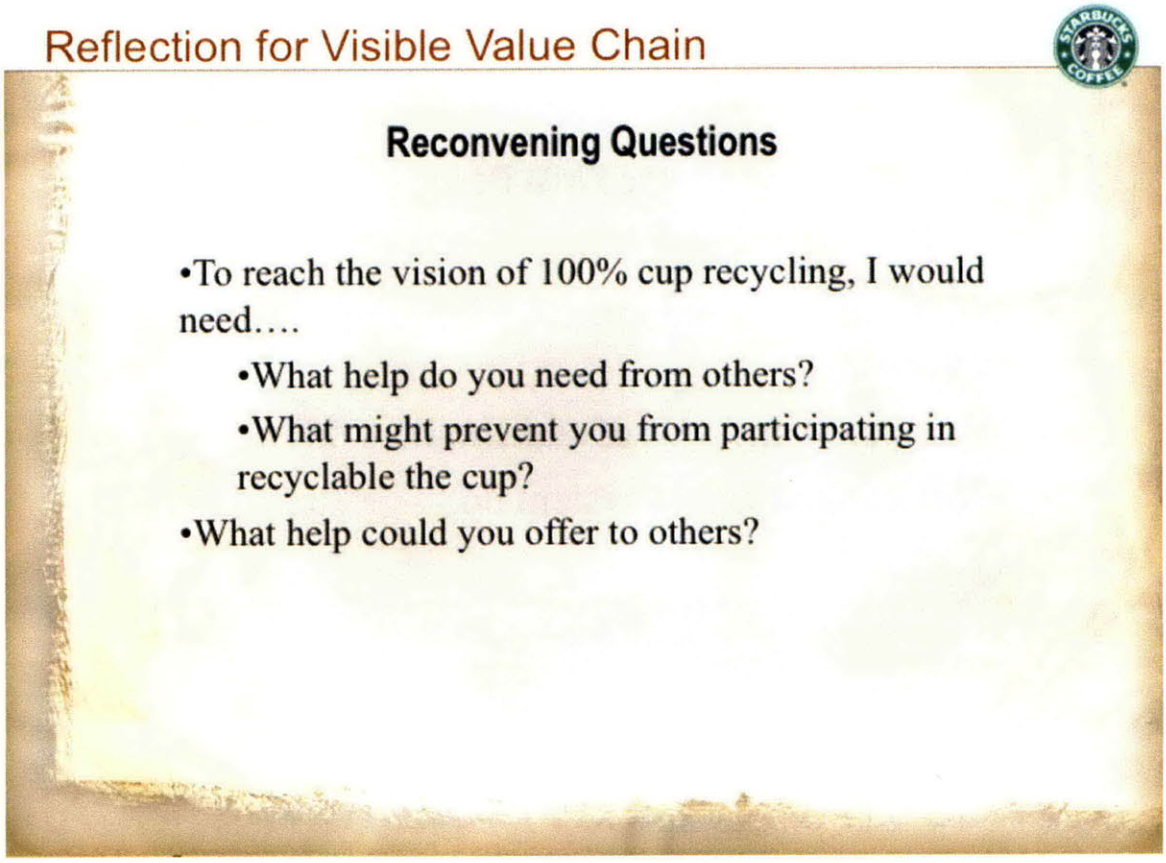


Figure 8 Reconvening Questions as Presented to the Workshop Participants on 26 Jan 2010

In the next exercise, we asked the participants to take a moment to write down what their organization can do, what any pair of organizations can do, and what the whole system can do to bring about 100% recycling of the hot beverage cup [Figure 9]. Then, we asked each participant to talk one-on-one with a series of individuals with whom they have not yet worked during the Workshop and to swap these ideas. In these "speed dating" conversations, as they hear ideas they like, they are to add them to their own list.

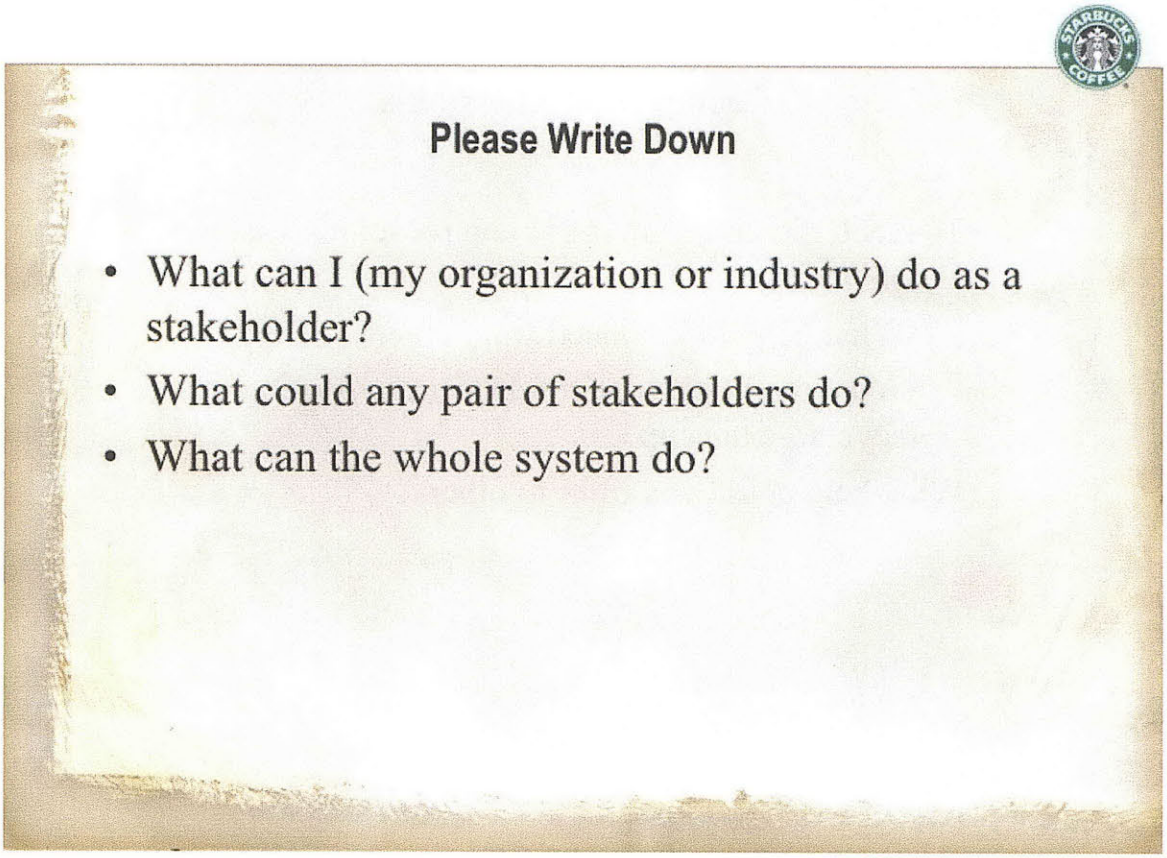


Figure 9 "Options Generation" Instructions as presented to the Workshop Participants on 26 Jan 2010

We modified the agenda to ensure all voices were heard. We had planned to have the reporting back of favorite, most challenging, and highest potential ideas heard during the "speed dating" exercise to be done in the full group [Figure 10]. However, because there were some dominant voices, we asked the stakeholders to return to their value chain small groups instead. We believe this change brought out more of the options the individual pairs of two people had discussed in their "speed dating." The small groups then reported back to the full group on their collective favorite, most potential and most challenging ideas.

We also chose not to do the "Unpacking the Methodology" portion of the agenda. We made this decision after lunch when we realized that in their small groups, the participants were going to greater detail, and thus taking longer, than we had expected. Therefore, we ended the day with the Reflection section of the agenda.

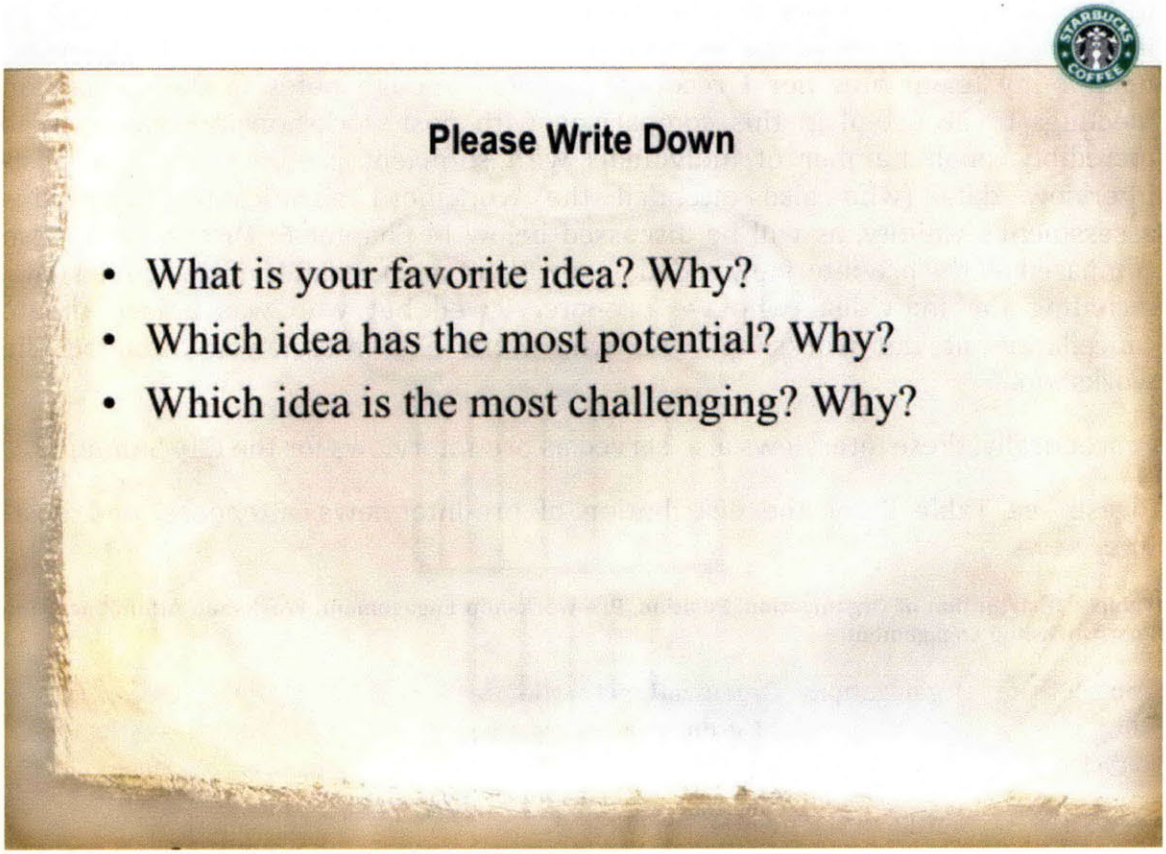


Figure 10 Reporting Back on Options Heard in the Pairs of Conversations, as presented to the Workshop Participants on 26 Jan 2010

Post-Workshop, Pre-Cup Summit 2 Interviews

The post workshop interviews offered an opportunity to follow up with the participants, retain contact to encourage their continued involvement and capture their current thinking about the hot beverage cup's end of life.

I conducted post workshop interviews with ten of the twenty-one attendees in eight phone interviews wherein I asked participants for their current thinking about recycling hot beverage cups. With some participants, I asked directly about the January Workshop. However, I found this line of questioning to elicit compliments rather than useful insights or reflections on the workshop itself. As with the pre-workshop interviews, I had an outline of some basic, open-ended questions that prompted the participants to talk openly. I did not rigorously follow a set of questions. These interviews are informal and not recorded or transcribed, though I did take notes in real-time.

To gauge whether the workshop intervention impacted the participants thinking, I coded my notes from the pre-interviews and post-interviews using line-by-line coding. From these codes, I then looked at the interview notes in aggregate to assess any suggestions of change in thinking. Only four individuals were pre-interviewed, post-interviewed and attended the workshop. These were all external

to Starbucks. There were two Starbucks partners with whom my team had an immersion, who attended the workshop and whom I post-interviewed. However, neither my teammates nor I recorded detailed enough notes in the immersion meetings to be useful in this comparison with post-workshop interviews. The incredibly small number of individuals with sufficient pre-interview and post-interview data (who also attended the workshop) significantly limits this assessment's validity, as will be discussed below in Chapter 6: Discussion. I also compared all the pre-interview coded data with all the post-interviewed coded data, including the individual who we pre-interviewed but who was a last minute cancellation at the workshop. All who were post-interviewed attended the workshop.

Procedurally, these interviews also served as pre-interviews for the Cup Summit 2.

Please see Table 2 for the distribution of pre-interviews, attendees, and post-interviews.

Table 2 Distribution of Organization, Position, Pre-workshop Engagement, Workshop Attendance, and Post-workshop Engagement

Value Chain Role	Organization	Organizational Position	Before Workshop	Workshop	After workshop
Recycler	Allied Waste Services of Seattle	General Manager, Allied Waste Services of Seattle and representing Rabanco Recycling a Regional Disposal Company	pre-interviewed	attended	none
Recycler	WA State Recycling Association (WSRA)	Board Chair, WSRA	pre-interviewed	attended	Post-interviewed
Recycler	Smurfit Stone	Director of National Accounts	none	attended	Post-interviewed
Recycler	Smurfit Stone	Sr. National Account Manager	none	attended	Post-interviewed
Recycler	Smurfit Stone	Director, Global Sustainability	pre-interviewed	attended	Post-interviewed
Retailer	Starbucks Coffee Company	Director - Global Responsibility	immersion	attended	Post-interviewed
Retailer	Starbucks Coffee Company	Director, global policy & advocacy	immersion	attended	none
Retailer	Starbucks Coffee	Manager, marketing	immersion	attended	none

	Company	Shared Planet			
Retailer	Starbucks Coffee Company	Manager, Global Responsibility	immersion	attended	
Retailer	Starbucks Coffee Company	sr. energy & resource analyst	immersion	attended	Post-interviewed
Retailer	Starbucks Coffee Company	Implementation Manager, U.S. Store services	none	attended	none
Retailer	Starbucks Coffee Company	Senior Counsel	none	attended	Post-interviewed
Retailer	Starbucks Coffee Company	Government and Civic Affairs	immersion	NO	none
Government	Seattle Public Utilities	Business Area Manager for Waste Prevention and Product Stewardship	pre-interviewed	attended	none
Government	Seattle Public Utilities	Planning & Development	none	attended	Post-interviewed
Government	City of Bellevue	Councilmember - City of Bellevue	none	NO	None
Government	City of Portland Composting Initiative	City of Portland	pre-interviewed	NO	None
Worked with Government	Starbucks Coffee Company	Director, Environmental Impact, workshop sponsor	immersion	attended	none
Hauler	Cleanscapes	VP, Waste Reduction and Diversion	pre-interviewed	attended	Post-interviewed
Hauler	Republic Services	Municipal Sales Rep	pre-interviewed	attended	Post-interviewed
Supplier	International Paper	Director, Business Development (Foodservice Business)	pre-interviewed	attended	None
Supplier	International Paper	Global Sales Manager - Northwest (Foodservice Business)	pre-interviewed	attended	None
Supplier	International Paper	Director of Marketing	none	attended	None

Worked with Supplier	Starbucks Coffee Company	Manager, Procurement	immersion	attended	None

Customer Behavior and Disposal-Receptacle Observation

Because customer recycling and disposal behavior is such a large part of this system, I did a mini-observation of people interacting with the disposal bins in the MIT Stata Center eating area from 8:20 to 9:20 am on Friday 19 February 2010. Please see Figure 11 below for a picture of the receptacles with which the people I was observing were interacting. I selected this disposal receptacle system because it employs the characteristics of good communication to customers espoused during the January Workshop. Specifically, there are big text labels for each bin and also pictures and text labels indicating what sorts of products are compostable, recyclable and waste. Were the word "trash" replaced with the word "landfill," the disposal receptacle system would include all the suggestions discussed at the January Workshop.

Figure 11 Disposal Receptacles in MIT Stata Center Observation Inquiry

As I arrived in the MIT Stata Center cafeteria area, I purchased a cup of tea in a disposable paper cup, put an OCC sleeve on it but not a plastic lid. Bringing my tea with me, I selected a seat from which I could see the disposal receptacles, especially which bin individuals were using. I tested my vantage point for a few minutes,

during which one person threw something into a bin. Due to my vantage point, I had to observe what people were carrying as they walked up to the disposal receptacles because many moved so quickly, I needed the advanced knowledge of what they were holding.

I wished to be inconspicuous; not to have the patrons aware I was observing the disposal receptacles. I took notes on my computer as I observed, typing without looking at the keys, but looking at the bins instead. Many patrons in the eating area were also working on their own computers; I blended in as a typical patron with my computer and cup of tea. After my observation hour was over, I had finished my tea so I decoupled my paper hot beverage cup and OCC sleeve, ready to deposit them in the appropriate bins. However, I paused because there are two pictures of a coupled paper-hot-beverage-cup-and-sleeve on the disposal receptacles: one on the recycling bin and the other on the composting bin. I felt confusion about which bin the sleeve and cup should go in. Given that I had had tea without any sugar, cream, or milk, I inferred that the contamination level was low and put both the cup and sleeve into the recycling bin.

My own confusion interacting with this disposal receptacle system prompted me to investigate the signage more closely. The description of the signage is as follows:

- "Single Stream Recycling"
    - "Plastic bottles and containers (#1-7)" is the text under pictures of a water bottle, a single-serving yogurt container, a multiple-serving yogurt or cottage cheese container, a cold cup with a dome lid, a plastic juice container, a plastic soda bottle, and a multi-serving plastic sports drink container
    - "Glass bottles and jars" is the text under a picture of a glass tea bottle, an applesauce jar, a beer bottle, and a sparkling water bottle
    - "Metal cans and aluminum foil" is the text under a foil plate, two soda cans, a small juice container, and crumpled aluminum foil.
    - "Milk and juice cartons" is the text under a picture of a single-serving milk carton, a tetra pack of a non-dairy beverage, and a quart orange juice carton
    - "Paper, cardboard, paperboard and plastic bags" is the text under pictures of a newspaper, a pizza box and a paper hot beverage cup with OCC sleeve
    - There is a logo for the MIT Facilities Environmental group (web.mit.edu/facilities/environmental) in the bottom right corner
- "Food Scraps / Compostables"

- "Food scraps" is the text under a picture of a partially eaten apple, an orange peel, a piece of sushi and a tea bag
- "Paper food and drink containers, paper bags, and napkins" is the text under a picture of three various sized paper soup containers, a paper hot beverage cup with OCC sleeve, a crumpled napkin, a brown paper bag, and a paper plate
- "Wooden chopsticks" is the text under a picture of a pair of disposable wooden chopsticks
- "Compostable plastics" is the text under a picture of a clear-plastic clamshell food container, and three different sized plastic cold beverage containers with flat lids
- There are logos for MIT Facilities Environmental group (web.mit.edu/facilities/environmental), UA, WG Recycling, MIT Food Services, and MIT Environmental Health and Safety Systems in the bottom right corner.

- Trash
  - "Styrofoam cups and containers" is the text under a picture of a Styrofoam hot beverage cup with a plastic lid, two Styrofoam clamshell food containers, one open and the other closed, and a Styrofoam tray
  - "Plastic lids, cutlery, and other plastics without a number" is the text under a picture of a plastic fork, plastic knife, plastic spoon, a plastic plate, a green plastic straw for a cold beverage, and red plastic coffee stir stick
  - "Cookie/chip bags and candy wrappers" is the text under a picture of an empty cookie bag, an empty chip bag and a balled up candy wrapper
  - "Condiments" is the text under a picture of a packet of wassabi, a packet of ketchup, a packet of mustard, and a creamer container
  - There is a logo for MIT Facilities Environmental group (web.mit.edu/facilities/environmental) in the bottom right corner

This initial mini-study has led to designs for a follow-on observation, which will be conducted as part of future work and is beyond the bounds of this thesis. The follow-on observation will specifically investigate people's behavior when they deposit more than one item or one item made of more than one material. If possible, the follow-on observations will also contain an assessment of these recycling bins for correct sorting.

My teammates and I also did anecdotal observations of the disposal receptacles themselves as we visited different locations throughout the North American Northwest. This anecdotal observation coupled with the emergence of the importance of customer behavior in the both the January Workshop and the Cup Summit 2 has suggested another future, mini study. In this proposed mini observation, I will document the number of types of receptacles and instructions-to-users within a closed system, namely the MIT main campus. Procedurally, I will walk through each floor of each building and photographically document all the visible (visible in public spaces, without entering private offices) disposal receptacles. From these photos, I will quantify the number of architectures of receptacles, the numbers of different wordings and images on the signage, and the ordering of the waste stream receptacles in relation to each other. In preparation for this study, I am in the process of verifying that the MIT campus is indeed a closed system for waste; that is, that all waste collected anywhere on MIT's campus is coalesced into its destination streams (compost, recycling and landfill) before leaving campus.

Starbucks Cup Summit 2

Cup Summit 2 was on 22-23 April 2010 in the MIT Media Lab's 75 Amherst Street building. Dr. Peter Senge of MIT's Sloan School of Management and the Society for Organizational Learning facilitated. I worked with Dr. Senge and the Starbucks Summit Steering team to create a detailed agenda for the two-day summit. The detailed facilitator agenda is in Table 3.

Table 3 Detailed Facilitators' Agenda for Cup Summit 2, 22-23 April 2010 at MIT in Cambridge, MA

THURSDAY APRIL 22		
Steering Team Convening & pre-drawing diagrams, flipcharts, etc.	Liz, Sue, Jim, Ellen, Jimmy	8:00-10:00
Set Up	Igor, Hila, Jo (10:30), Ingrid	10:00-12:00
Lunch & Introductions & Aims - Talking over lunch about what they hope to accomplish - Jim present Recyclable Cup project, workstreams, pilot tests (Jim to update on NYC Cup test, with possible add-ins from Joe Burke from audience). SF and Toronto FOH implementation, USCM outreach. - Cup Summit I video (Elise to provide) - Participant introduction by organization or by supply chain role - Harvest back from a few small groups about what hope to accomplish	Jim	12:00 – 1:00
Intro MIT team & explain why systems approach - Vision for cup initiative - Pose the following questions o "What sort of end results would characterize real success for you in this undertaking?" o What would have to happen and who would have to make it happen in order to increase the value and volume of reclaimed streams or other zero-waste options? o Is there something besides increased volume and value that will increase reclamation of value/energy in used disposable cups or other zero-waste options? - Review Big Picture diagram for a circular system for cups	Peter	1:00 – 2:00

- ALSO, DO WE OPEN A SHORT CONVERSATION HERE ABOUT AREAS OF HIGHEST LEVERAGE? (- Enacting the System: Having one representative from each phase of the cup's journey through the system convene at the front of the room to act out the cup's journey in an interactive theatre style (i.e. the "audience" directs the actors as they hand off to each other representatives of the materials flowing in the system). Almost a living material flow diagram, if you will. E.g. suppliers take in paper fibers and make cups, hand off cups to SBUX, who hand of cup+coffee to customer who hands off empty cup to hauler who hands off cups+other recyclables to MRF who hands off bales of cup material to suppliers/mills. o Where do the breakdowns occur? o Have the upstream participants draw a representation of their materials on paper first (for 20 seconds) (e.g. paper cup makers draw trees, pulp, rolls. Use a physical paper cup and physical plastic cup for up to pulp and pellets again.) o Need a volunteer from: earth, material suppliers (paper and plastic), cup makers, food retailers, consumer, bin = table, hauler, recycler, other products		
Summary of Key Learnings to date 60 - 75 minutes - Cup summit 1 (hear from different folks who were there, including business, recyclers, NGOs, and municipalities) - Regulatory updates (e.g., steps being taken by different municipalities – a representative from Cascadia Consulting and Chair of the Washington State Recycling Association has agreed to discuss Seattle Public Utilities' Single-Use Food Packaging Regulations which takes effect July 2010 and that Cascadia is helping to implement. - MIT Sloan project (Ellen Czaika and Starbucks partners for MIT) o Posting (some) artifacts/drawings from Jan and discussing the themes that arose in the Workshop dialogue o We will have written on flip charts (Standards, packaging; Standards, post consumer material; Driving volume and value; Changing consumer behavior; Regulatory requirements) so that are available to be seen during the later breakout session. (we'll have it written on 3 pieces of flip chart paper so we can post near each main grouping of World Café tables; Key industry feedback on what people have been doing on workstreams or related projects		2:00 – 3:15
Elise has requested time for a Live Talk session at this time, probably only have 15 minutes. Group goes to break	Jim, Peter	3:15 – 3:30
Breakout Session 1 90 minutes - Explain three sections to be followed – paper, plastic, retail. Explain - coding of nametags. - Project key levers identified in workshop: o Standards, packaging o Standards, post consumer material o Driving volume and value o Changing consumer behavior o Regulatory requirements - Participants are already seated at World Café tables; they will mix up to find tables/conversations of interest.), Participants will self select to a small group of high interest, but make clear all groups should consider all levers in the discussion. World Café tables in three basic large clusters of tables, one for each section; each table works on these Focus questions addressing their area of energy. - Focus Questions to be projected while the small groups are meeting o What are key, concrete next steps in building business-, consumer- and governmental commitment to increasing value and volume in reclaiming disposable cups or alternative zero	Peter Jim, Sue, Liz serve as roving *light* facilitators in each section, monitor for "superstar" ideas Ellen, Jimmy and MIT students circulate as *light* facilitators and capture key ideas from various groups, monitor room	3:30 – 5:00

waste solutions? ○ What would constitute a meaningful next stage pilot project from your point of view? ▪ Why - what specific key accomplishments would such a project need to demonstrate? ▪ What major challenges would such a project face and what would it take to meet and learn from these challenges? - Each group writes a short summary of responses to Question 1 ("Key Developments Needed") on flip chart: - Section reconvenes, all these charts are collected for the section and summarized and posted in main meeting space.	"temperature" Elsa and friend in materials conversations MIT students and SBUX help condense each section's development ideas	4:30 – 4:45 4:45 – 5:00
Briefly reassemble in Whole Group (500PM) 20-30minutes - Quick overview of key developments needed from each breakout to enable informal conversations during reception (can we narrow down the key ideas as a large group here?) - Ask what is missing – what needs to come out from the group as a whole - Quick overview of the next day's starting plan.	Peter	5:00-5:30
Reception		5:30 – 7:00
Steering team reviews output from groups/sections to summarize ideas into key tracks to plan in more detail Friday (or could steering team meet during first 30 minutes of reception?)	Peter, Jim, Sue, Liz, Ellen, Jimmy	7:00 – 7:30
SBUX partners, Peter, Ellen, Jimmy, Igor, Assem go to dinner for further discussion		7:30
FRIDAY APRIL 23		
Set up	Liz, Sue, Jim, Ellen, Jimmy, Hila, Igor, Evan, Ingrid	7:00-8:00
Coffee & pastries – Coffee Tasting led by local District Manager (this is informal and will be very quick)		8:00 – 8:15

Open Conversation: Where are we and what would constitute key Next Steps for our overall goals? 15-30 minutes - Perhaps go over Roca Stage of Change Model in preparation for group work.	Peter	8:15 – 8:30/8:45
Begin synthesizing solution tracks. Post key ideas on each World Café table by section (there may be some that cross over sections, too). Direct people to mix to World Café tables of interest to self-select tracks they feel they can contribute to. 90 minutes - What I need from others in order to be able to... - What I can offer - Links to other existing/planned initiatives outside SBUX value chain & new ideas/tracks being identified here - Identify individual commitments and timelines - Details of the initiative planning: o Intended outcome o Identify the organizing entity for the pilot o Identify a set of next steps for the next 3 months & assign responsibility o Identify pilot's role within overall plan for the vision -	Peter introduces, then must leave for another meeting 8:50 to 10:10 Ellen, MIT, Jim, Liz, Sue facilitate tracks *lightly* Elsa and friend in materials conversations	8:30 – 10:00
Quick Break		10:00-10:15
High level fitting together of tracks/pilots into motion towards overall vision 60-75 minutes - short summary of proposed pilots (following simple protocol) o Intended outcome o Identify the organizing entity for the pilot o Identify a set of next steps for the next 3 months & assign responsibility o Pilot's role within overall vision ♣ Place-post-its on large system diagram - Review Big Picture diagram for a circular system: locate where different initiatives fall in the overall system (can be done as groups are reporting out) - Are there key areas or developments not addressed by the pilots? (refer to "Key Developments Needed" as identified at end of Thursday) - Where do we intend to be in one year in building momentum toward elimination of disposable cups?	Peter	10:15 – 11:30
Next steps (inc. responsibilities, reconvening, etc.) and wrap up 30 minutes • Elicit from participants: o Who will coordinate across pilots, o Who will convene the next meeting, o Are there specific steps the whole group wants to take in dependent of the individual pilots/initiatives?	Jim	11:30 – 12:00
Clean up/Take down	Liz, Sue, Ellen, Jimmy, Hila, Igor, Evan, Ingrid	12:00-til done (goal NLT 2:00)

As with the workshop we made slight real-time modifications to the agenda as the flow of the summit emerged.

Starbucks catered the event and as the participants arrived, they enjoyed lunch, coffee, and tea. Vice President of Global Responsibility, Benjamin Packard,

welcomed the participants and then introduced Director of Environmental Impact, James Hanna, who went over the developments since the first Cup Summit, gave a presentation of the importance of the cup initiative to Starbucks and introduced Dr. Senge, the Starbucks team, and the MIT team.

Nearly one hundred individuals from fifty-four organizations attended the summit.

Dr. Senge asked the participants to do a quick check in at their World Café tables with a guiding question about vision. He harvested a few key thoughts from some tables and described the systems thinking approach, including going over an updated version of a diagram used at Cup Summit 1, which is shown in Figure 12.

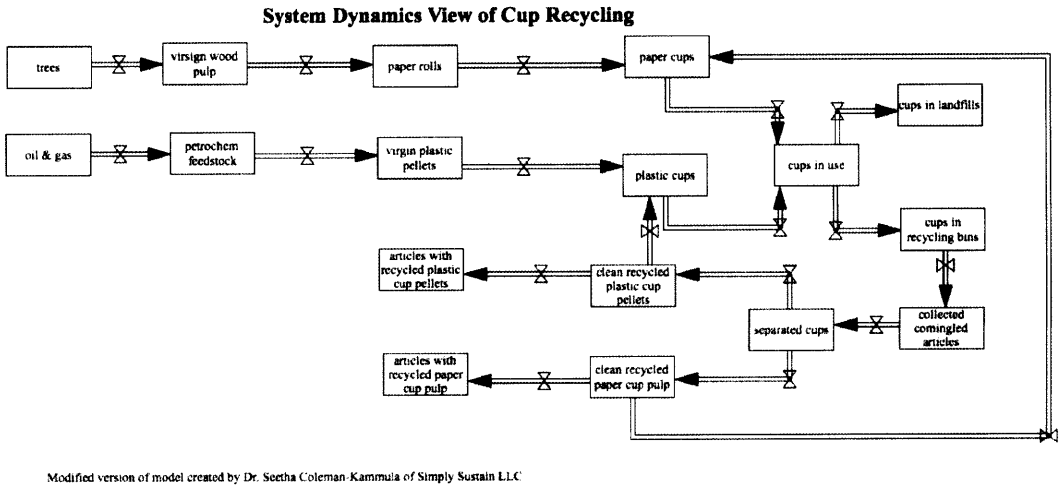


Figure 12 Material Flow Diagram Used as Dialogue Guide in Cup Summit 2 22-23 April 2010

I led the group through an exercise to make the system visible/enacted in the room. I asked for nine volunteers, one to be each of the earth, paper cup maker, plastic cup maker, retailer, consumer, a recycling receptacle, haulers, recyclers, and other products maker. Following the instructions of the "audience," these "actors" passed between them representations of the materials that flow through the system such as a drawing of trees, a Starbucks hot beverage cup with a cardboard sleeve and plastic lid, a plastic cold cup with a straw, a drawing of a bale of materials, etc. The "actors" were not allowed to act until they received direction from the audience about what to pass and when.

After "enacting the system," Mr. Hanna and other participants gave updates on initiatives that have taken place since the first Cup Summit. Speakers included representatives from a New York City pilot test to recycle hot beverage cups with old corrugated cardboard, and updates on the City of Seattle's ordinance to recycle or compost all single-use food containers by July 2010.

After a quick break, the participants grouped into three sections: paper materials, plastic materials, and retailers & services. These sections grouped in circles to

discuss initiatives; as an example of the three, the paper section's meeting is depicted in Figure 13.

Figure 13 Paper Section's Discussion of Initiatives during Cup Summit 2

Each Section broke out into smaller groups to work on the initiatives they identified. During the small group work, they addressed the questions displayed on the slide depicted in Figure 14.

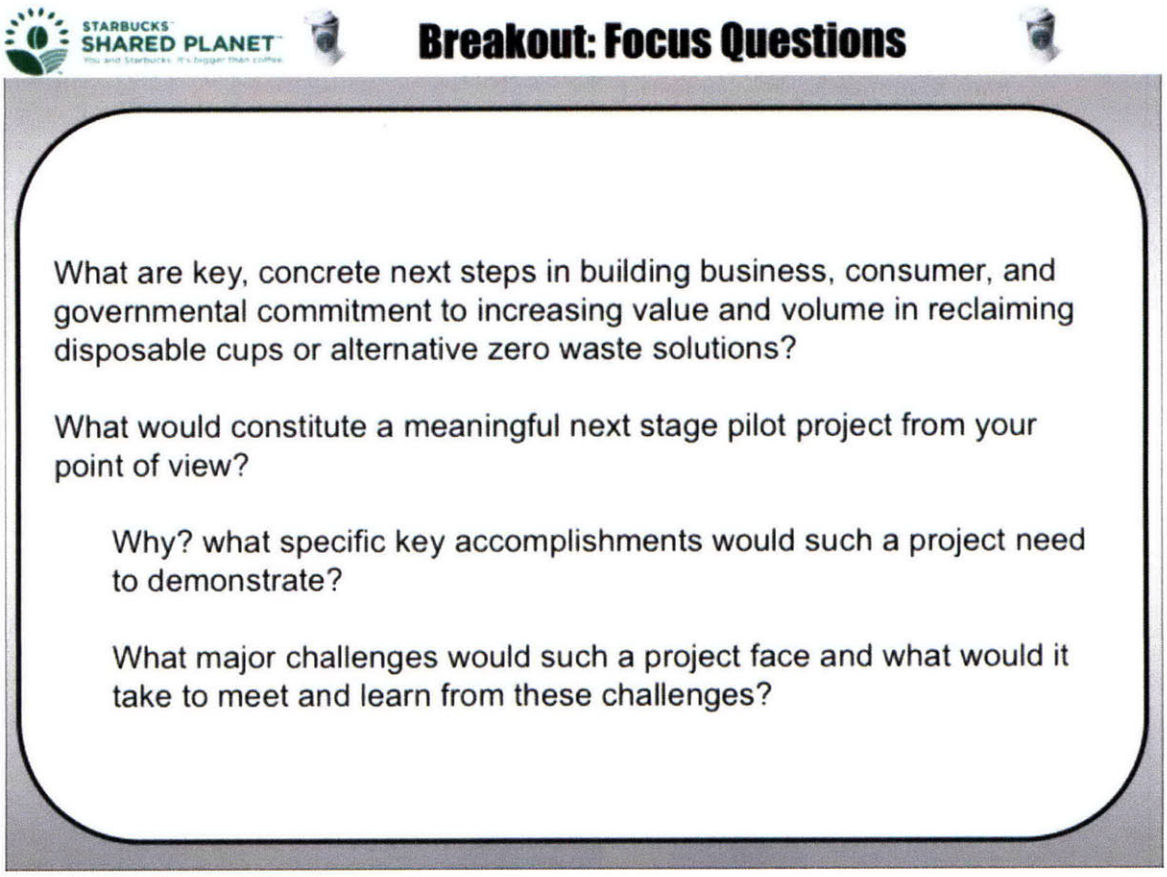


Figure 14 Instructions to Participants in Breakout Session 1 during Cup Summit 2

Before adjourning to a reception, the work groups reported out their results to serve as conversation sparks during the reception. After the reception, the steering team met to discuss the results from the day and to go over the plan for Friday. James Leppert, an MIT researcher and Society of Organizational Learning program manager's notes from the meeting are documented in Figure 15.

Notes from Thursday evening debrief
Ben, Jim, Sue, Peter, Igor, Ellen, Jimmy
Additions to Friday's agenda:
8am-8:15: Peter will open up morning

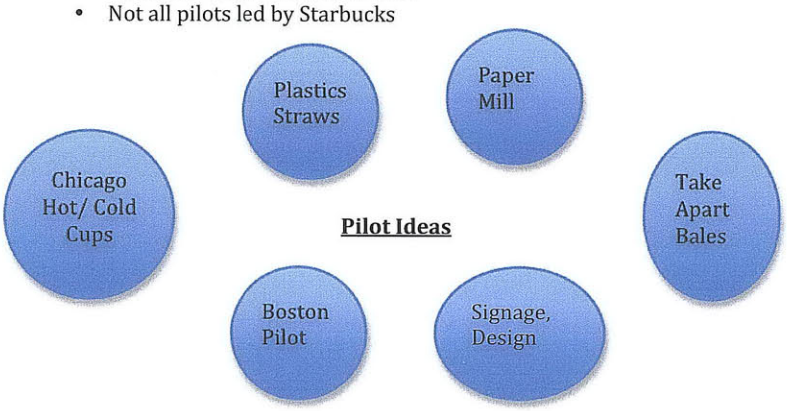
- don't lose sight of community building in this effort
- next generation of 8 cities
  -path to goal and how to get to 80% of cities
- imagine extraordinary initiative years from now, what are the challenges
- discuss how we are hearing this process through the buckets

9-10am: planning, what's our next step

- understand you may not have authority
  -what do people need to hear to move into action?
  *understand their legitimate confidentiality but don't let up too early
- How do we coordinate across pilots?
- Project Timeline
  -drive for more solutions
  -city by city scenarios
- Is there anything we are missing?
  -**name** the tensions in the room
  -standards?
  -How should we as a group interact with/ approach municipalities?

PILOTS
Leverage Points with pilot projects

- Something Starbucks can do that no one else can
- Both (Starbucks and others) stepping forward on projects at the same time
- Starbucks steps further forward
- Not all pilots led by Starbucks



-Zero Waste zone
-Faneuil Hall area
-co-retail solution

-design meets human interaction
-Clearing House
-this is what we want
-hot to recycle video
-who investing?
-joint venture/ volunteers to help funding

Figure 15 Notes from Steering Committee Debrief for Cup Summit 2

Day two commenced with a brief coffee tasting lead by a local Starbucks partner. Dr. Senge opened with a brief discussion to restate the vision and explained the Roca process of development: pre-contemplation, contemplation, planning, action,

sustaining, and allowances for relapse back to planning from action and sustaining (Baldwin 2010). He translated the Roca process of development into the concept of having urges, pilot ideas, and pilots for effecting change in the cup system. To maximize the small group working time and individual commitment to the initiatives, he let the participants self divide according to their current area of interest, which could be a different group than they participated in the day before. In the small groups, the pilots addressed:

- What I need from others in order to be able to....
- What I can offer
- Links to other existing and being planned pilots
- Identifying individual commitments and timelines
- Details of the pilot planning:
  - Intended outcomes
  - Identify the organizing entity for the pilot
  - Identify a set of next steps for the next 3 months and assign responsibility

The slide shown in Figure 16 was displaying during this small group work.

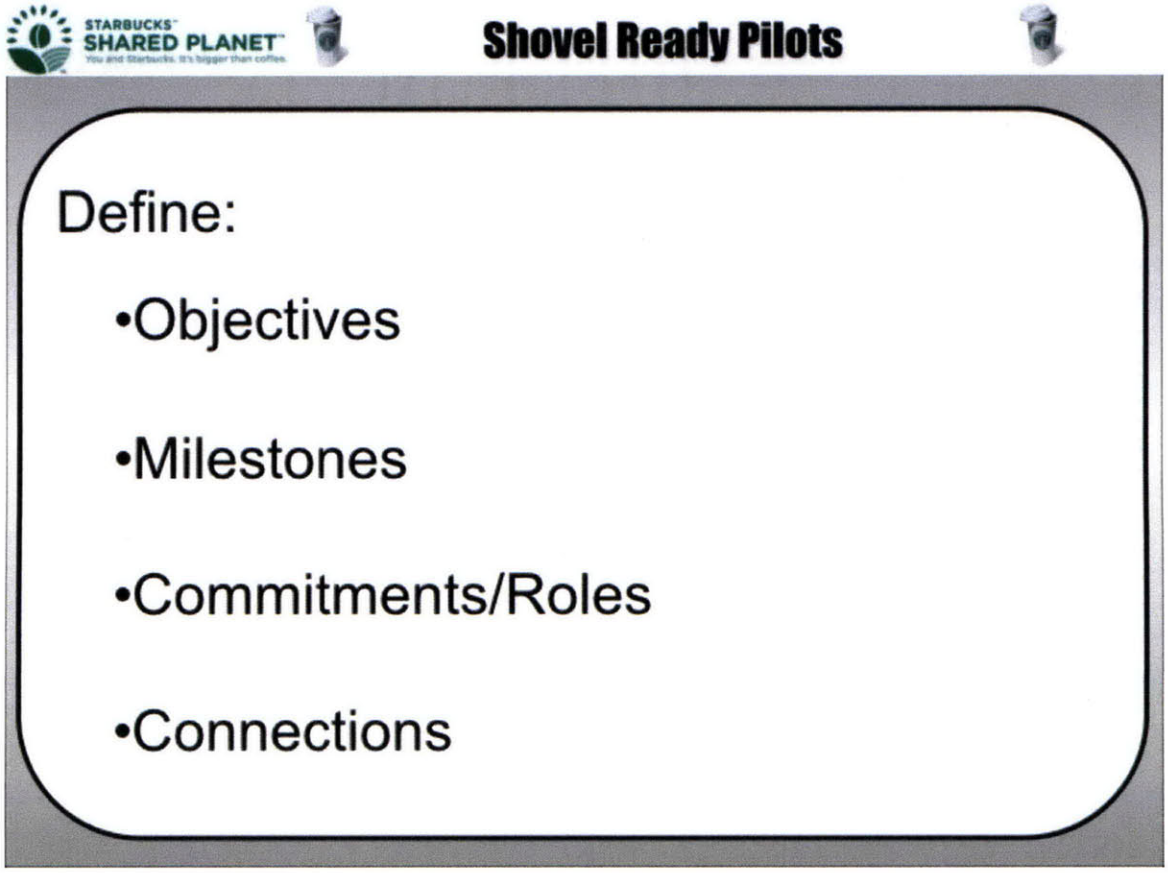


Figure 16 Instructions to Participants for Breakout Session 2 during Cup Summit 2

As they were wrapping up, we asked them to write any urges they had identified along the way in their discussion on a pink sticky note, pilot ideas on blue sticky notes, and the name of their main pilot (if they were at that stage) on a green sticky.

Then, each group reported back to the whole group explaining their plans, needs, overlaps with other initiatives, and commitments. They also put their colored sticky notes on a large mural of Figure 12 to display the coverage throughout the system, to identify more potentials for overlap and so that each organization can see pilots being planned in their area of the value chain.

After the report outs, Dr. Elsa Olivetti of the MIT Materials Science Laboratory and the Center for Transportation Logistics reported on research on life cycle analysis and a representative from Beta Cup spoke about the competition Beta Cup has been hosting for designers to address the recyclable cup problem (Beta_Cup 2010).

The Summit concluded with the full group itemizing where they would like to be in a year and closing remarks by Starbucks Vice President Benjamin Packard.

Chapter 4: Case Study: Starbucks' Initiative to Recycle Hot Beverage Cups

Motivation for Starbucks' Initiative to Recycle Hot Beverage Cups

Starbucks' initiative to create a system to recycle their hot beverage cups is motivated by diverse interests that are united by their commitment to their corporation's social responsibility. Each of the nine Starbucks teams with which my team and I met during our three-week imbedded project discussed their role, the impact of their role on others throughout the value chain, including small farmers and workers in overseas manufacturing plants, and candidly discussed the problems they were encountering and the consequences of their function's/department's actions. This deep commitment to social responsibility throughout their operations and reach is one motivator for Starbucks' initiative. Not surprisingly, this socially responsible company has socially responsible customers who have asked Starbucks to recycle their cups. The "corporate" component of "corporate social responsibility" is the inherent motivation of corporations to remain in business. From a business perspective, Starbucks wants to retain these socially conscious customers, win others who are presently unaware of Starbucks' ingrained social responsibility, and position themselves and their industry to guide and influence regulation. Furthermore, Starbucks intends this initiative to engender customer, industry, and supply chain support for future environmental initiatives as well as influence regulation in municipalities. This later is important, if regulation at an individual municipal level is significantly different, Starbucks and other national/global corporations will incur high costs meeting different regulations in each municipality in which they operate.

History of the Hot Beverage Cup Recycling Initiative

The "Cup Project" is one of five work streams Starbucks identified. In May of 2009 Starbucks convened a Cup Summit facilitated by Dr. Peter Senge of MIT and the Society for Organizational Learning, in Seattle.

As part of the Leadership Lab class team project, two Sloan Fellows and I conducted a workshop with 21 representatives from 6 roles throughout the cup value chain. For several activities, we broke the stakeholders into these six groups; for others, we convened all attendees to elicit the products of the small groups.

During the option generation phase in the January Workshop, one small group comprised of experts in paper products production identified that having a market for the material contained in used poly-coated hot cups would be instrumental to incentivizing a recycling system for that material. To have a sustainable market for the post consumer poly-coated material, the material needs to be of reliable standards and of sufficient volume and value. In the full group closure to the workshop, a participant from the recyclers group suggested creating a name for this material. His question sufficiently translated the technical suggestion of the paper

products group into language and simple reality around which everyone coalesced: "why don't we give this stuff a name."

Other key concepts that surfaced at the workshop included the theme of geographical differences that must be coalesced into a united approach, regulatory requirements, standards for the packing material (pre-consumer), and the role of customer education. However, although not discussed at the workshop, the latter is one of the mechanisms for bringing about customer behavior change. Given the context of their comments about consumer education, the participants were largely using "customer education" as a proxy for "customer behavior change." That is, they assumed that the education would result in behavior change and did not peel back the layers to investigate other means of bringing about this customer behavior change. Had we, the facilitators, picked up on this during the workshop, as opposed to in our post-workshop analysis, we would have inquired further about these assumptions, definitions, and other means of encouraging customer behavior change.

In the last section of the workshop all attendees collectively discussed suggestions for Cup Summit 2 planned for 22 and 23 April 2010 on MIT's campus. The primary suggestions were to have: more concrete results, pre-work assignments, and a report on Starbucks' progress on the cup recycling initiative.

Cup Summit 2 occurred on Earth Day 2010 and continued into the next morning. This 22-23 April 2010 convening of nearly 100 individuals from more than 50 organizations from throughout the take-away beverage cup value chain on MIT's campus. The participants created plans for nine pilots, some of which had their planned first steps occurring the week following the Summit.

Stakeholders of the Hot Cup Recycling System for the January Workshop

Using the "three circle" nomenclature from negotiation literature to describe the stakeholders of the system to recycle hot beverage cups helps identify participants for the Cup Summits and the January Workshop (Susskind 2008). In this nomenclature, the first circle includes those that are directly related to the system itself, the second circle comprises those whom the first circle identify and the third circle encompasses those who self-identify as they learn of the system/issue.

First Circle for the January Workshop

The First Circle stakeholders include value chain representatives, governmental regulators and other retailers of hot beverage products (e.g. Starbucks' competitors including other coffee shops, public venues that serve concessions). At the January 2010 Workshop, Starbucks was the only retailer but others participated in Cup Summit 2. At the January Workshop, the value chain groups represented included cup manufacturers (who are paper companies, many of which are vertically integrated with their own recycling arms), coffee retailers (represented solely by Starbucks), consumers (represented by Starbucks marketing employees), collectors/haulers, and recyclers (represented by companies that operate recycling facilities and consultants working in recycling). Governmental environmental

regulators are also in the first circle; in the January Workshop Seattle Public Utilities sent two representatives and the City of Bellevue had to withdraw their representative at the last moment. As with the automakers of Europe collaborating to suggest legislation regarding manufacturer's responsibility at end of life cycle, the governmental regulators can impact businesses' cost, markets, and taxes (Fricke 2008).

For the larger cup system, competitors are within the First Circle even though they were not included in the January Workshop. For example, the MIT-alumnus-owned and MIT community-serving, Clover Food Truck is working with MIT Sloan students to do a cost assessment of switching to compostable hot beverage cups (Clover_Food_Truck 2010). Competitors were not included in the January Workshop, but did attend Cup Summit 2. Such relevant competitors include other mainstream coffee houses, one-store coffee houses and cafes, Dunkin Donuts, McDonald's and other quick service restaurants (QSRs) that sell coffee and other hot beverages, and public gathering spots (like stadiums, movie theatres, convention centers, university dining services, corporate cafeterias, etc.) that serve concessions and hot beverage items.

Second Circle for the January Workshop

The second circle includes competitors from throughout the value chain, for example, other hot beverage cup makers and other recyclers. It also contains other food service container value chains like soup containers and take-out packaging for other food types.

Third Circle for the January Workshop

The third circle self-identifies as they learn about the issue, and in the case of the system to recycle hot beverage cups, the Third Circle can arguably be considered to include cities like Cupertino, California that instituted its own mandates preventing businesses from operating unless they comply with food container regulation (Hanna 2010). Such isolated regulation has large business impact for the businesses it affects and then ultimately for the cities' own tax revenues. Involving these municipalities in the creation of the system to recycle hot beverage cups will likely concentrate resources into useful and actionable efforts.

Consumers who select competitive retailers based on their recycling systems are also Third Circle stakeholders, as are interest groups identifying on any side of the issue.

Chapter 5: Results

The results are divided into Process Results and Substantive Results. Since this thesis focuses more on investigating the effectiveness of the methodology of Facilitated Systems Thinking in the design process in multi-stakeholder systems, the Process Results section is directly aligned with its purpose. Additionally, substantive progress achieved or not achieved in the Facilitated Systems Thinking intervention is descriptive of the intervention's efficacy. Furthermore, since this thesis is embedded in a longer-standing project, documenting the Substantive Results here will be useful in future parts of the study.

Process Results

Gaining a sense of individuals' thinking before and after the Facilitated Systems Thinking intervention helps in assessing the efficacy of Facilitated Systems Thinking in the design process of multi-stakeholder systems. As described above in Post-Workshop, Pre-Cup Summit 2 Interviews, I coded the pre-interview data and post-interview data using line-by-line coding, and compared them.

The coding categories were mention of or comments revealing awareness of: collaboration among the stakeholders, dialogue, convening stakeholders, one's own responsibility, others' perspectives and experiences, "closing the loop," the existing of the system itself, the evolution over time, learning from prototypes and pilots, the interrelationship between governments and commercial entities, advocacy, blaming others in the system, making analogies, incentives, constraints, awareness of others' leverage, and awareness of one's own leverage.

In comparing all the pre-workshop responses with all of the post-workshop responses, the incidences of comments suggesting increased system awareness doubled in the later. The topics experiencing increase in comment frequency are listed in order of the most increase to the least: (1) the most increase was seen in comments reflecting awareness of others in the value chain; followed by (2) discussion of specific or the general need for prototypes and pilots, (3) discussion of the speaker's and speaker's organization's leverage within the system and (4) discussion of the speaker's and speaker's organization's responsibility. Since the difference between these last two types of comments is fairly nuanced, I considered joining them as one category; this combined leverage/responsibility category had a greater increase in frequency of comments than the category reflecting awareness of others. That is, this combined category experienced the most increase in comment frequency. Furthermore, for this aggregation of all interviewees, after the workshop, there was a decrease in the number of comments blaming others in the system.

For the four individuals who participated in pre-interviewing, the workshop and post-interviewing, more comparative analysis is possible. However, because the number with complete data is so small, making general assessments from apparent trends within these four is tenuous. With that caveat, I note that three of the four

expressed more awareness of others in the system after the workshop as compared to before. Some were significant increases. The one that did not increase remained the same. Three of the four increased the frequency of their discussion of prototypes; the one that did not increase only slightly reduced prototype discussion. Three increased discussion of their own leverages in the system and the fourth had no change in frequency of discussion; three out of four increased their mention of their own responsibility in the system; the fourth only slightly decreased. Three out of four increased discussion of government-commercial interactions; the one that did not increase only slightly reduced discussion frequency. Only one had a change in his/her amount of blaming others; he/she made significantly fewer blaming statements after the workshop. This individual had had one of the highest frequencies of blaming others prior to the workshop. All increased their mention of the leverage others have in the system.

In many of the statements that reflected awareness of others in the value chain, customers were those "others." That is, many spoke about what they perceived the customers to be experiencing. This dataset does not contain any interviews with randomly selected customers, nor were any present at the January Workshop. An improvement on the methodology going forward would be to include randomly selected customers.

Substantive Results

In addition to assessing the procedural impact, assessing the substantive impact of the Facilitated Systems Thinking intervention addresses its efficacy. Furthermore, documenting the substantive results prepares for future research and especially development of this situation into case for use in multi-case analysis with other value chain change initiatives.

Pre-Interviews

As mentioned above, the pre-interviews served to get us, the facilitators, up-to-speed on the vantage points of the stakeholders, to build relationships with them, and to spur their thinking about the hot beverage cup recycling system.

We found that each individual supported a means of achieving sustainability that aligned with his or her organizational affiliation and/or role. For example, the haulers saw waste reduction as the means to improve sustainability and the manager of the City of Portland's composting initiative espoused composting as the favorable end of life for the hot beverage cup. Each individual was knowledgeable and passionate about his/her work and expressed interest in the Initiative to Recycle Hot Beverage Cups.

The key points the stakeholder groups expressed in their interviews are as follows:

Government (Public Utilities)

- SPU's regulation creates change in Seattle
- Don't want to be prescriptive regarding end-of-use option

- Composting better when material is food contaminated
- Investments in MRF technology and MRF technology advancements are key to growth of recycling.

Government (Composting Initiative in a Nearby City)

- Composting good for items with food waste
- Greater producer responsibility, thinking through entire production chain
- Not easy choice between recycling and composting
- Editorialized comment: might need to approach cup from technical requirements first (what will it take to recycle it) – cup might need to look different.

Suppliers of Paper Hot Beverage Cups

- Tully's experiment had trouble with consumers not source sorting
- Recycling is preferable to composting b/c retains value
- Making cups is an asset intensive business
- Ecotainer
- Clean frozen food cartons have highest scrap value anywhere (higher than office paper)- they are clean white strong fibers. Food contamination ruins their value.

Retailers

- Some preferred composting and others preferred retailing
- Performance issues with the cup tightly constrain the characteristics (e.g. must hold hot liquid for x hours without loosing its integrity, must pass non-contamination tests, etc.)
- 80% of cups leave the stores, leaving Starbucks' direct influence
- Customers are confused on what to recycle
- If many cities enact their own and different regulations, it will be prohibitively costly for Starbucks

Haulers

- Municipal Contracts determine what is recycled
- From a customer's perspective, different things are recyclable, which is confusing to customers, this is one of the problems of open market recycling
- "Future is not in recycling but in reducing."
- Standardize what is recyclable. This will create more volume and confuse people less

- Cedar Grove does all food waste composting in area

Recyclers

- Waste stream analysis is national
- Balance between cost and performance and having cup break down in composting
- A critical question to be asked here: are their any chemicals that if added to pulping process they could breakdown the PLA - or react with it- without affecting the quality of the fiber
- Better signage and need recycling next to every garbage can
- The thinking about this issue should also include market drivers, as corporations have to make money and support shareholders.

- The solution lies in talking with each player and working across the value chain
- The best measure of success for any solution is market penetration or market transformation. This can be observed through how many organizations are converting to recycling or compostable cups. The challenge of any solution is also making sure those materials get composted or recycled on back end

Overall the interviewees were very passionate about recycling, composting and other zero-waste end of life options. However, each championed an end-of-life strategy that paralleled their line of work. In comparison to the post-workshop interviews, in the pre-workshop interviews there was less awareness of others system stakeholders' perspectives, less talk about prototypes or pilot studies, less taking of responsibility for one's own actions, less mention of dialogue among stakeholders and less talk of collaboration among stakeholders or convened meetings among the stakeholders. There was more blaming of others in the system or the system itself. However, this comparison is less robust than it would have been if all the workshop participants had been both pre- and post- interviewed.

Assessment of Workshop Artifacts and Themes

Throughout the Workshop we had at least one of us capturing ideas on flip-chart paper that was visible to the full group. Additionally, during various activities, the participants either drew or wrote on flip chart paper. These artifacts are the main source of data for these assessments. We did not record, either with video or audio equipment, any part of the January Workshop. We did take photos of the flip chart paper and the participants working, many of which are included herein.

Report Out from the "Hopes and Concerns for the Day" Introductory Exercise

The expressed concerns for the day included: concern that everyone might not be open minded, that some stakeholders may have a vested interested in the system to recycle hot beverage cups not succeeding, about political resistance and lack of transparency, about focusing on Starbucks' perspective and not considering the costs to other parts of the system, and about the complexity of involving so many stakeholders. For the full list, please see Figure 17.

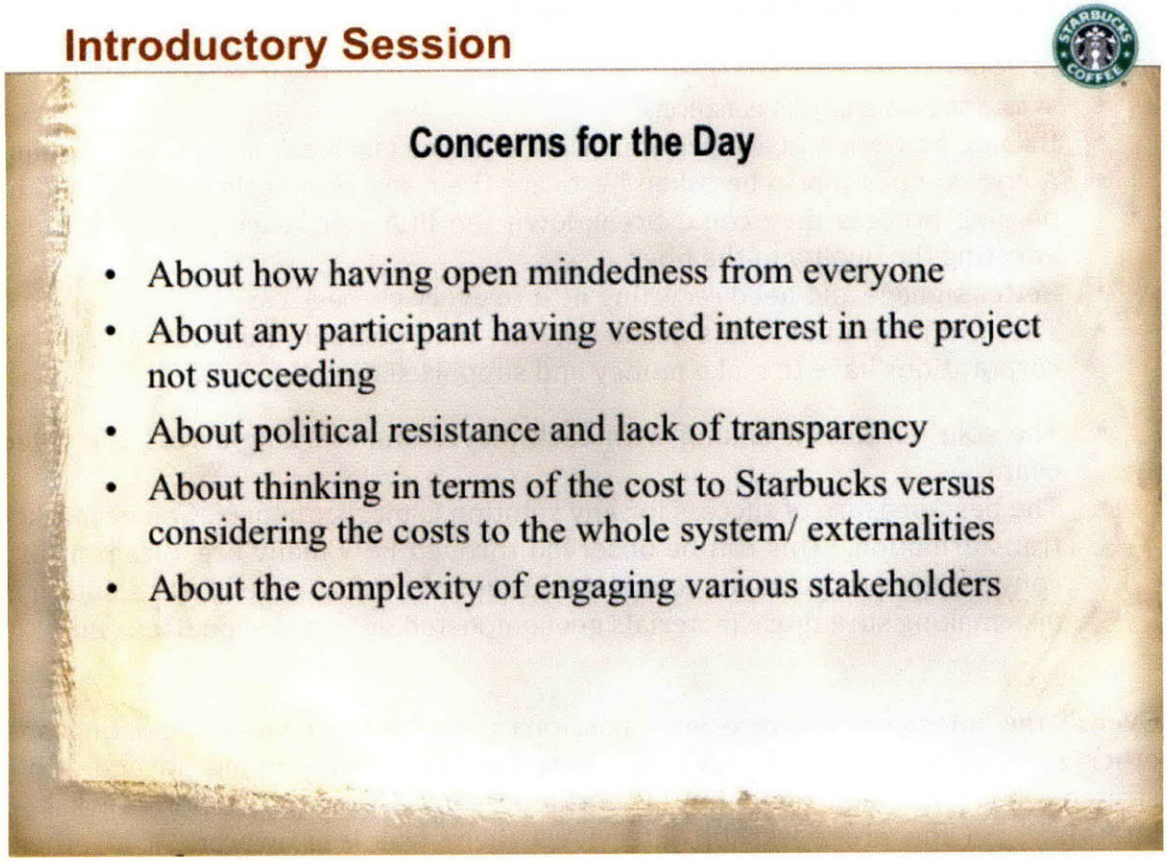


Figure 17 Participants' "Concerns for the Day," from MIT Outbrief presentation to Starbucks on 28 Jan 2010

Many of the reported hopes for the day were inverses of the concerns. The hopes that are unique include advancing towards a "Standards for Processing" to achieve global or national consistency, to cut across other packaging options (beyond the hot beverage cup), to be aware of assumptions and take a systems view, to generate risk and contingency planning, and to take advantage of the down market to create a robust approach. For the full list, please see Figure 18.

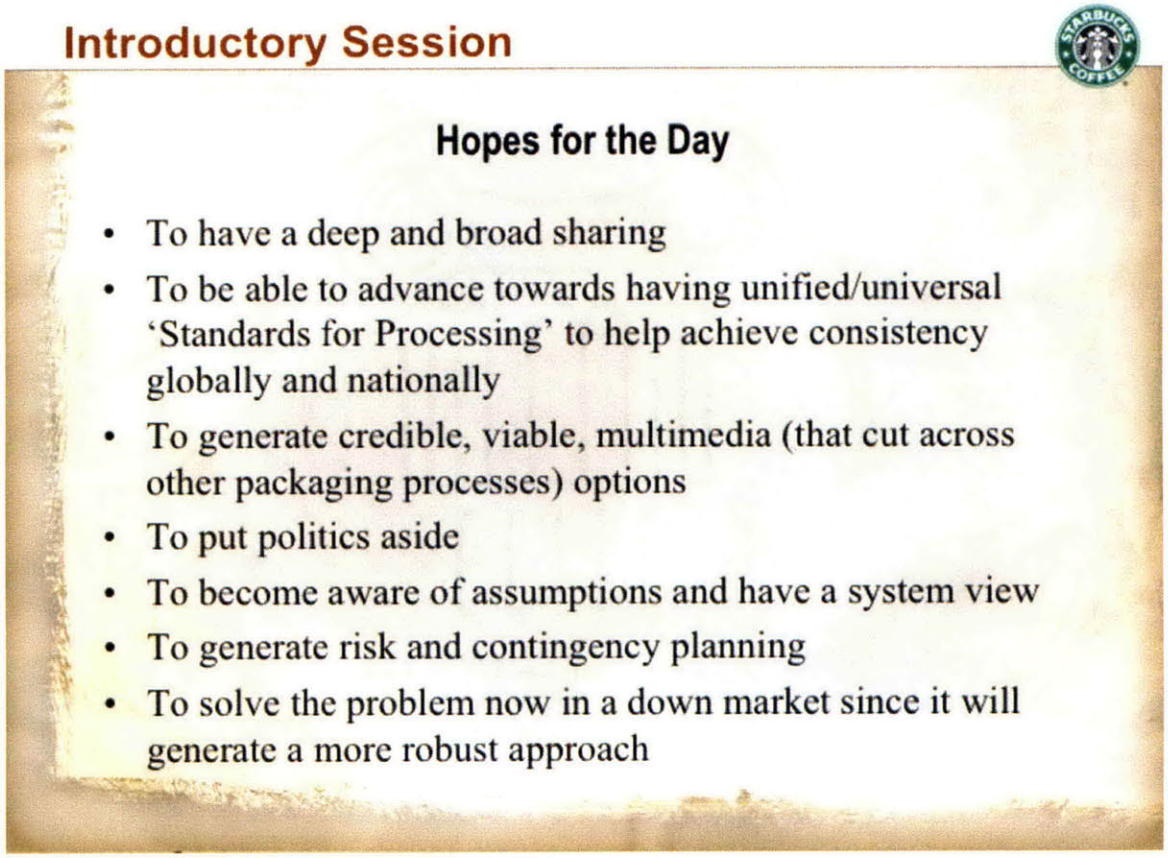


Figure 18 Participants "Hopes for the Day," from MIT Outbrief presentation to Starbucks on 28 Jan 2010

Report Out from the "Making the Value Chain Visible" Exercise

Figure 19 through Figure 23 and Table 4 through Table 8 were contained in the report out we gave to Starbucks displaying the drawing each team created and our summary of their report to the group. These are in the following order: Suppliers (Figure 19, Table 4), Retailers (Figure 20, Table 5), Haulers (Figure 21, Table 6), Recyclers (Figure 22, Table 7) and Government (Figure 23, Table 8). In the diagrams, the constraints are drawn in red and the incentives are in blue.

Suppliers

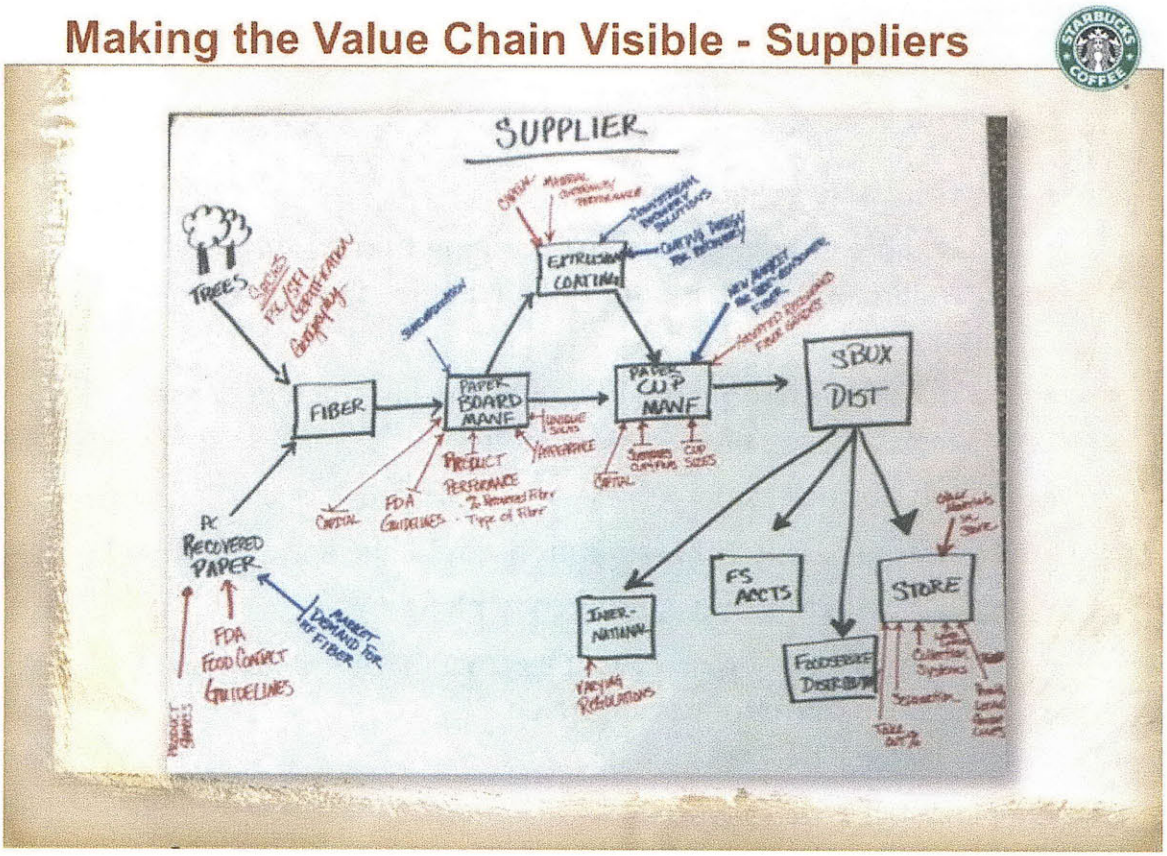


Figure 19 Suppliers Drawing of the Supply Part of the Value Chain, from MIT Outbrief presentation to Starbucks on 28 Jan 2010

Table 4 Suppliers' Reported Incentives and Constraints

Suppliers' Reported Incentives	Suppliers' Reported Constraints
Sourcing Trees for Fiber: None reported	Sourcing Trees for Fiber: - Species - FSC/SFI Certification - Geography
Sourcing Recovered Paper: - High Market Demand for Recovered Fiber	Sourcing Recovered Paper: - Product Specs - FDA Food Contact Guidelines
Paper Board Manufacturing: - Standardization	Paper Board Manufacturing: - Capital Intensive - FDA Guidelines - Product Performance (% Recovered Fiber and Type of Fiber) - Appearance

	- Unique Solutions
Extrusion Coating: - Downstream Recovery Solutions - Coating Design for Recovery	Extrusion Coating: - Capital Intensive - Material Performance
Paper Cup Manufacturing: - New Market for Pre-Consumer Fiber	Paper Cup Manufacturing: - Capital Intensive - Substrates- Cup and Film - Cup Sizes - Accepted Recovered Fiber Grades
Starbucks Distribution: - Standardization	Starbucks Distribution: - Varying Regulations according to different International Market
Starbucks Stores: None reported	Starbucks Stores: - % Take out - Separation - Collection Systems - Land Lords - Permitting - Local Guidelines

Retailers

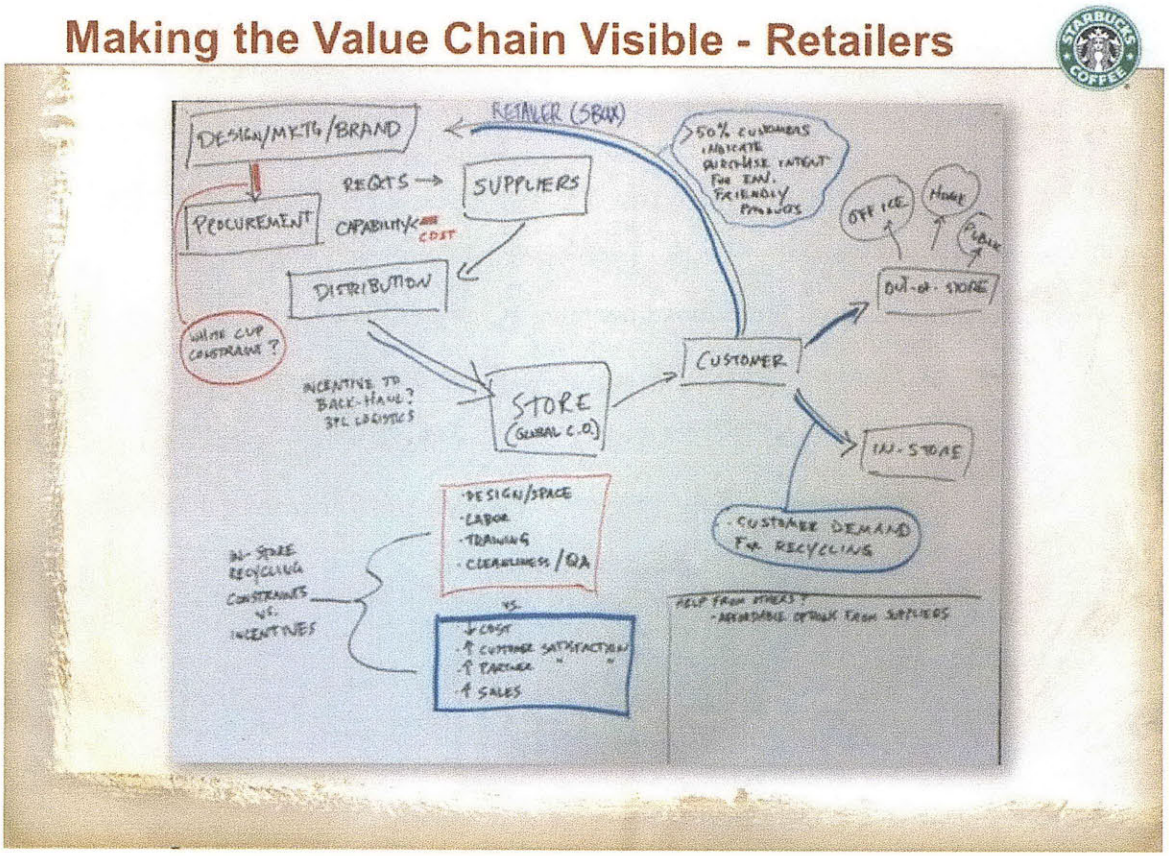


Figure 20 Retailers' Drawing of the Retail Part of the Value Chain, from MIT Outbrief presentation to Starbucks on 28 Jan 2010

Table 5 Retailers' Reported Incentives and Constraints

Retailers' Reported Incentives	Retailers' Reported Constraints
Marketing: None reported	Marketing: - Cup Design
Stores: - Lower costs - Higher customer satisfaction - Higher partner satisfaction - Higher sales	Stores: - Design/Space - Labor - Training - Cleanliness / Q.A.
Procurement: None reported	Procurement: - Cost
Customers: - Demand for recycling	Customers None reported

Haulers

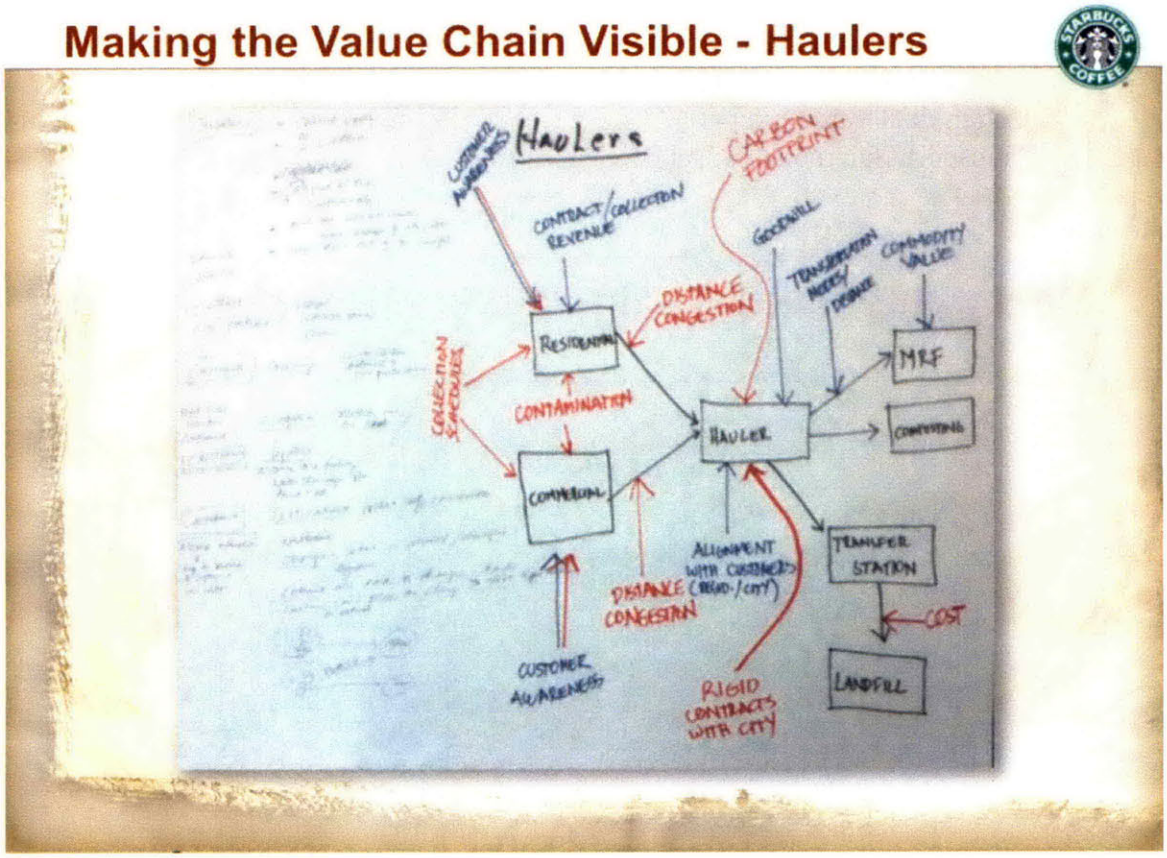


Figure 21 Haulers' Drawing of the Hauling Part of the Value Chain, from MIT Outbrief presentation to Starbucks on 28 Jan 2010

Table 6 Haulers' Reported Incentives and Constraints

Haulers' Reported Incentives	Haulers' Reported Constraints
Residential: - Customer Awareness - Contract / Revenue	Residential: - Customer Awareness - Collection Schedules - Contamination - Distance / Congestion
Commercial: - Customer Awareness	Commercial: - Collection Schedules - Contamination - Distance / Congestion
Hauler: - Goodwill	Hauler: - Carbon Footprint - Transport cost

Government: None reported	Government: - Rigid contract
MRF: - Commodity value - Transportation mode / distance	MRF: None reported

Recyclers

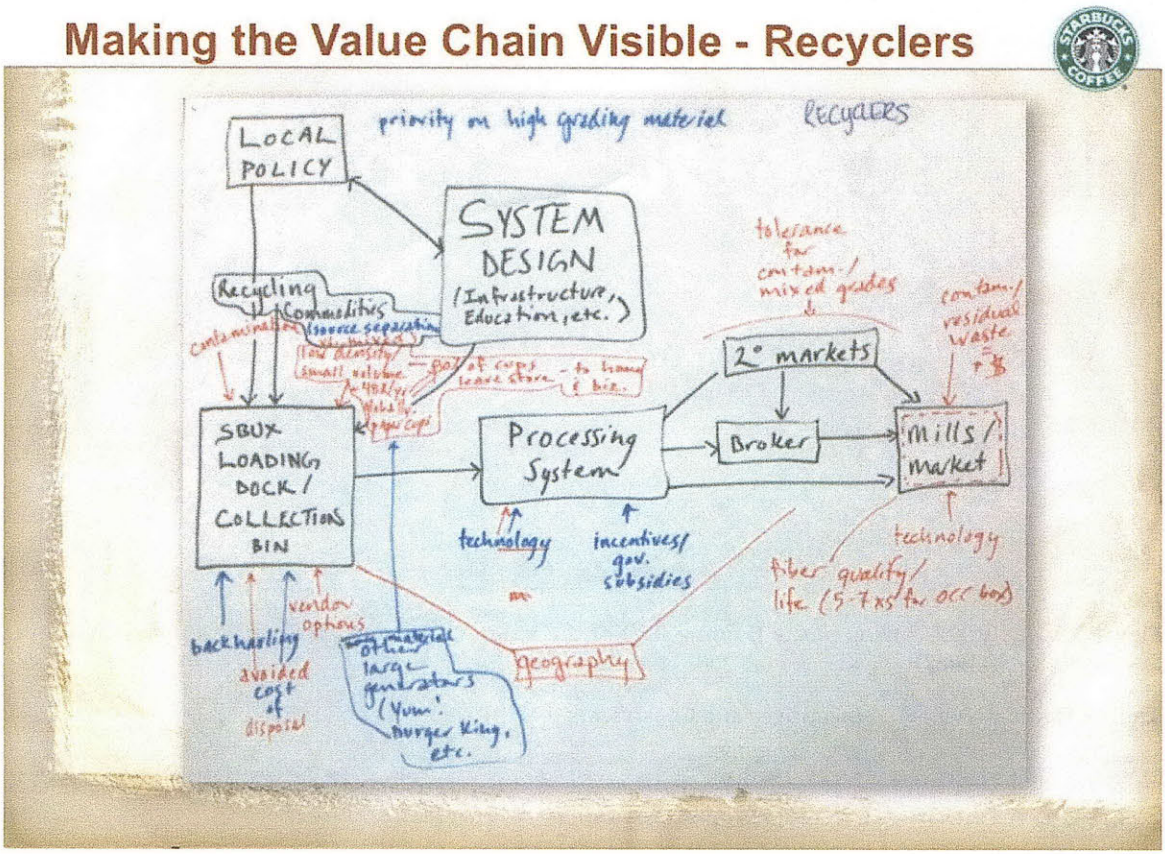


Figure 22 Recyclers' Drawing of the Recycling Part of the Value Chain, from MIT Outbrief presentation to Starbucks on 28 Jan 2010

Table 7 Recyclers' Reported Incentives and Constraints

Recyclers' Reported Incentives	Recyclers' Reported Constraints
Local Policy: - Priority on High Grading Material	Local Policy: None reported
Starbucks Loading Dock / Collection Bin: - Avoided cost of Disposal - Backhauling - More Materials from Other Large	Starbucks Loading Dock / Collection Bin: - Low Density - Small Volume- 48K Tons/Year

Generators: Yum!, Burger King, etc	Globally - 80% of Cups Leave Store to Home and Businesses - Avoided Cost of Disposal - Geography - Contamination
Processing System: - Technology	Processing System: - Technology - Government Incentives and Subsidies
Secondary Markets: None reported	Secondary Markets: - Tolerance for Contamination/Mixed Grades
Mills/Market: None reported	Mills/Market: - Technology - Fiber Quality/Life (5-7 xs for OCC box) - Contamination/Residual Waste Leads to Cost Increase

Government

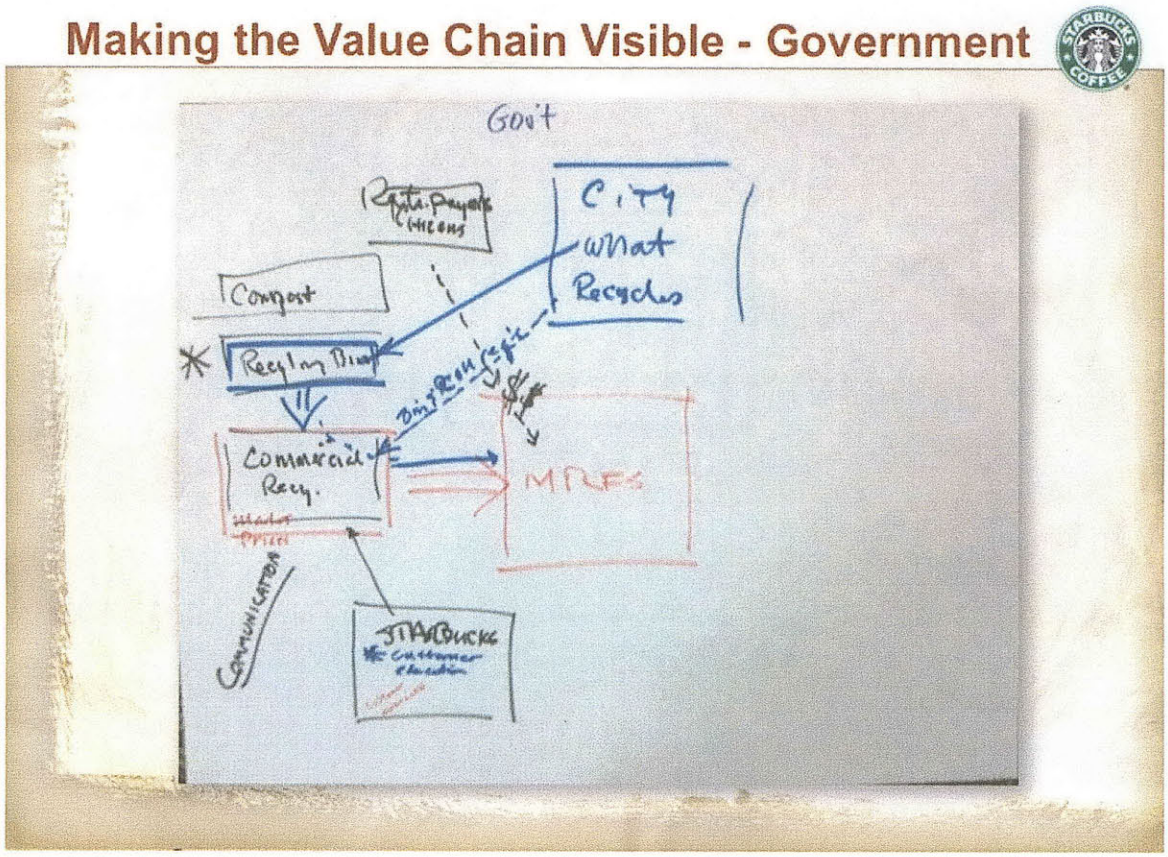


Figure 23 Government's Drawing of Government Part of the Value Chain, from MIT Outbrief presentation to Starbucks on 28 Jan 2010

Table 8 Government's Reported Incentives and Constraints

Government's Reported Incentives	Government's Reported Constraints
City: - Define what is recyclable - Define regulations for recycling bins and collections	City: None reported
Commercial Recyclers: None reported	Commercial Recyclers: - Market prices for commercial recyclers;
Starbucks: - Customer education	Starbucks: - Customer awareness

Report Out on "Needs and Offerings"

The participants identified the "needs and offerings" as shown in Figure 24 and Figure 25.

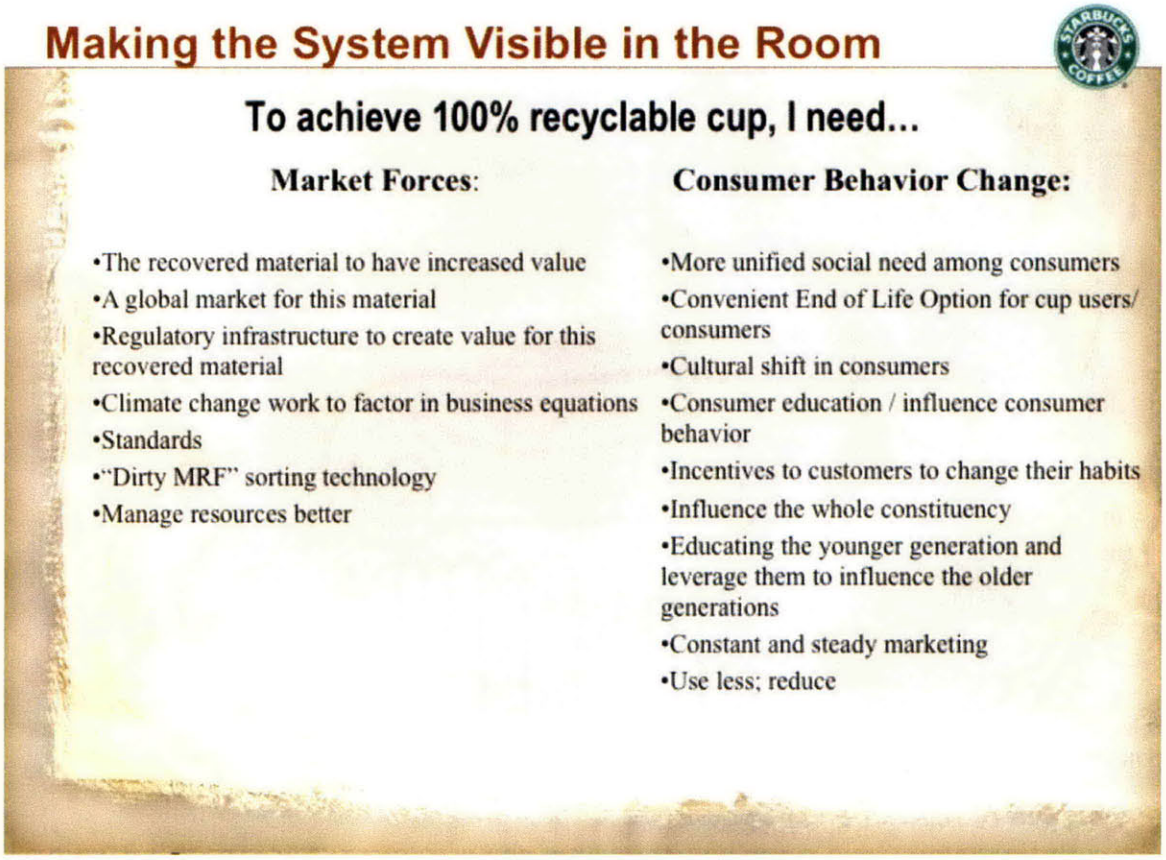


Figure 24 Report Out on "Needs," from MIT Outbrief presentation to Starbucks 28 January 2010

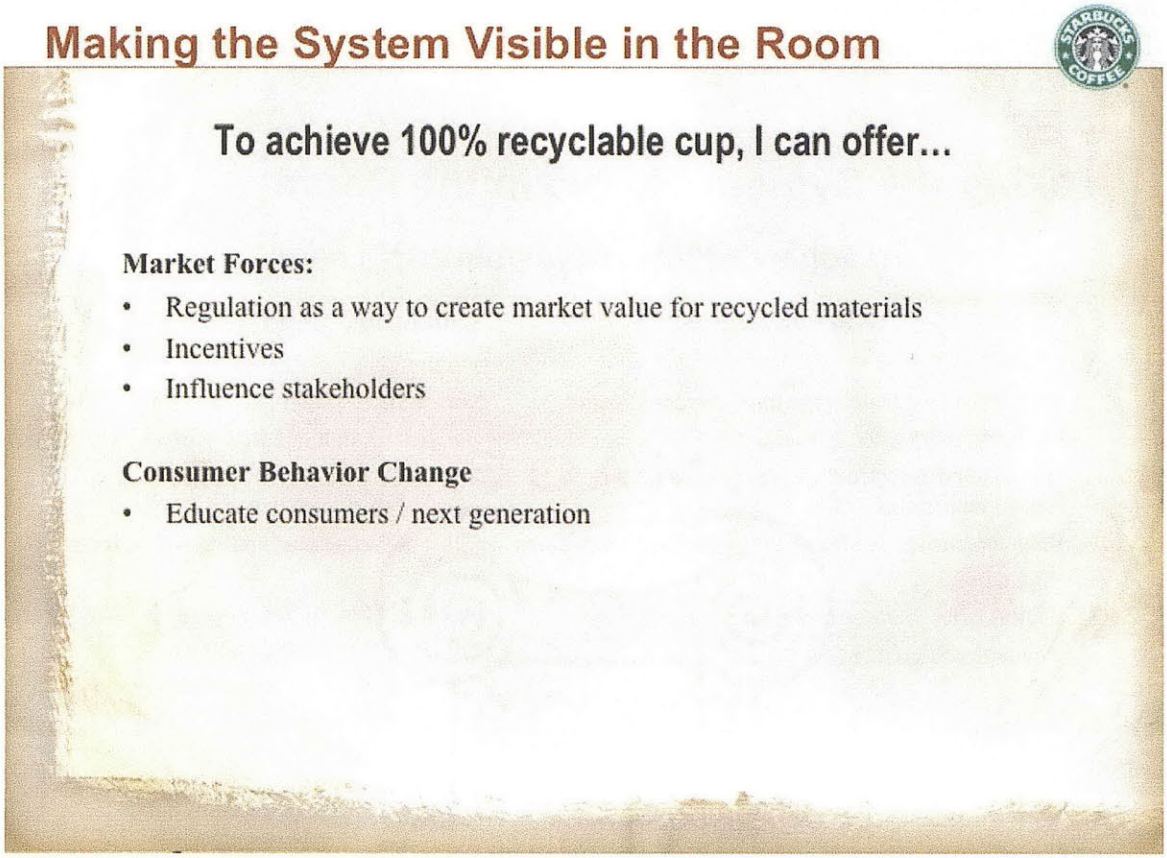


Figure 25 Report Out on "Offerings," from MIT Outbrief presentation to Starbucks 28 January 2010

Report Out of "Elicitation of Options"

As with the value chain drawings, the value-chain-role small groups reported back to the full group on their favorite, most promising and most difficult ideas. Table 9 displays the ideas by stakeholder role.

Table 9 Stakeholders' Reported Favorite, Most Potential, and Most Challenging Options; orange text signifies standardization and market creation; purple text represents policy/regulation; blue text represents customer education/behavior change; green text signifies ad hoc organization forming among value chain stakeholders; black text indicates un-categorized ideas.

Stakeholder Role	Favorite Idea	Most Potential	Most Challenging
Suppliers	• Develop new recovered fiber grade with ?% of food contamination.	• Redefining "Recyclable": infrastructure, contamination.	• Closed loop recycling: Cup-to-cup.

Retailer	• Enlist partners to educate customers.	• Standard government regulations on recycling/composting, with collaboration of retailers and MRF.	• Cultural education on recycling.
Haulers	• Influencing the supply chain to design for end of life. • Leveraging the loyalty of the customer base.	• Continuous education	• Achieving consensus around common goals
Recyclers	• Take the used cup back and use it as biofuel • Incentive to bring your own mug convenience or get offered durable mug; • 80% of cups that leave the store – big opportunity!	• SBUX as PR educational vehicle (bring about cultural shift; ads, posters, bins, customers services) • Cup into OCC stream. • Partner with competitors (CEO-to-CEO, market influence, boost volumes).	• Is the volume large enough to handle separately?
Government	• Use the influence you have to support progressive recycling policy: Retailers; Individuals; Business representing their customers.	• Standardization of packaging design/material	• Universal-Common Standards

The themes from the small groups reports include: (1) standardization and market creation, (2) policy and regulation interventions, (3) customer education, and (4)

consensus building and ad hoc organization formation among the stakeholders themselves. There were also some other ideas that did not fit neatly into a category. The upcoming section "Overall Themes" contains further discussion of these themes.

Wrap-Up Conversation

During the final full group report-out, the group reached a Theory U "bottom of the U moment" or presencing moment (Scharmer 2007) when a recycler suggested, "We should give this stuff a name." He was referring to the material in a used hot beverage cup and made analogy to old corrugated cardboard (OCC). OCC, which has a stand-alone market, is a valuable recycling commodity. The recycler's comments followed a suggestion by a paper maker that the material should have a market created for it where individuals would be able to buy and sell this material with known quality and characteristics. When the recycler made his common-vernacular rephrasing of her technical suggestion, the group grabbed on. Participants started to sit up in their chairs, lean forward, and smile. The remainder of the conversation focused on next steps: on how to create a market for this material. Interwoven in these musings about creating a market for the Old Poly-Coated Paper material were suggestions for the next Cup Summit.

Overall Themes

Several themes emerged in our assessment of the artifacts of the workshop. During the workshop, we three MIT students rotated among us the duty of recorder, capturing the groups' ideas on large paper (Susskind and Cruikshank 2006); these recordings are the primary source of artifacts. As noted earlier, we did not audio or video record the Workshop itself. Starbucks retained the physical hard copies for their future use. We presented these findings to Starbucks in a series of outbriefs, but primarily in a large Outbrief on 28 Jan 2010.

The main themes recurring throughout the participants' comments were customer education, a need for a market for the material, a need to accommodate local differences in a global system (geography matters), and a call for standardization.

In reflecting on the call for customer education at our outbrief meeting, we MIT students and Starbucks staff discussed that "customer education" was probably a proxy for what the participants really wanted: customer behavior change. They were likely really requesting that consumers change their behavior and assuming that education was the means to achieve this. The participants did not discuss other means for achieving customer behavior change – or customer participation in recycling hot beverage cups – such as creating the system so that customers can participate without changing their behavior, or with minimal behavior change. Customer education also seemed to be a request of many but not an offering most felt they were able to provide. The government was the lone spokesperson accepting responsibility for educating citizens at the workshop, though in their interviews, both hauling company representatives mentioned their company's customer education campaigns. It therefore may be a shifting the burden scenario where most stakeholders assume customer education is the convenient fix (and assume that someone else will do so), instead of exploring their own role in

encouraging and enabling customer behavior change (Senge, Smith, et al. 2008)(Senge 1990). When discussing customers, the participants also discussed the differing values throughout different geographical locations and how to spread values they considered as favoring preferable end-of-life options to areas that don't currently value them.

The participants were largely in agreement that without a market for the used cup material, there would be little incentive to recycle it. That is, if there were a standardized market where buyers and sellers could use agreed upon terms and definitions of quality and other characteristics, they envision this material becoming a valuable recyclable commodity. Aluminum is the most widely recognized recycled commodity of highest value. Office paper and old corrugated cardboard are also recognized as valuable. Each of these is sold in single-material bales. Aluminum is often separated out from a single stream with magnets and paper with rollers of varying sizes. The case of OCC is particularly relevant because paper makers created this market to feed their own mills, which the participants discussed, is analogous to closing the system for the hot beverage cup and other food packaging items.

The discussion about geographical differences largely focused on the different incentives throughout the country for recycling, landfilling and other end of life options. For example, in areas with cheap landfill tipping fees, there is very little incentive for any other end-of-life option. In these conversation threads, there was usually someone who voiced a reason for keeping landfill down, such as reducing carbon emissions, getting the most use out of fibers already created, and longer term projections about running out of landfill room. The stakeholders were not all in agreement here, with some preferring composting, others recycling, and some pointing out that although the Bay Area has composting legislation, it uses the compost produced as covering for the landfills. The "geography discussion" also pointed out that mill and recycling technologies and infrastructures differ among areas. Without summarizing it this way, the participants were pointing out that life cycle assessments differ by location and that options desirable in one area might be undesirable or unavailable in others. Furthermore, the participants also pointed out the geographical differences in customer values/views toward recycling and composting. In discussions about areas of the country where the participants perceived the populations do not value recycling, the participants banded together in common goal of influencing and changing these views. Therefore, throughout the conversation, the participants sometimes were opposing each other on the specifics values among end-of-life options and at other times there were banded together against those they perceived not to value recycling. That is, they were very likely iterating between advocacy and empathetic listening conversational phases, though these designations are not clearly delineated (Senge, Smith, et al. 2008).

In discussing the need for standardization, many participants were asking for clarification about the Cup Project itself. Some in the room favored composting and others preferred recycling; there were calls for definitions of each of these terms to

ensure common understanding. The standardization discussion also addressed the tension between accommodating local differences and the need for scale/volume in an all-encompassing system. The standardization discussion included the role of the government and the difference between planners/designers of the system and the regulators who influence the system in addition to discussion of the standardization of the technical characteristics of the material itself.

The "next steps" discussion also bled into suggestions for Cup Summit 2. Perhaps because of their engendered belief that recycling used hot beverage cups might be possible if "we... give this stuff a name," the suggestions for Cup Summit 2 were all action-oriented and desirous of progress.

Post-Workshop, Pre-Cup Summit 2 Interviews

As mentioned above, the post-interviews served to determine the current thinking of the workshop participants about the hot beverage cup recycling system, and to elicit reflections on the workshop and suggestions and desires for Cup Summit 2. The key points the stakeholder groups expressed in their interviews, in close to their own words, are as follows:

Government

- Progress has been made since workshop
- SBUX proactively looking at the recycling infrastructure and trying to create recycling system for themselves and roll it out to others; not just focusing on the marketing of the cup
- Missing opportunity to put cup in context of greater global warming. Would have liked to have seen SBUX tie the cup to global warming. Packaging a big component of global impact: mining for materials, energy to create products from materials. Embodied energy in cup outweighs transporting it for carbon footprints
    - Would like to see climate/global impact discussed in Cup Summit 2
- Not an end of life issue - it is bigger than that and includes design
- No other structure for these conversations - more dialogue occurs in venues like this.
- Communicating risk benefit equation is burden - don't know what the risks and benefits are - dialogue like occurring in venues like the workshop help.
- Could do cups-only collection using SBUX clout - problem is getting arms around what to do in store procedurally (e.g. contamination)
    - Sign with picture of dumping out liquids; receptacle that nests cups upside down; e.g. bottle bins that are shaped like bottles
    - Will have to make receptacles stand out and not blend in with the decor as they do now
    - Should be same spot in every store
    - Convenient as putting everything in the hole in the counter now
- WM in March agreed to accept plastic lids from SBUX in Seattle - will accept them from other retailers eventually too.
- 2 audiences: public and corporations

- SBUX should tie their recycling to energy production: e.g. recycling 1 case of cups saves x trees
- Behavior change - must give them a reason to change their behavior; help customers understand the embedded energy in the cup (the value of what they are throwing away)

- Definition of recycling is very important; waste-to-energy is not recycling because there are other higher uses before burning

Suppliers

- No response to request for post interviews with suppliers

Retailers

- Recycling challenges – need to spend lots of time on signage on cans
  - Unless they were savvy recyclers, most people did not know what to do with the stuff they wanted to get rid of
  - People are teachable but right now do not know what to do at a receptacle
- This is a process
  - Seattle exports process in addition to coffee
  - People buy into process if they are involved, regardless of whether they get what they want or not
- Needs to be bigger than SBUX - shouldn't be competitive, but it is now
- Recyclable is a legal term; need another use for material for it to be really recycled
- SBUX contributed to culture of take-away beverages
  - Working toward solution with everyone
- NYC pilot with Old Corrugated Cardboard
  - 50:50 poly-coated cups and OCC and slowed down process and lowered yields. Fibers stuck to the plastic. 50:50 is not realistic mix, but extreme testing
- Compost - better solution
- Reusables - customer behavior change required for this, but a better solution
  - Get trendier folks to set style of recycling
- Ethical sourcing - FDA contacted SBUX to help write the regulation because SBUX was already working on ethical sourcing
  - Purpose of convening is to involve municipalities.
- Ensure drilling into the technical details of this system and moving from theoretical systems thinking - have already identified lots of info - so ready to engage with it
- Grade is most important to recyclers and the suppliers
  - The grade will drive pieces we don't even think of now
- Paper and plastic are very separate - have ignored the plastic
  - Want to create single material bales so cups will get picked out of residential stream (where 80% go)
  - If convince it can go into mixed paper or mixed plastic, that opens the door for residential
  - Breaking out paper and plastic for Summit 2

- Confusion about role of summit
- Sensing lots of blame throughout the system; lack of awareness of own responsibility
- Pilots: get it working in cities that are ready for it and then use that as prototype
- Customer education
    - Videos, know-how for depositing materials in bins

Haulers

- Haulers have little control; MRFs determine what they will take and city regulates what it wants picked up
    - One Seattle hauler company picks up plastic coffee cup lids to pick up same from residential and commercial
    - Collect less valuable materials to further goal of prevalent recycling
    - Have to take the less valuable materials to get the more valuable ones.
- Goal is to have everyone pick up the same things to reduce confusion and increase chance recycling will happen
    - Who takes what is a differentiator among haulers for customers
- Goal is reduction not recycling: SBUX should encourage reusable cups to avoid having to produce the cup in the first place
- One Seattle hauling company doesn't have either a MRF or landfill
    - Have to pay MRFs and landfills tipping fee
    - Get paid by weight; loads are weighed and payment to Hauler is on by an equation of average % material type per pound * price of material.
    - For the city contracts for residential; paid by the number of lifts or sometimes by number of customers
- Still see situation as massive issue to encourage recycling of cups when 80% leave stores
    - Loss of control once cups leave stores - education only option here
    - Cup is printed with info regarding sustainability but no instructions
    - Let customers feel pride in the change they are contributing to
- Public education – a national hauling company does constant customer education
    - Websites, annual brochures mailed to residences & businesses, cart educational decals
    - Say it well, say it often
- Report to each city their diversion rate (tonnage of waste stream not going to landfill); with Bellevue 28% in 2004 and 39% in 2009
    - Allied does a contest for commercial customers to improve diversion rate: prizes: plaque at city council, free month of garbage service
- The more recycling, the more money allied makes
- Virgin material versus recycled; the more recycled, the less virgin
- North West well suited to recycling b/c have access to trucks, rail and ships
- Capture and use as much out of the material as possible; don't landfill so quickly
- Capture the off-gas from the landfill and use to power electricity
- Think about it all the way around the loop, check every angle to see how we can capture every little piece.

Recyclers

- Starbucks' Shareholders did not approved proposition (11% vote)

- Intriguing that there is heightened media interest in SBUX goals
- Seattle ordinance to recycle / compost single-use food containers by July2010
    - This is 2nd phase; first was to ban Styrofoam
    - Amity's company is playing an educational role, to help businesses become compliant
- Tension between performance and recyclability/compostability
- Struggle on what is recyclable/compostable where

- Coalition Resource Recovery meting in NYC in Marc 2010
- Challenges
    - Classifying what is the fiber source
        - Classifying may pigeon hole its distribution
    - Robust research on food contamination
    - Need to have a system to pick up the cups
- Credibility is important; don't want someone getting sick b/c of contamination or off-gassing from the recycled cup stock
- Separate cups out?
    - If do, then need demand for it in order for MRFs to separate it out
    - If don't, it might shut down mill operations (if in OCC stream)
- A recycling company to run swing trial (mill that takes both virgin and recycled material)
- NYC test (with a different recycling company) was on a mill that runs 100% recycled; most mills are swing mills
    - No one is building new plants
    - If new ones are built, they will likely be recycled
    - In 2008 mills were: 71% swing; 15% recycled 14% virgin (which means 5% or less recycled content)
    - Over capacity as an industry
- Pre-consumer paper cups (e.g. scrap from manufacturing process) have higher value than post consumer cups (b/c of the food contamination)
    - Out-dated inventory could be source

Customer Behavior and Disposal-Receptacle Observation

During the hour I observed people interacting with the MIT Stata Center cafeteria disposal receptacles, six people interacted with the receptacles in seven separate interactions collectively depositing nine items into the three bins.

The MIT Stata Center was bustling with breakfast patrons. The smell of coffee and the sounds of chattering people and the moving of chairs, coupled with the rapid and efficient movement of people set a busy and purposeful air.

In none of their collective seven interactions with the bins did any of the six people pause to read the signs on the receptacles. Perhaps they were familiar with the procedures; this might be especially true of the employee. The compost bin was the most used of the three bins. Of the four times it was used, it was used correctly 3

times, where "correctness " is matching of items placed into the bin with items depicted on the signage on the bin. Each bin was used incorrectly one time. In the seven times people approached the disposal bins, they collectively deposited 9 items. A third were deposited correctly, a third incorrectly and a third with unknown correctness. Note that I did not count items that individuals interacted with near the bins but that they did not throw into the bins; e.g. "male patron 1" used the bins as a counter to unwrap his breakfast sandwich. I did not count this as a bin interaction.

The details of the observation are as follows:

8:20am

A cafeteria worker approached the bins and threw something in compost. Next, she blew her nose on a napkin while still standing in front of compost, then, she threw the napkin in the compost. She did not look at the bins to read the labels, but walked purposefully over to the compost bin.

8:35am

One man [male patron 1] brought his breakfast over to the disposal area. He set his hot beverage cup and his wrapped sandwich on it. Then, he unwrapped his sandwich and picked off some cheese. The wooden containers were an excellent height for him - he didn't have to bend over or reach too high. Then, he threw a piece of cheese from his bagel sandwich into the single-stream recycling. He did not look at the bins to read the labels.

8:51am
A man [male patron 2] set his breakfast down on a table, got a napkin, wiped his hands and then threw the napkin in the compost before returning to his seat. He did not look at the 3 bins to read the labels.

8:57am
A man [male patron 3] walked in from outside and threw a very small something that I couldn't see in the "trash only" bin. He did not look at the 3 bins to read the labels.

9:02am

A woman [female patron 1] put a white paper straw wrapper in the "trash only." She did not look at the 3 bins to read the labels.

9:14am
A man [male patron 4] with a wheeled briefcase handle in his right hand and holding a cell phone up to his left ear with his left hand walked over to the trash only, threw something in and walked away. He did not look at the 3 bins to read the

labels.

9:20am
The man from 8:51 [male patron 2] walked over to the compost bin and threw in his breakfast wrapper (paper from his sandwich) and his plastic bottle from his chocolate milk.

Cup Summit 2

The in-depth analysis of the Cup Summit 2 will be described in the continuation study. Notably, at Cup Summit 2, the plastic cup was a parallel subject to the poly-coated paper hot beverage cup. The initial results are that by the end of the second day, the working groups had defined nine pilot tests. Two of the pilots have planned next steps within the week. The participants identified overlap among the pilots, including what resources they would need from each other and help they could provide to each other. The pilots identified included:

- "Sparking the Cup Revolution": A Zero-Waste Zone in Boston's Faneuil Hall Area
- A Pilot in Chicago to test Paper and Plastic Cup
- A Bale Sort Pilot to identify what is in plastic bales
- Receptacle Design and Product Redesign Pilot
- Customer Outreach Creative Strategy
    - To create a clearinghouse for recycling ideas and information
    - A viral video on recycling steps
- Mill Tests for Paper Cups
- A Pilot on Lids and Straws Materials
- Study of Supply and Demand of Recycled Materials
- Reuse Revolution: Earth Army: social change to reusable products

Figure 26 shows the placement of the pilots on the working-materials flow diagram. The identified pilots noticeably congregate in the "separated cups" and "cups in use" parts of the material flow. Furthermore there are no pilots identified upstream of the materials being in cup form (the paper cups and plastic cups on the diagram). Future assessments will have to confirm, but the distribution of these initial pilots might indicate areas for concentrating future pilots.

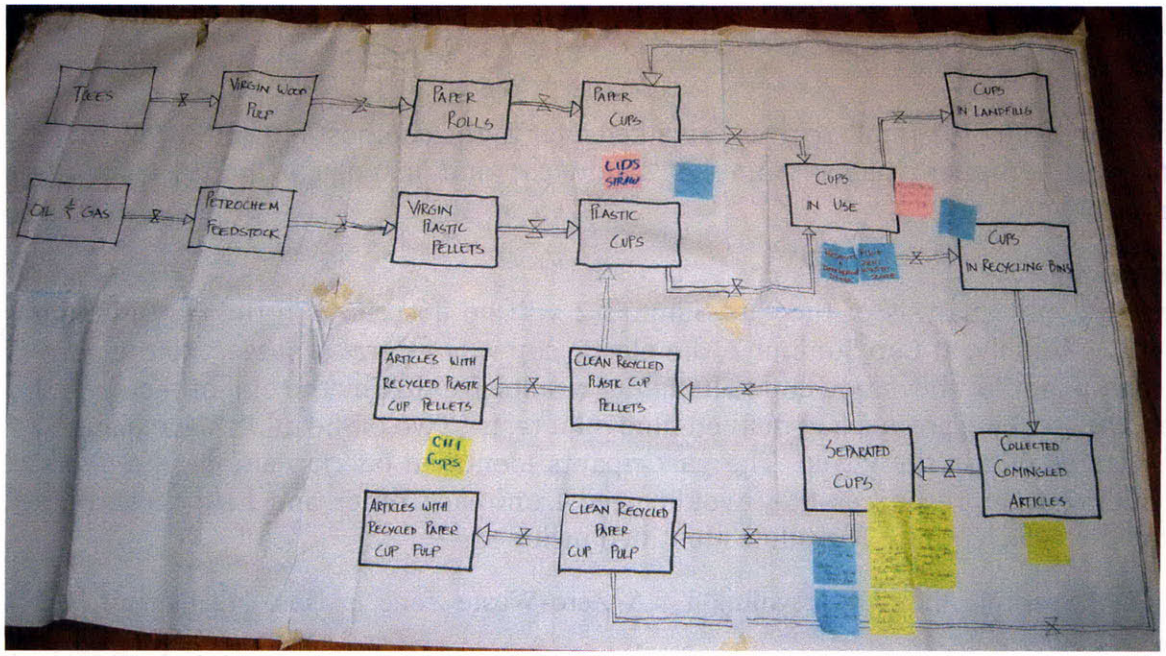


Figure 26 Material Flow Diagram with Pilots Displayed

Figure 27 and Figure 28 show examples of the work the participants did on the initiatives in their small groups.

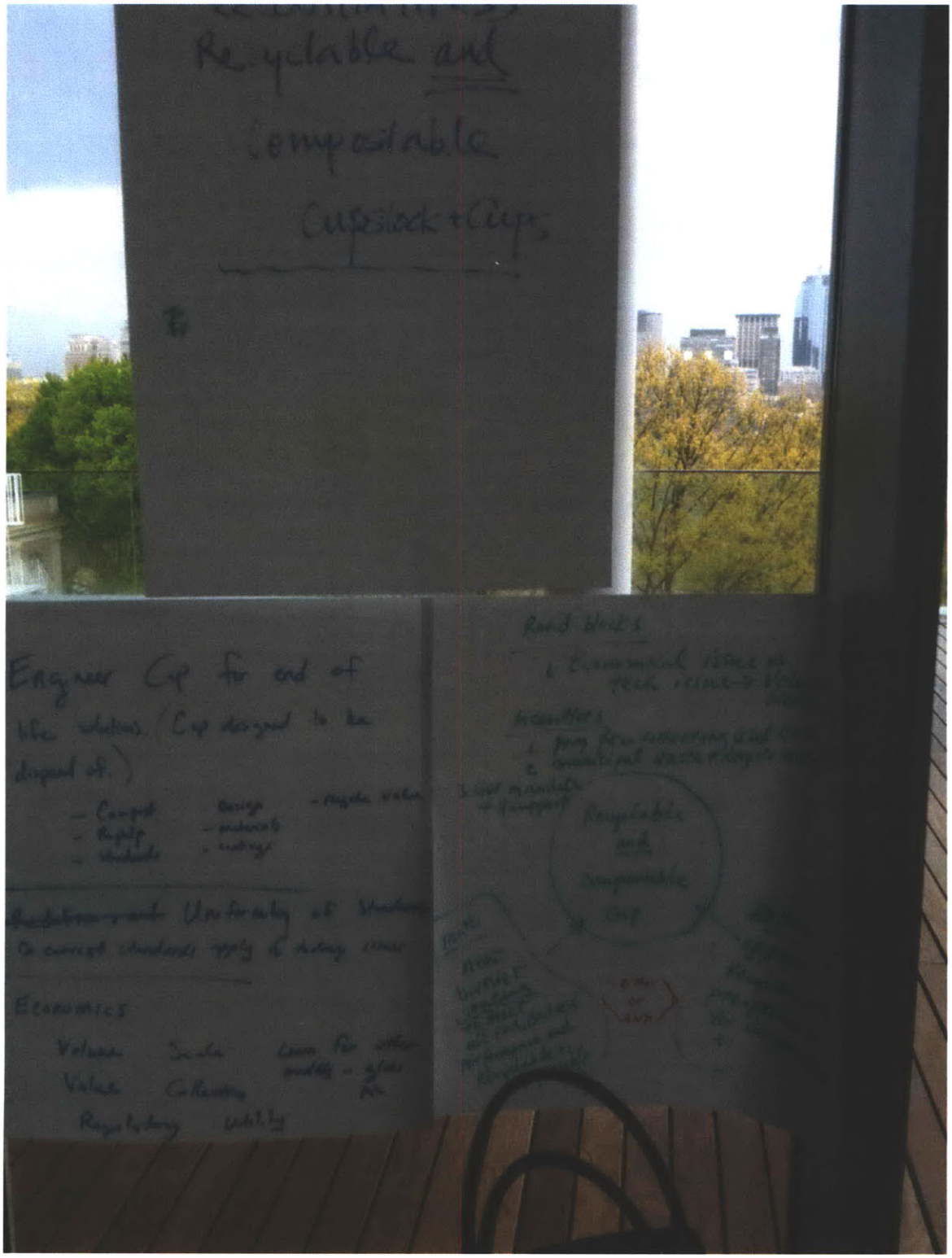


Figure 27 "Recyclable and Compostable (Paper) Cupstock and Cup" small group work during Cup Summit 2

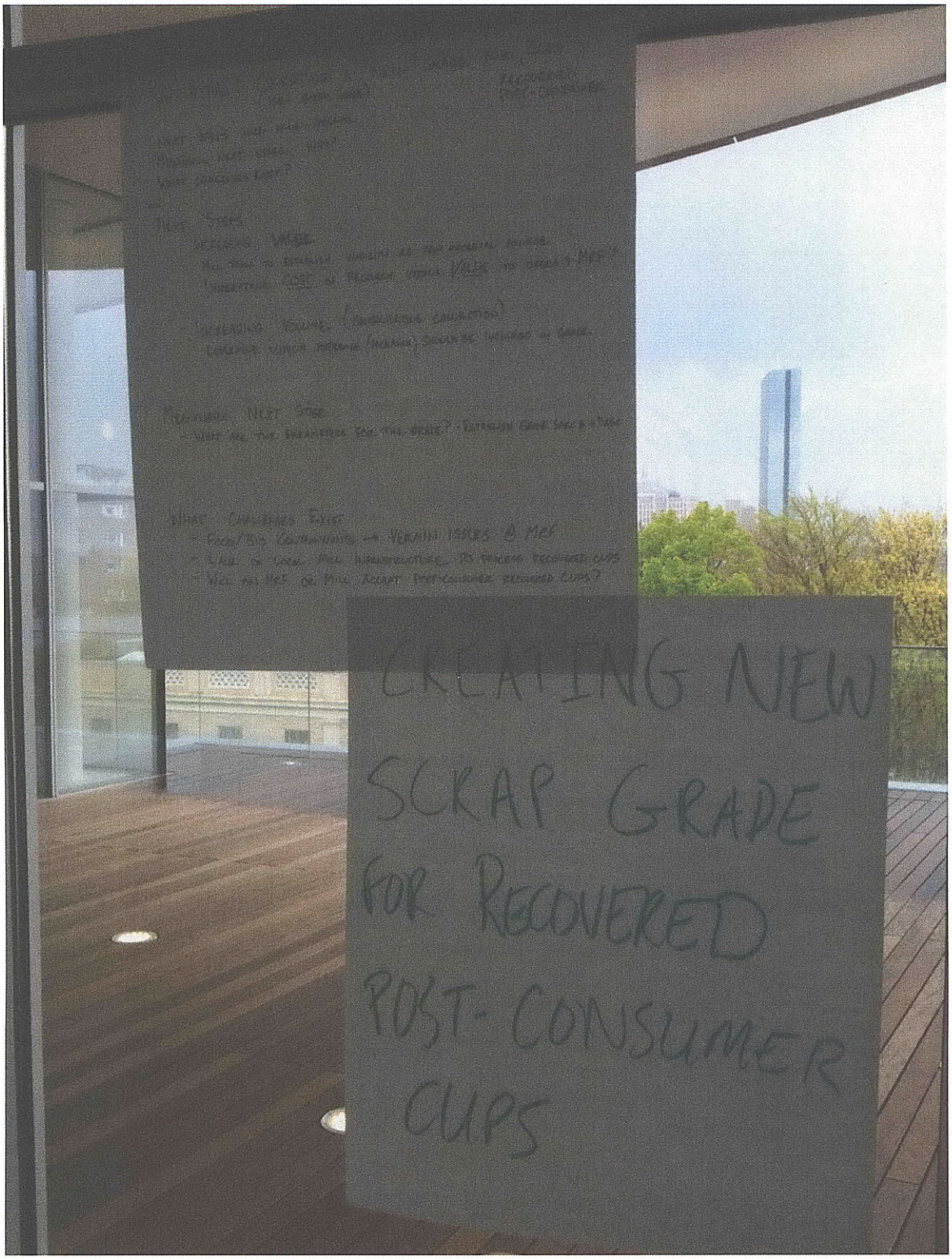


Figure 28 "Creating New Scrap Grade for Recovered Post-Consumer (Paper) Cups" small group work during Cup Summit 2

Another key outcome was that Dr. Senge led the participants to outline their collective vision for where they want to be in a year:

- Reflective consumer
  - Customers to pause when they are at a zero waste station (to deposit items correctly)
  - Customer behavior change
- Solid dialogue among all levels of government and industry
- 10x more recycled cups
- Better understanding of the technology from the mill test and bale sort to inform actions
- Consider broadest range of possibilities
- Robust market for this material
- Shifts to value chain from individual brand
- Food service packaging contributing zero to landfills
- Scale up the package trails to a larger audience

And, in answer to Dr. Senge's follow on question of what they need to track the accomplishment, they answered:

- Evidence partnerships
- Consumers and regulators taking part
- Servers engaged in the process

During the final discussion, participants discussed adding more stocks to the materials flow diagram: a composting stock and a stock for "other ecologically friendly materials" from which food service products can be made. Figure 29 shows these stocks included.

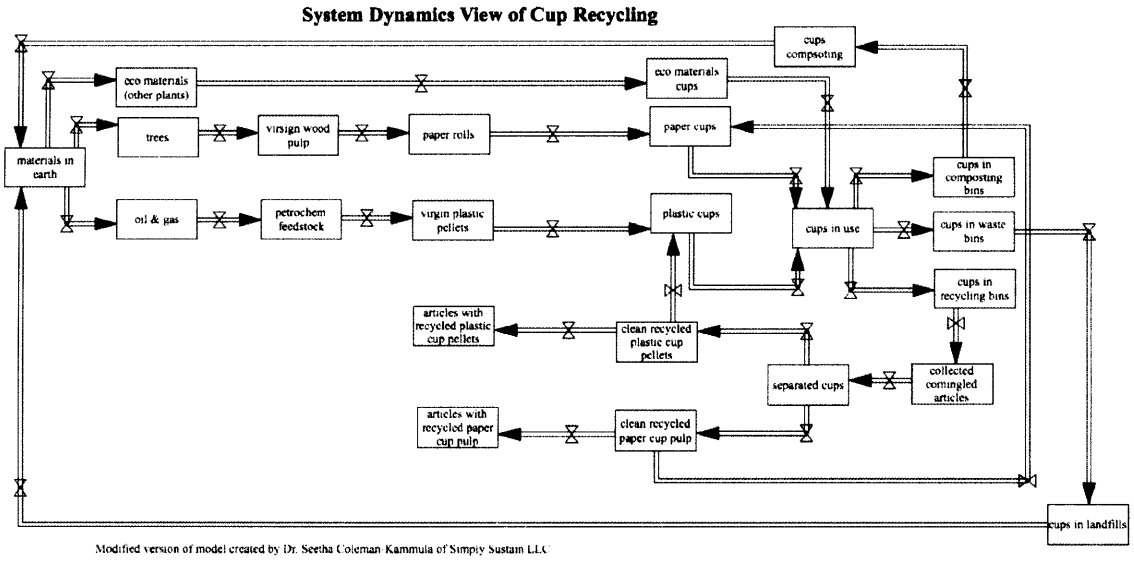


Figure 29 Materials Flow Diagram Updated as a Result of Cup Summit 2 Dialogue

Chapter 6: Discussion

The Challenges of Creating a System to Recycle Hot Beverage Cups

There are several challenges for creating a system to recycle hot beverage cups. Most importantly, the cups are paper with a poly coating. Having mixed materials complicates the recycling process, requiring a means to separate these materials. Another mixed materials concern arises from the typical use case. Many consumers use the hot beverage cup with a "sleeve" to protect their hands from the heat and a lid to prevent spilling. The sleeves are frequently made of old corrugated cardboard (OCC), itself a valuable recyclable material. The lids are typically made from a form of plastic, often polypropylene. Therefore, if a consumer tosses the hot beverage cup into a recycling receptacle without first removing the sleeve and/or lid, the cup-sleeve-lid combination has 4 materials coupled together. Requiring the consumer to remove the lid and sleeve adds two extra steps to the consumers' recycling behavior. Such source separation is necessary where technical means of separating at the recycling facility are not reliable or non-existent. Furthermore, unless the consumer dumps out the remains of his/her beverage and rinses the cup, food residue/residual can be significant. Because of bacterial and fungal growth, this food contamination is particularly troublesome for cups that travel or are stored between when consumers deposit them and when they enter into the pulping mil.

Starbucks and other retailers require certain technical standards be met in the cups they purchase, such as the cup holding hot coffee for a given period of time without loosing its integrity, etc. These robustness characteristics often create tension with the desire to have the cups breakdown easily for composting or recycling.

Even in locations with single stream recycling plants, the hot beverage cups pose a problem because the mixed materials (sleeve, lid, and cup) are tightly coupled, and must be separated through physical mechanisms for each cup going through. Therefore, not only must cups be identified within the stream of other mixed materials, but they also must have additional and specific processing for materials separation.

The local differences in recycling capabilities, prevalence, and markets pose additional challenges since each location is constrained by its existing situation, or must change to accommodate the larger system. Locations differ in many relevant respects, including but not limited to: municipal regulation of recycling, food businesses, and waste removal; existing and planned infrastructure such as recycling facilities, waste disposal facilities, waste collection arrangements (contracts); waste economics (differing markets for recyclable materials, different tipping fees at land fills, etc.); landlord-leasee contracts; consumer interests, behaviors, and attitudes towards recycling and end-of-life; and product availability from food container suppliers. Many of these differences, such as infrastructure and municipal contracts for waste removal require significant capital investment and scheduling lead-time to alter.

However, for global businesses like Starbucks and many companies within its value chain, a myriad of different (localized) approaches creates efficiency and other scale problems. Therefore, from a global business' perspective, achieving the goal of recycling hot beverage cups requires modularity in the form of local adaptability and global coordination. However, such globally (or regionally or nationally) coordinated approaches also impact the smaller business whose operations are confined to one location and whose budgets are smaller. For example, these smaller businesses likely use food container suppliers that are regional, national or global, meaning any price changes to the food container materials or products introduced to satisfy a global food retailer will impact these smaller players directly. However, full system economies of scale or markets are likely to drive these prices down over time.

An additional benefit of a global system is volume. To create a market for the material in used poly-coated cups, here called "old poly coated paper" or OPCP, there must be significant volume and standardization about the acceptable/usable quality characteristics of the material. A viable market for the OPCP material will increase the self-sustainability of the system to recycle old poly cups. Furthermore, a market for the OPCP material incentivizes change to capitalize on the profit from the new market.

In addition to the technical challenges described above, there are some organizational challenges. The system to recycle hot beverage cups requires coordination across organizational boundaries and throughout the value chain. Other retailers must add to Starbucks' 3% demand of the hot beverage food containers market to support the changes required of hot food container makers. Similarly, to have the volume they need of the OPCP material, other types of poly-coated paper must be combined with the used hot beverage cups. Additionally, especially at first, the changes required to enact this system may raise prices; whether customers are willing to assume at least some of this increase is difficult to determine. Because the customers of any given coffee shop, and a global coffee company like Starbucks in particular, are not a coherent group, determining their attitudes, preferences, and needs is as complex as their constituency.

Through the process of working on this system to recycle hot beverage cups, the representatives of the various constituencies are likely to form their own group "around the table" (Susskind 2010). This cohesion may make returning to their constituencies for buy in of the resulting system more difficult. For example, if the representative makes a concession to advance the system but the constituents view this concession as having given away an essential need, they are likely to reject the whole system as not meeting their needs.

In addition to the "at-the-table" group, a system to recycle hot beverage cups is likely to require or create integration throughout the value chain, especially at first. Such coupling of the organizations or parts of organizations involved with the hot beverage cup alters the business landscape and requires different approaches to competition and collaboration.

As briefly mentioned above, there is strong potential that a system to recycle hot beverage cups will require consumers to change their behavior around depositing items into disposal bins. Specifically, consumers may have to separate the lid, the sleeve and the cup and may have to empty and rinse the cup of residue. Keeping the required customer behavior change to a minimum will increase the likelihood of their adopting the new behavior and system. Furthermore, most of the cups leave stores as take-away beverage items. When consumers are finished with their beverages, they then deposit the used cup in whatever disposal system they are near: a receptacle on a city street, their workplace's receptacles, their home recycling or trash can, a trash can in their automobile, etc. That is, the customer takes the cup out of the retailers' area of control (store); creating zero waste end-of-life options for the cups requires collaborating with the systems into which the customers bring the cups.

Another substantial challenge is the differing opinions about end of life options. Some prefer composting to recycling whereas others see recycling as the better option for the hot cup. Starbucks is inclined toward the later hoping to maximize the use of the fibers while they are still strong enough, maximizing the use of the energy used to create the paper in the first place and to retain the carbon captured in the paper. They argue that the paper quality in paper food containers is the highest quality paper, higher than office paper, and has much good life left in it. Those who favor composting, such as the Clover Food Truck cite the difficulties the food contamination pose to recycling and argue that composting is a better option for food containers. Perhaps, a system that is globally unified and locally modular will contain options for individual localities and stores to make their own compost or recycle choice.

Plastic Beverage Cups and other Food Containers

The January Workshop focused solely on the paper hot beverage cup. However, Cup Summit 2 included the plastic cold beverage cup as a partner work thread. Including plastic brought in more complexities and technical differences, but also more opportunities for overlap. Although the paper and plastic food container industries are very separate, they intersect in retailers' stores, like Starbucks. And, paper and plastic cups remain on this joint path as they are dumped together into single stream recycling bins (or part if they are source separated into respective paper and plastic recycling bins). They then are baled with their like-materials and sold to users of reclaimed materials.

For both paper and plastic cups, inks, dyes and other marketing/branding markings impact the reclamation options. Furthermore, since many of the accoutrements of take-away eating, like straws, cup lids, and utensils are plastic, involving the plastics industry enrolls their expertise on the holistic view of the system.

By extending to other take-away food containers, the potential for volume and value in the recycled material increases, as does the number of involved stakeholders (both organizational and consumers) and the amount of resources available for the system change. Furthermore, by having food containers of all shapes be treated

similarly (as opposed to coffee cups being different from salad containers), customers need not differentiate their behavior by container shape, increasing the chances for customer behavior change.

Application of Stakeholder Engagement Technologies

The stratified nature of the stakeholders involved throughout this system-in-design, coupled with the geographical differences in infrastructure/circumstances suggest that this system is an ideal candidate for stakeholder engagement technologies.

No one stakeholder can enact the necessary changes alone. Although perhaps not in the short term, the stakeholders all stand to benefit from changing their collective system, if only to influence regulation to be both viable from a business perspective and protective of the environment, as BMW and other German automakers did with the Extended Producer Responsibility regulation in Europe (Laur n.d.).

This study has shown that after the workshop the participants had more awareness of others in the value chain, more discussion of specific pilots and the general need for pilots/prototypes, and more discussion of their own organization's leverage and responsibility within the system. These changes in thought patterns indicate a shift towards a more holistic view, a collaborative approach to creating a system to recycle take-away cups, and more involvement, if not commitment, in designing this system. Therefore, the January Workshop moved the current reality of cup recycling closer to the vision of all used cups going to zero-waste end-of-life options.

Limitations of this Inquiry

Limitations associated with mixed methods research and action-research were addressed above. Additionally, there are some limitations to this particular instantiation of action-reach. As mentioned, above, this study lacks sufficient numbers of workshop attendees who have pre-workshop and post-workshop interview data. Furthermore, some interviews were conducted in groups and because I did not record and then transcribe, it is not always clear who was speaking. Also, although most participants addressed customers' preferences, decisions, and behavior at some point, no randomly selected customers were involved in either the Workshop or the Cup Summit 2. Marketers, who have studied aggregate and categorical customer data, have represented this disparate stakeholder group. Though, as Susskind points out, "speaks in the style of" representation is valid (Susskind and Cruikshank 2006). Therefore, the customers' voice has been present in the marketing experts who have been representing them thus far.

Furthermore, I asked post-workshop interviewees directly about the Cup Summit 2 and the Workshop. Therefore, it is not clear how prevalent convening activities are in their thinking; most of the coded notes about convening are related directly to my interview prompts. Only a few mentioned other venues of convening around recycling single-use food containers. By leaving the rest of the interview open-ended, I got a better sense of what is on their minds.

As mentioned above, this study leaves for future work, the analysis of the Cup Summit 2 data. As such, this study serves as a prototype for that larger study, suggesting areas of improvement in the study design, such as increased interview data and including customers directly. Furthermore, because this inquiry starts after the first Cup Summit, it does not capture the full historical process of this cup initiative. That none of the non-Starbucks workshop participants had been involved in the first Cup Summit helps make the inquiry of pre- and post-workshop interview data more independent of the historical progression of the Cup Project.

Chapter 7: Future Research and Conclusion

Future research will investigate the role of signage and architecture of disposal receptacles, follow up with the participants of Cup Summit 2, follow the progress of the Initiative to Recycle Take-away Beverage Cups, and quantify the systems subsequent usage/success.

The limitations of Facilitated Systems Thinking include the effort and resources it requires of the convener to create an environment conducive to dialogue, a trusting space where stakeholders, including from competitive or combative organizations, can discuss their common interests, individual needs, and collectively overcome constraints. This includes enrolling expert (and ideally outside/neutral) facilitation. Furthermore, because so many individuals and organizations are involved, the specifics of the substantive results are not predictable, they are emergent. When a specific solution is required, Facilitated Systems Thinking is not an appropriate approach. Furthermore, Facilitated Systems Thinking assists groups in identifying the approaches they wish to try, the stakeholders must then implement these approaches. This requires agency, commitment, and resources from the stakeholders themselves. Reconvening over time is ideal to address concerns and challenges that have arisen, to reconfirm commitment, and to assess progress.

This thesis has shown that Facilitated Systems Thinking is beneficial to the design of complex, multi-stakeholder systems, especially when the stakeholders are designing the system themselves. By creating an environment where each stakeholder shares his/her interests and needs with the entire group, by involving the stakeholders directly in the creation of the system of which they will be a part, and by "going slow to go fast," (Susskind and Cruikshank 2006) and (Senge 1990) these social technologies augment system architecture, enhance the robustness and implementabilty (stability), minimization of negative unintended consequences (wisdom), fairness, and efficiency of the approach (Fisher and Ury 1991)(Susskind and Cruikshank 2006). As with Reg Neg and Extended Producer Responsibility auto regulation in Germany, by initiating change in their own system, the take-away food container industry positions itself for effective and lasting system change.

Furthermore as the comparison of pre-workshop and post-workshop interview data indicates, attendees increased their awareness of each other's situations, increased their awareness of their own responsibilities and leverage points, and increased their discussion of prototypes and pilot ideas. As such, these data indicate that the workshop intervention helped advance the system towards its vision of 100% reclamation of used cups. By convening the original Cup Summit stakeholders, the Workshop stakeholders and some new stakeholders, Cup Summit 2 stands to multiply the progress towards this vision. The pilots the participants identified, and especially the nearness of the timelines and the specificity of the commitments supports this assertion.

Facilitated Systems Thinking is an effective means of guiding participants to challenge their mental models and collectively make sense of the constraints and incentives that exist in the system. That is, it guides participants to collectively resolve their creative tension by bring reality closer to the vision of 100% reclamation of used cups (Senge, Smith, et al. 2008). It guides them in designing their own system.

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