INFORMATION ARCHITECTURES AND GOVERNANCE STRUCTURES TO SUPPORT SMART DISCLOSURE: A CONVENTION-BASED VIEW

Francois Duhamel, Universidad de las Americas Puebla, francois.duhamel@udlap.mx
Luis F. Luna-Reyes, Universidad de las Americas Puebla, luisf.luna@udlap.mx
Isis Gutierrez-Martinez, Universidad de las Americas Puebla, isis.gutierrez@udlap.mx
Sergio Picazo-Vela, Universidad de las Americas Puebla, sergiopicazo@yahoo.com.mx
Holly Jarman, University of Michigan, hjarman@umich.edu
David F. Andersen, University at Albany – SUNY, fadum@albany.edu
Jing Zhang, Clark University, JIZhang@clarku.edu
Deborah Lines Andersen, University at Albany – SUNY, dla@albany.edu
Djoko Sigit Sayogo, Center for Technology in Government, dsayogo@ctg.albany.edu

ABSTRACT

Consumers demand information about product sustainability, pushing for government actions and private regulations. Both approaches can benefit from applying information technologies, but sharing information may also prompt conflicts of interest among stakeholders. We propose using convention theory and case studies to analyze potential conflicts and possible ways to overcome them.

Keywords: Certification, coffee supply chain, Convention theory, controversies, NAFTA

INTRODUCTION

There is a long history of stakeholder actions to hold corporations accountable for their actions, especially those implying damages to the environment, workers or communities as a result of the production processes (Baue & Murninghan, 2011). During the last decades, this movement has intensified, pushing corporate organizations to be more accountable, transparent, and ethical (Baue & Murninghan, 2011; Doorey, 2011). One of the main reasons of the increased attention to organizational practices is the increased public interest in the environment and sustainability (Rahman & Post, 2012).

Two main forces have tried to respond to public interest on environmental and social sustainability. On the one side, there is a regulatory approach based on international trade agreements and sanctions. The North American Free Trade Agreement (NAFTA), for example, includes special agreements to take care about labor and environmental conditions in the trade region, creating two Commissions for Labor and Environmental Cooperation to follow up on these agreements (see http://www.naal.org/ and http://www.cec.org/). On the other hand, private sector regulations, in the form of certifications, also constitute an approach to respond to consumers’ information needs. In fact, there is a current proliferation of labels to certify compliance with the same number of environmental and social standards.

Much has been learned about making corporations and their supply chains more transparent, and the confrontational stakeholder tactics, used frequently until the 80’s, have evolved into partnerships and a collaborative approach where technology can play a key role (Baue &
Murninghan, 2011). One example of these renewed partnership approach is the US government initiative of “smart disclosure.” The initiative, a key component of the Open Government policy of President Obama, encourages the development of government regulations that promote collaboration in the “timely release of complex information and data in standardized, machine readable formats in ways that enable consumers to make informed decisions” (OMB 2011). Both partnerships and government approaches constitute examples on how the ideas of open government have added to the traditional focus on accountability with an additional focus on citizen empowerment, information sharing and innovation (Nath, 2011).

There are already some organizations such as GoodGuide (www.goodguide.com) or Barcoo (www.barcoo.com) providing consumer with information about the social and environmental impacts of the products they buy in the form of indexes. However, there is no agreement on what information should be made available and used to create these indexes, and there are many other issues associated with data availability, reliability, and validity, as well as transparency of the processes used to create the data (Rahman & Post, 2012).

Our current research goal is to contribute with a standard to share information across the supply chain. There are many standards already to accomplish this objective. However, we have not yet found a standard to share information related to processes to increase the trust in the data, such as certification, inspection or audits. This is not an easy task, given that we have found at least 435 eco-labels in 246 countries and 25 industry sectors (see http://www.ecolabelindex.com/ecolabels/). Moreover, the literature is still not very clear about how those different certification programs can be readily accepted by all type of participants in supply chains, or about the compatibility of emergent types of “certification”. Those issues are clearly important as they determine the success or failure of many certification programs, and may shape practical recommendations for the orientation of adequate public policies in sustainable consumption and smart disclosure. Main stakeholders in the supply chain should get involved in the development of this standard, agreeing on the types of data and the forms in which it can be shared. It is very likely that an event like this is susceptible of creating disagreement among different actors. In many senses, implementing such a standard requires a whole business architecture, involving governance as well as technical standards, that we have called I-Choose

Consequently, we address in this paper the following two research questions: what are the potential conflicts that can arise in the transmission of information necessary to sustain different certification programs in supply chains? What are the possible ways to overcome those conflicts? Given the complexity of the problem at hand, we have decided to focus only on one single product, which is not too complex, and traded under many of the current certifications, coffee. We plan to use convention theory as lenses to understand the potential emergence of conflicts and solutions. The research reported in this paper is very preliminary, and we only introduce relevant literature, a methodology to answer the questions, and some very preliminary observations with regard of some interviews that we have already done.
LITERATURE REVIEW

Conventions of product quality are supposed to enable actors to coordinate their behaviour (Eymard-Duvernay 1989). In this article, we show the different conventions between actors in different coffee supply chains, making different types of certification more or less compatible with such convention. Convention theory also allows to formulate conditions to overcome potential conflicts in the transmission of information, and refine policy recommendations. We propose an illustration of those concepts in the case of coffee originating from Mexico and sold in the Mexico, the United States and Canada.

Product Attributes

There is no such a thing as an “objective” definition of product quality expressed exclusively by differences in prices in the market. A product represents not only the outcome of a material production process but is at the centre of a market world of contractors, distributors, consumers, regulators, that develops over time in a path-dependent way, including taken-for-granted assumptions, practices, and conventions that maintain stable relations (Biggart & Beamish, 2003). Quality standards depend on the shared identification of common characteristics that can be grouped into three categories: Search attributes which can be verified at the time of the transaction, Experience attributes which can be assessed only after the transaction has taken place and Credence attributes that cannot be objectively verified and are based on trust (Nelson, 1970; Darby & Karni, 1973). Definitions of quality grading rest on shared conventions, as “shared templates for interpreting situations and planning courses of action in mutually comprehensive ways that involve social accountability” (Ponte & Gibbon, 2005). Assumptions and values involved in the development of these conventions can be conceptually classified in several “worlds.” Worlds mean how reality is grasped by different constituencies, and “specifies the format of what constitutes information” (Thevenot, 2007), including the communication of that information.

Conventions appear as “models of evaluation” of product quality where actors need to agree on the content of the definition of quality and the tools to manage quality whose legitimacy depends on shared values (Ponte & Gibbon, 2005). For example, the cognitive format of market coordination is the price information, which expresses worth and serves to justify actions in this world. Domestic worth qualification places value on experience and seniority and legitimacy of information is based mainly on trust. Industrial worth qualification values expertise as operational in the efficient execution of a task; legitimacy depends on a consensus of the accuracy of the technique employed. Civic worth qualification places social values on the top position. Legitimacy depends on the respect of law and social relevance (Ponte & Gibbon, 2005).

Controversies and Agreements

Situations of controversies between those different modes of coordination have been relatively less studied, at least in the Anglo-Saxon literature. Disagreements within the same world are generally not too difficult to solve as people within that order can use superior common values to arbitrate conflict that is already common to them.
Disagreements between worlds are trickier as the recourse to a superior common value will be
difficult; actors will probably disagree on the importance of basic values and series of references
to justify their actions according to different orders of legitimacy. The sense of what is just and
unjust will differ according to conflicting parties. For example, people in the domestic order tend
not to like the anonymity of the civic world, the corruption of market relations, and the
unnecessary formalism and standardization of the industrial world. The civic order tends not to
appreciate the personal relations of dependence of the domestic world, leading to alleged
particularism, paternalism and corruption. Civic order may consider market coordination with
suspicion for its individualism, its insistence on particular interests and selfishness. The civic
order sees the industrial world as dominated by unnecessary technocracy and bureaucracy. Market
order promotes the liberalization from the domestic world, to abolish personal links,
particularly, personal prejudices to access to a borderless, anonymous world. Market order does
not go well with the public space promoted actively by the civic order. People in the market
order prefer contracts and face to face relations rather than open justice in the public space.
Market order also criticizes the lack of flexibility of industrial order’s tools, methods and
structures. For the industrial world, the domestic world is judged as traditional and outdated. Its
particularism is judged inefficient, and little bosses relying on authoritarianism judged
incompetent. Administrative procedures are considered excessive, and social policies
unnecessarily expensive in the industrial world which also resent lavish consumption, high prices,
and the fluctuations in prices of the market order (Ponte & Gibbon, 2005).

Since those different orders are sometimes not directly compatible, actors must find ways to
solve tensions to carry on with courses of actions. What are the possible compromise? First,
worlds have been adopting norms of the others (Ponte & Gibbon, 2005) and experienced a
certain degree, albeit limited, of interpenetration. For example, industrial and market co-
ordination have worked together using industrial norms of productivity, economies of scale and
technical progress. Also, market coordination have adopted some domestic forms of coordination
when marketing branded products based on geographic indications. In market coordination,
people may work together with civic partners to accommodate products obeying a series of
minimal norms. The compromise between industry and market works well although the
compromise between market and civic or domestic is more difficult to achieve. Why? Features
of domestic and civic conventions tend to be absorbed into industrial conventions.

In summary, convention theory deals with observing different world visions of stakeholders
(consumers, distributors, roasters and producers in the case of coffee), and how they enter into
conflict or harmony to bring about a negotiated order of information transmission. The task of
the researcher is to “compare the plurality of legitimate orders of qualification and look at the
needed compromises between them”. The problem is to reach compromises between different
engagement forms and relevant information formats.

At the end of this literature review, we find that the role of certifiers is not addressed in the
existing literature at the exception of Muradian & Pelupessy (2005) examining different types of
voluntary certification schemes in coffee global value chains. However, as we mentioned in the
introduction to this paper, technology may play an important role in the transmission of
information in consumer product supply chain, and standards to communicate information about
certification and inspection processes plays a key role in consumer trust on this information.
Therefore, in order to address our two research questions, we need to enquire further about the role of certifiers in coffee supply chain and the conditions for efficient information transmission, especially in the context of emergent social media based information systems.

**The Role of Certifiers**

The role of certifiers has not yet been thoroughly analyzed under the convention lens. Generally speaking, the process of certification and codification itself facilitates the emergence of industrial-market conventions. However, certifiers and auditors play a key role in negotiating the demands of buyers in relation to the possibility of standardization on the production side. They can also contribute to translate the demands of marketers of ‘ethical’ products and civil society groups, to make ‘civic’ content embedded in standards, certifications and codes of conduct.

Following Ponte & Gibbon (2005), the analysis in terms of convention theory needs to be complemented by an analysis in terms of value chain governance in order to specify the patterns of information transmission in coffee value chains.

To differentiate value chain governance patterns, Gereffi et al. (2005) proposes to examine variables such as the complexity of the information and knowledge required to sustain a particular transaction; the ability to codify and transmit efficiently this information between the parties and the capabilities of the supply base in relation to the requirements of the transaction, leading to the distinction of buyer driven and supplier driven supply chains with some variations (Gereffi et al., 2005). Other questions can be used to differentiate chains, such as: are social ties between participants close or not? Are transactions frequent or not? Is the information to be exchanged complex or not, easy or not to codify? Are capabilities of actors adequate or not? Does information exchange entail high costs or not? Is it difficult to switch partners? Is there a high degree of dependence over the upstream or downstream partners in the supply chain?

Each value chain configuration exhibits a lead organization which is in position to determine who does what along the chain, at what price, using which standards, under which specifications (Ponte & Gibbon, 2005). We may find different types of information exchange patterns in supply chains according to the lead organization that dominates it.

We may distinguish from the literature, several types of supply chains with illustrations taken from Mexico coffee producers and sellers (Gereffi et al., 2005):

1. Market type: such chains can be further divided into buyer driven supply chains led by large industrial companies or mass retailers such as Nestle or Wal-Mart, where lead companies can easily switch suppliers, and on-premise smaller distributors not exerting a strong market power. They tend to belong to the market and the industrial world.
2. Modular and Relational Value Chains: these chains constitute industrial networks in which suppliers produce according to specific requirements from the client, however with complete autonomy in terms of resources and methods. There are several such networks in the specialty coffee, in which suppliers prepare specific mixes of coffee for different retailers. Two Mexican retailers in our current experience are Azucar Morena and Capeltic.
3. Specialty coffee for specialized retail or on-premise distribution, where leading firms are marketers of specialty coffee (roasters/retailers) such as Italian Coffee Company, Starbucks, and Punta del Cielo, which are not attached to specific suppliers on a permanent basis. They tend to belong to the civic world.

4. Captive or vertically integrated supply chains: short supply chains characterized by face-to-face producer-to-consumer networks. Leading firms are producer groups working together with dedicated distribution networks, working on an exclusivity basis, such as Café Colibrí (other examples). Goods remain personalized and localized: the information format remains fragmentary and specific to a customized thing and do not identify standard objects in their entirety; Information here hardly lends itself to extended communication, even through discursive language. (Thevenot, 2007). They tend to belong to the domestic world.

Such organizations can use a variety of possible certification types (Luna-Reyes et al., 2012):

1. Voluntary Certification Organizations., such as organic food certification regimes and various fair trade, relying on standards established by NGOs such as the Fairtrade Labeling Organization (FLO).
2. Government Sanctioned Certification Regimes. These certification regimes rely on national norms, laws and regulations, usually implemented through independent certification organizations accredited by government and international standards. The United States Department of Agriculture (USDA) and the Conseil des appellations réservées et des termes valorisants (CART-V) in Quebec are examples.
3. Proprietary Supply Chain Driven Systems. One example in this category is Wal-Mart’s program to develop a “Sustainability Index” or Nestle’s 4C.
4. Informal systems based on trust without a lot of substantial proof or actual documentation, digitalized or not.

Understanding different certification regimes and the ways in which they interact with the governing structure of different supply chains is key to answer our research questions. In this way, we are starting a series of interviews with participants in the coffee supply chain as we describe in the following section.

**METHODS**

In order to answer our current research questions, we have decided to follow a multiple case study approach (Yin, 1990). In this approach, several cases are analyzed separately to finally compare and contrast similarities and differences among them. We have selected as a case a particular coffee supply chain, and we plan to interview about 8 to 10 stakeholders in each of these supply chains. The selection of the cases is oriented to capture different supply chain governance forms, and under different certification regimes.

The cases selected so far include Punta del Cielo Coffee, a specialty store similar to Starbucks, which sells high quality coffee. Similarly to Starbucks, the organization supports coffee communities to improve their standard of living. We believe that Punta del Cielo supply chain is organized as a mix of a market and a captive supply chain, that is to say, they may have some
providers that work only for them, and it is also likely that they are continuously looking for new providers in the market. A second case involves Café Colibrí. Café Colibrí is a franchise managed by a coffee producers’ cooperative. Cooperative members produce, roast and in some cases manage the retail coffee shops where their coffee is brewed and sold. Café Colibrí, in this sense, resembles a hierarchical, vertically integrated supply chain. A third case will develop around a market type supply chain and Nestle 4C program. We are looking to get interviews with Nestle representatives, as well as with intermediaries and producers in the Mexican States of Chiapas and Veracruz. Finally, a fourth case involves a network of organizations that sell specialty coffee tailor mixed for each retail shop. We are planning to interview the managers of two of these retail shops in the City of Puebla, Mexico, and track from them the roaster and some producers. We are planning to use some additional interviews that we have already done, involving members of a fifth case, a network of organizations promoting Fairtrade coffee in Mexico.

The interview protocol includes questions about information sharing, conventions on quality and characteristics of an information standard to share information across the supply chain.

**FINAL REMARKS**

In the new organization of certification, three worlds seem to be at play: Civic content is becoming more important in the negotiation of quality content (paying a fair price, helping small farmers’ organizations), and also a more direct and virtual contact between consumer and producer (invoking a domestic convention). At the same time, labeling and certification are organized in terms of an industrial convention, and relationships with some mainstream distributors who carry fair trade coffee are based on a market convention.

“Lead firms” in ‘buyer-driven’ chains define and manage ‘quality’, by shaping the rules and conditions of participation, and thus they tend to determine the functional division of labor and entry barriers along the chain, with the support of certification. Such leading firms diffuse dominant normative paradigms that provide legitimacy for the mechanisms used to exert ‘leadership’.” The actual forms of co-ordination between lead firms and first-tier suppliers (and their hands-on or -off character) vary depending on: (1) the mechanisms for transmitting knowledge and information about quality and (2) the values guiding lead firms. Their success depends on how well they transfer information to their suppliers, and to standardize, codify and obtain credible external certification.

Mostly, certification appears as a tool for lead organizations to shape information exchange patterns for the rest of supply chain partners. Place of information capture and transmission as well as the language used vary for each type. Agents in the corresponding supply chains will be more or less autonomous to define their own options.

The participants in the market type of supply chain do not necessarily choose vertical integration, in the face of the growing complexity of products and social demands. Instead of vertical integration, they tend to delegate control to third parties embedding complex information about quality in standards into labels, certification and codification procedures.
We hypothesize that lead firms will use buffer strategies to limit the influence of new social movements (organic, fair trade), comprising journalists, fashion trend setters, social leaders, associations of consumers, and university researchers, through the (modest) integration of the values of the public sphere into proprietary brands or processes (Ponte & Gibbon, 2005).

In specialty coffee markets, more information is provided in relation to coffee origin, environmental and other coffee impacts. Actors tend use narratives such as origin-based trust narratives. Those narratives tend to be increasingly replaced by certified quality systems (the coffee standards on intrinsic quality being developed by the Specialty Coffee Association of America, for example) that partially de-link quality from place. These narratives tend to be replicated in a standardized manner for mass consumption (Starbucks), thus recalling industrial quality conventions.

In coffee supply chains, we expect to see the interaction of mainly four (potentially conflicting) “worlds”: the civic world, the industrial world, the domestic world and the market world.

As quality becomes embedded in ‘technical’ instruments such as standards, and codes of conduct, there is less need for repeated interactions and the building of the ‘personalized’ relationships of domestic convention; in a sense, we can say that trust becomes institutionalized in the label or code of conduct in addition to the reference to a specific firm.

The I-Choose architecture carry values of transparency, favoring public goods, public services for the general public and consumers. I-Choose can be read as an attempt to make civic coordination enter into the industrial/market type of coordination. So what kind of conflicts we might expect?

In the Table 1, we list potential conflicts as well as sources of agreement to overcome those challenges. Our current research efforts will help us to better understand these potential conflicts.

**TABLE 1. I-CHOOSE POTENTIAL POINTS OF FRICTION**

<table>
<thead>
<tr>
<th>Source of conflict</th>
<th>With market world</th>
<th>With industrial world</th>
<th>With domestic world</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suspicion stemming from alleged manipulation of information asymmetries, due to protection of particular corporate interests</td>
<td>Dominated by technocracy and bureaucracy.</td>
<td>Personal relations and secrecy</td>
<td></td>
</tr>
<tr>
<td>Reintroducing personal relations in the market mechanism</td>
<td>Reintroducing social rights to favor productivity, against waste.</td>
<td>Agreement on personalized relations</td>
<td></td>
</tr>
<tr>
<td>Integration of technology</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

671935- 8 -
ACKNOWLEDGMENTS

This research is partially supported by the National Science Foundation under Grants No. 37656 and IIS-0540069, and the Consejo Nacional de Ciencia y Tecnología under Grants No. 84082, 133670 and 171118, and the Canadian and COMEXUS Fulbright Commissions. Any opinions expressed in this material are those of the authors and do not necessarily reflect the views of NSF or CONACYT.

REFERENCES


