ICT Pathways For Consumer-Producer Feedback Loops within the Fair Trade System

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I acknowledge the First Australians on whose traditional lands I live and study, and pay my respects to the elders of the Ngunnawal people past and present.
Abstract
This report presents a domain exploration of feedback loops from consumers to producers in fair trade handicraft supply chains, and role of information and communications technology (ICT) in facilitating these information flows. Research questions relating to motivations, expectations, and translations of feedback were examined using human computer interaction (HCI) concepts of ‘feedback loops’, ‘conceptual models’, ‘interfaces’, and ‘design thinking’.

This qualitative study draws on a grounded theory approach and ethnographic techniques to conduct semi-structured interviews with Australian fair trade consumers and importers about their role in feedback loops to fair trade producers in developing countries. Emerging themes from these discussions include the variances in conceptual models of feedback between consumers and importers, the necessity of intermediaries in producer feedback loops, and the role of information technology as a feedback driver.

This contextual understanding of fair trade feedback loops gives rise to a number of design implications for future ICT interventions in this area. These include an awareness of differing motivations for giving and receiving feedback, varying conceptual models about the functioning of feedback loops, the involvement of intermediaries such as importers in feedback loop operations, and social and technological barriers to feedback access. A consideration of these issues will assist with the identification of pathways for new ICT interventions that support effective feedback loops to fair trade producers in future.
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1. Introduction

A cocoa farmer from the Ivory Coast squats beside a rudimentary drying rack made from corrugated iron and wooden poles outside his mud hut, running his hands through a pile of raw cocoa beans that are drying in the sun. An interviewer asks him what will happen to the beans after he sells them to the broker. The farmer responds with “Frankly, I do not know what one makes from cocoa beans. I’m just trying to earn a living with growing cocoa”. The farmers in the cooperative have never heard of or tasted chocolate, a “luxury” item which is prohibitively expensive in the Ivory Coast. Moreover, the farmers only have fleeting impressions of the far away “whites” that produce and eat the finished product made from the beans they harvest (VPRO Metropole, 2014).

This study examines the role of information and communications technology (ICT) in facilitating fair trade handicraft supply chains feedback loops from Australian consumers and importers back to producers in developing countries.

Fair trade is “based on dialogue, transparency and respect” (FTAO, 2013), and participants in fair trade supply chains are required to adhere to fair trade principles including the payment of a fair price and community premium, non-use of child or bonded labour, and environmentally sustainable production practices (Trade Aid, n.d.). Information flows between consumers and producers are particularly important in the fair trade system for enabling “sustainable development for excluded and disadvantaged producers in developing countries by facilitating better trading conditions” (Randall, 2005:55). The informational aspect of fair trade is leveraged to re-establish “social relationships” between the producer and consumer of commodity items (Hudson and Hudson, 2003:413) in order to drive demand for ethical products. Product labeling, point-of-sale (POS) material, and online content about fair trade producers raises awareness of global trade inequalities, supporting transparent business practices and enabling consumers to make informed purchasing decisions by revealing the “social and environmental relations of production and exchange” (Hudson and Hudson, 2003:413). Fair trade also equips producers with an increased level of “market information” (Nicholls, 2002:7) in order to determine global trading opportunities, and target their production and sales activities to satisfy consumer demand in foreign import markets such as Australia.

However, while Fair Trade may be enhancing consumer awareness of producers and production conditions, less attention is granted to reverse feedback loops from the consumer to the producer. Present fair trade supply chain communications are instead “rooted in a politics of difference, unequal participation and one-way information flows” (Lyon, 2006:459) due to inadequate producer feedback loops. This study addresses calls for research that considers “how producers conceptualize
fair trade consumers and their mutual role in trade relationships” (ibid., emphasis added), with the Ivory Coast example (VRPO Metropole, 2014) providing evidence that fair trade producers may lack an understanding of the end product, consumers, and factors driving market demand. The benefits for producers in obtaining consumer experience information are evident from my own first-hand observations of a fair trade handicraft organisation in Nepal, where trialing a garment in the presence of producers provided them with valuable visual feedback about how the item would be worn by the buyer.

ICT therefore has the potential to play an important role in facilitating feedback loops from consumers to producers, thus supporting producer agency in supply chain activities. This study takes a human-centered design perspective to identifying ICT pathways for fair trade feedback loops by first establishing “a good understanding of the people and needs that the design is intended to meet” (Norman, 2002:9). Given a lack of prior research in this area, an exploration of the problem domain is necessary before new ICT interventions can be considered. This has been accomplished through a qualitative study which gathered interview data about fair trade information flows from Australian consumers and importers, and analysed it using human computer interaction (HCI) concepts such as ‘feedback loops’ ‘conceptual models’, ‘interfaces’ and ‘design thinking’. Emerging themes have been established from patterns in the data, enabling the identification of design implications for future ICT interventions.
1.1 Objective
This study aims to establish a better understanding of feedback loops from consumers to producers in fair trade handicraft supply chains, and the role of information and communications technology (ICT) in facilitating these information flows. This contextual domain knowledge could be used to inform future ICT interventions that enhance the operation of feedback loops to producers by providing them with a greater insight into the Australian consumer experience of their products.

The topic was explored through the following research questions:

Primary Research Question:
- How is information and communications technology currently used in fair trade supply chains to facilitate feedback loops? How might information and communications technology be applied in future to improve these information systems?

Secondary Research Questions:
- What types of feedback do consumers currently provide to producers, and what are their motivations for giving feedback?
- What consumer feedback would producers like to receive, and how would they use this feedback to influence supply chain operations?
- How is feedback modified, filtered and translated back through the supply chain to producers by intermediaries such as Australian importers?

1.2 Scope
This undergraduate research project was completed as a six-unit special topic course, comprising approximately 130 hours of work over a four-month period. It has been designed as a scoping study for a computer science honours project and not only provides preliminary responses to the research questions, but also tests the validity of the research questions themselves.

While understanding information flows to the consumer provides general context to the topic and interview responses, this project primarily focuses on feedback loops to the producer as illustrated by the following figure:
This study targets the experience of Australian consumers and importers as understudied participant groups, while seeking secondary data about the fair trade producers in South East Asia with whom they trade. I have also attempted to limit the scope to fair trade handicrafts since their production does not involve the same amount of secondary and tertiary processing steps required for commodities such as cocoa (Nestle, n.d.). This suggests that handicraft producers may be more directly engaged in creating the final product than commodity farmers, and thus might have a greater sense of how the product is used by the end consumer.

While the organisations involved in the study did not necessarily hold fair trade accreditation from authorities such as the World Fair Trade organisation, the participants recruited adhered to generally recognised fair trade principles through their business practices. An organisational ethos based around ethical consumerism was deemed sufficient for theses participants to be considered ‘fair trade organisations’ and the items they sell ‘fair trade products’ for the purpose of this project.

1.3 Contribution
The study will generate new avenues of inquiry for researchers in the fields of Human Computer Interaction For Development (HCI4D), information systems, and humanities by addressing gaps in the literature concerning feedback in fair trade systems, fair trade-related ICT initiatives, the
importer role in Fair Trade handicraft supply chains, and understandings of fair trade from an
Australian, non-commodity perspective.

Moreover, this project takes an interdisciplinary approach to exploring a human computer interaction
problem by drawing on a contextual body of knowledge from sociology and development studies,
and applying ethnographic techniques from anthropology to conduct a qualitative interview-based
study. The insights gained from this pilot study could be leveraged to develop new ICT initiatives
supporting information flows to producers, strengthening supply chain operations and improving
producer livelihoods as a result.

1.4 Overview of report
Section 2 provides background to the study, including a literature review organised around the topics
of producer information needs, fair trade information flows, and previous fair trade technology
projects. It also explains the HCI principles used as a conceptual framework to explore the problem
domain including ‘conceptual models’, ‘feedback loops’, ‘interfaces’, and ‘design thinking’.

Section 3 describes the study design by outlining the methodological approach, interview techniques,
ethical considerations, and strengths and limitations of this research model. Section 4 provides
analysis and discussion of the data based around the emerging themes of conceptual models of
feedback, intermediaries to information flows, technology as a driver of feedback, and design
implications for future ICT interventions.

Finally, Section 5 draws general conclusions about feedback loops in fair trade handicraft supply
chains, and evaluates the effectiveness of the study design as well as offering potential improvements
to this design for subsequent works.
2. Background

2.1 Search strategy
I developed the following initial search question using the model provided by the University of Leeds (UoL, 2015):

- Topic: supply chain feedback loops
- Aspect: fair trade supply chains – consumer to producer feedback
- Question: "In Fair trade supply chains, what consumer feedback does the producer receive and how?"

However, I found the results yielded from this search question were too narrow, and I widened the scope of the question to address more general information needs of workers in developing countries, particularly in manufacturing and agricultural areas. I accessed this material through online databases such as the ACM Digital Library, IEEE Xplore Digital Library, Google Scholar and ANU SuperSearch using various combinations of the following prefixes and search terms:

<table>
<thead>
<tr>
<th>Prefixes</th>
<th>Search Terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developing countries</td>
<td>Information needs</td>
</tr>
<tr>
<td>Producers</td>
<td>Market information</td>
</tr>
<tr>
<td>Fair Trade</td>
<td>Feedback</td>
</tr>
<tr>
<td>Fairtrade</td>
<td>Supply chains</td>
</tr>
<tr>
<td>Commodity</td>
<td>Supply chain communications</td>
</tr>
<tr>
<td>Handicraft</td>
<td>Supply chain feedback loops</td>
</tr>
<tr>
<td>Garment</td>
<td>Information flows</td>
</tr>
<tr>
<td></td>
<td>Consumer information</td>
</tr>
</tbody>
</table>

Figure 2: Search terms used for conducting the literature review

2.2 Literature review

2.2.1 Producer information needs
There is a notable body of literature in information sciences identifying the general information needs of citizens in developing countries, and outlining both the social and technological barriers to information access. Dutta provides a literature survey of studies relating to urban and rural indigenous populations in countries such as Malawi, Nigeria and India (Dutta, 2009), with a lack of basic literacy skills emerging as a common social barrier to accessing information needed for their “basic survival” (Dutta, 2009:48). For example, Momodu’s study suggests that 40% of the information needs of Nigerian Ekpoma people are related to agriculture in areas such as technical
farming, financial, and environmental information, however a lack of English language skills means that they are unable to benefit from available English-only information sources (Momodu, 2002:409). Additionally, a study of Nigerian fishermen shows that low literacy skills create a dependency on information that is “outdated, unreliable, and inaccurate through informal networks”, with negative implications for their productivity and livelihoods (Dutta, 2009:48).

Technological barriers to information access are also illustrated by agricultural case studies. For example, while there are currently web platforms and mobile applications available to provide Sri Lankan farmers with access to agricultural and market information (De Silva et al., 2012), these information sources are currently underutilized by the farming community due to a lack of digital literacy skills, scarce internet connectivity, and little knowledge of the services available (ibid.). Mubin et al. also describe the problems confronting Pakistani farmers in utilizing ICT to gain market information such as “issues of accessibility, lack of infrastructure, poor well being, illiteracy, [and] technology inhibitions” (Mubin et al., 2015:2). However, their study also identifies opportunities for future ICT projects given the widespread ownership of mobile phones, such as mobile applications to support informal information sharing between farming peers (Mubin et al., 2015). These studies suggest that future ICT projects in fair trade producer communities require an understanding of the types of information producers need, their current patterns of information technology use, and the social and technological barriers to information access in order for design projects to be effective.

2.2.2 Fair trade information flows
Producer to consumer information flows in fair trade systems have been studied extensively in fields such as sociology and marketing. Nicholls asserts that providing consumers with information about supply chain operations has cultivated more interest in distant supply chain links, which has created “a dramatic rise in demand for fair trade products and an increased product range to satisfy it” (Nicholls, 2002:9). This is achieved by “infusing products with information regarding the peoples, places, and cultures engaged in the production of particular commodities” (Raynolds, 2002:410). Producer information is conveyed in the form of text and images on product packaging describing producer stories, the presence of fair trade labeling on the item, and associated web and point-of-sale content provided by the retailer (Raynolds, 2002). Rendering visible these “hidden layers of information” (Lyon, 2006:457) about production conditions is a key element for enabling “consumer choice and participation within the alternative market” (Lyon, 2006:456), and the ability to provide feedback may allow consumers to establish the desired level of “connection and involvement” (Alexander and Nicholls, 2006:1237) with producers.
However, just as the informational aspect of fair trade seeks to forge consumer-producer relationships “in more equitable, more meaningful and more sustainable ways” (Raynolds, 2002:404), the propagation of “unreliable” information can also diminish consumer trust in the fair trade system (Hudson and Hudson, 2003). The “information asymmetry problem” of global supply chains means that consumers will inherently have less knowledge about the production conditions of a fair trade item than the producer (Hudson and Hudson, 2003:426), and the producer will presumably know less about how the product is used than the end consumer. An ethnographic study of Chilean wine producers illustrates that information quality can be affected by problems with information management at the producer end of the supply chain (Light, 2010). These issues include fragmented information systems at production sites, a reliance on manual data handling processes, informational politics along the supply chain, and a mismatch between the types of information producers are gathering and the types of information consumers actually want to know (Light, 2010:33).

Less attention has been granted in the literature to information flows in the reverse direction from consumers to producers, despite its importance for “developing producer trust in, and allegiance to, Fair Trade networks” (Renard in Raynolds, 2002:419). An ethnographic study of fair trade coffee producers in Guatemala revealed that the cooperative had “little knowledge of consumers” (Lyon, 2006:458) and felt “antagonistic” when comparing their own lives to those of “wealthy consumers in the North” (ibid). Other examples such as the Ivory Coast case study (VRPO Metropole, 2014) provide further evidence that producers often do not understand the “demands they must fulfill” from the consumer market (Renard, 1999:498). Further analysis of information flows to producers is therefore important for identifying information needs and deficits in the fair trade system, particularly since the informational aspect of fair trade can be more valuable to producers than its other “financial and commodity arrangements” (Raynolds, 2002).

An analysis of existing literature about fair trade information flows yields some important insights for this study. Since producer information is defined as a fair trade product characteristic, a lack of tangible feedback beyond transactional information may prevent producers from fostering this same sense of connection with consumers. ICT projects could deliver new informational artifacts to producers in the form of consumer stories, though this raises questions as to whether this information would re-enforce positions of consumer privilege over producers, rather than supplying useful information that would enable them to improve production activities. Issues of information integrity may also arise when conveying consumer feedback to producers, suggesting that an understanding of
relationships with intermediaries such as importers would be useful in determining how further ICT interventions could be successfully applied to supply chain communications. The identification of informational inequalities also provides further justification for research into feedback loops to producers.

2.2.3 Fair trade technology projects
There have been a small number of previous ICT projects relating to fair trade supply chains, however these still emphasize information flows from producer to consumer rather than the inverse. For example, the *Fair Tracing* project proposes the introduction of a coffee tracing system using RFID technology to provide the consumer with a more in-depth understanding of the producer and the value chain (Kundu and Chopra, 2009:219). The *I-Choose* project instead focuses on developing an “interoperable data architecture” to integrate information through sustainable food supply chains, while also identifying barriers to its introduction such as information manipulation by “powerful, but irresponsible, actors in the supply-chain” pursuing their own commercial interests (Sayogo et al., 2012:151). This highlights the importance of identifying consumer and importer motivations for providing and transmitting feedback to fair trade producers to better anticipate how these ICT interventions might be used (and abused) in practice.

Industry has also identified a need for ICT to better support fair trade producers, with the labeling organisation Fairtrade Australia and New Zealand (FANZ) investing in a two-year project enabling coffee farmers in Papua New Guinea to “better perform tasks such as price negotiation, logistics and planning, as well as identifying market opportunities and accessing information” (FANZ, 2014). An important insight gained from analyzing user requirements for the new system was the need to accommodate “verbal communication among farmers” (FANZ, 2014), emphasizing that feedback through personal information networks must be considered in the design of new systems. Moreover, FANZ asserts that new ICT systems must build upon the existing information technologies used by producers (ibid.), consistent with the human-centred design view that HCI projects should support existing “human needs, capabilities and behaviours” of users (Norman, 2002:8).

2.3 HCI Conceptual Frameworks
This study draws on a HCI conceptual framework for analyzing the problem domain of fair trade information flows.
2.3.1 Feedback loops

I use an information retrieval understanding of feedback as “a closed loop of causal influences” (Spink and Saracevic, 1998:251), where positive and negative feedback act as a “thermostat” for supply chain activities by driving changes to production practices which in turn affect the fair trade products offered to market. This study will examine the efficacy of closed feedback loops to producers, identify potential breaks in feedback loops, and analyse the impact of consumer feedback on handicraft production activities. From an interaction design perspective, feedback is defined as “communicating the results of an action” taken with an interactive user interface in an “immediate” and “informative” way (Norman, 2002:23). However this conceptualisation of feedback as instantaneous is not suited to the prolonged nature of information flows between actors at two extremes of fair trade supply chains.

2.3.2 Conceptual models

*Conceptual models* refer to “understandings of how things work” (Norman, 2002:26), in this case the understandings held by consumers and importers about the operation of feedback loops in fair trade supply chains, and their own role within these systems. Since people can draw upon “different mental models of the same item” (Norman, 2002), I expect to encounter an array of different conceptual models within and between the consumer and importer participant categories with complex interplays between them, rather than unified conceptual models of feedback. Conceptual models can be identified by considering the “metaphors or analogies” used by participants to describe feedback loops, the “functions performed” by these feedback systems, and the “importance categorisations” of tasks required for consumers to transmit feedback to producers (Webb, 2008).

2.3.3 Interfaces

In a HCI context, the word *interface* is typically associated with a *user interface*, defined as “that portion of an interactive computer system that communicates with a user” (Jacob, 2000). The notion of an interface as a touch point between two entities is captured in its broader definition as “a means or place of interaction between two systems” which many involve “interaction, liaison, dialogue” (OED, 2015). I consider the importer as the interface between producers and consumers by acting as a conduit for the flow of goods and information between them, and seek to gain a better understanding of the “data translations” (Light, 2010:34) that occur within these feedback loops due to the involvement of third party intermediaries.
2.3.4 Design thinking
Donald Norman asserts that “good designers never start by trying to solve the problem given to them: they start by trying to understand what the real issues are” (Norman, 2002:218). This study is thus situated at the first stage of a human-centred design process, with the objective of gaining a better understanding of how fair trade feedback loops currently operate to identify opportunities and challenges for future ICT interventions in this space.
3. Methodology

3.1 Characteristics of qualitative research
A qualitative study is suitable when “a problem or issue needs to be explored” (Creswell, 2013:47), emphasis in original. Since the objective of this study is to better understand feedback loops in fair trade supply chains, a qualitative research method is appropriate for exploring the problem domain. Qualitative research aims to “make sense of, or interpret, phenomena in terms of the meanings people bring to them” (Creswell, 2013:44), and this is reflected in the focus of the research questions which seek to understand conceptual models of feedback systems across different participant groups. I engaged with “multiple forms of data” (Creswell, 2013:45) including interviews and web content analysis to gain an in-depth perspective of how technology is currently used to facilitate feedback in practice.

A further characteristic of qualitative research is the “emergent design” of the research model, where “all phases of the process may change or shift after the researchers enter the field” (Creswell, 2013:47). This was particularly relevant for a scoping study given that my objective was to develop and evaluate a novel study design for researching fair trade supply chain information flows, and an emergent perspective afforded me the flexibility to modify the interview questions as data gathering progressed. An example where this was necessary was in the addition of two hypothetical situation questions to the consumer interview script following the pilot interview. These additional questions allowed me to elicit information about how a consumer would provide feedback even if they had not previously done so, which was necessary for ensuring that consumer interviews addressed the major topics articulated in the research questions.

3.2 Selection of qualitative approaches
The output of this study is consistent with a grounded theory approach, which involves “the development of a theory that might explain practice or provide a framework for further research” (Creswell, 2013:83). In this context, I have examined the ‘process’ of consumers and importers providing feedback to fair trade handicraft producers, and am providing ‘theories’ about conceptual models of feedback systems held by various supply chain participants, and pathways for further ICT applications to support these processes. I have used an “inductive approach” (Creswell, 2013) by formulating my theories based on themes emerging from the data analysis, rather than testing a predetermined hypothesis.

In addition to the grounded theory approach, I have also applied ethnographic techniques such as semi-structured interviewing in order to better understand the “shared and learned patterns of values,
behaviours, beliefs, and language” Harris in (Creswell, 2013:90) from which these conceptual models are constructed. HCI practitioners draw on ethnographic approaches to explore “the context in which users interact with technologies” (Rogers, 2004:98) by “exposing taken for granted working practices” (Rogers, 2004:118). I pursued this approach using semi-structured interviews by preparing high-level conversation topics that addressed the research questions, but enabled participants to “express themselves in their own terms” (Bernard, 2006:211) through open-ended questions and spontaneous lines of sub-questioning based on their responses. Focussing my data collection around specific research questions allowed me to gather useful insights without the need for ethnographic fieldwork to be undertaken over extensive time periods (Randall et al., 2007).

3.3 Nature of the research
I first conducted a web content analysis of Australian fair trade importer websites and social media pages to gain an initial understanding of ICT-enabled mechanisms for gathering consumer feedback. This informed the development of my interview questions, particularly the aspects concerning social media use for sharing consumer experiences of fair trade products, and provided secondary data for comparison with the interview responses. Insights gained from the web content analysis are described in Section 4.2.

I also carried out semi-structured interviews with fair trade consumers and importers to compare and contrast perspectives of feedback from two different links in the supply chain, and determine how feedback is modified and translated between consumers and producers. Interviews were conducted face-to-face in Canberra coffee shops or by telephone, and my supervisor was present for some sessions. A small number of interviews were recorded contingent on consent from participants, low ambient noise levels, and the availability of a voice recorder. Interviews were conducted over a four-week period, taking approximately 30 minutes with consumers and 60 minutes with importers.

The sequence of research activities was as follows:
1. Potential participants were identified by the researchers based on suitability for the study
2. Participants were issued with a formal invitation to participate via email, which included the information sheet and written consent form
3. Participants and researchers arranged a mutually agreeable time and place for the interview
4. Participants returned the written consent in hard copy or by email prior to the commencement of the interview.
5. The interview was conducted and recorded in written form (and audio form where permitted)
6. Participants were thanked for their time and debriefed

3.4 Participant groups
A small, non-random sample of participants was recruited from the following two groups:

Group 1: **Australian-based fair trade consumers.** These participants were selected on the basis of having previously purchased fair trade products, in particular handicraft items. They were identified through my personal networks given my previous experience as a fair trade advocate, though they had not necessarily purchased items from the specific importers involved in the study.

Group 2: **Australian-based fair trade handicraft importer organisations.** These participants were identified on the basis of being Australian-based fair trade importer organisations with a website and social media presence. I particularly targeted importers who actively use ICT to gather and disseminate consumer feedback.

Human ethics approval was granted to interview up to ten consumers, however I felt that the first five interviews covered the core topics of the study in adequate depth. Three importer organisations were interviewed, and I also gained ethics approval to interview up to three producer organisations but was unable to secure these participants within the limited timeframe of this study.

3.5 Interview questions
The interviews were guided by interview scripts specific to each participant category, which are included in Appendix 7.6.

For **consumer** interviews, initial questions about why the participant buys fair trade products were designed to put them at ease, and prime them for more complex questions about their consumption behaviours. The structure of the interview involved an examination of producer-to-consumer information flows, before turning to participants’ conceptualizations of fair trade information loops and experiences of giving feedback. Some participants had never provided feedback about a fair trade product, so two hypothetical questions were included to elicit data about their potential actions in positive and negative feedback situations. Indicative interview questions included in the ethics application are as follows:
• Why is fair trade important to you? What types of fair trade products do you purchase and why?
• What do you know about the producers who make the Fair Trade products you purchase, and how do you find out this information?
• Do you ever provide feedback about your experience with a Fair Trade product and the organisation you purchased it from? When do you/would you provide feedback and who do you/would you give this to?
• Do you think that your feedback is passed on to the producer? What do you think they do with this information?

Importers were also asked preliminary questions about their involvement with fair trade to determine how they perceive their role in fair trade systems. Subsequent interview questions addressed information pathways through supply chains, communication activities with producers, methods of gathering and transmitting consumer feedback, and the role of technology in supporting feedback mechanisms. Indicative interview questions included in the ethics application are as follows:

• What was your organisation’s motivation for becoming involved in the fair trade system and the producer groups you currently work with?
• What are the links in your supply chain from producer to consumer, and what is the role of each organisation involved?
• How do you communicate with your producer partners?
• What type of feedback do you give producers about their products and operations? How do you gather and share information about the consumer experience with producers?
• What do you perceive to be the benefits of this feedback for the producers? What effect does this information have on production activities going forward?
• Do you believe that there are any barriers to gathering feedback from consumers and communicating it to producers (e.g. language barriers etc.)?

3.6 Ethics considerations
The ANU Human Research Ethics Committee approved the interviewing of consumer and importer participants for this study. The main ethical concern associated with this study design was the potential for participants to be identifiable in spite of best efforts to maintain their confidentiality.
This was of particular concern given the small sample size, with participants recruited from a close-knit community of Australian fair trade businesses and advocates.

The risks were outlined to participants in the information sheet, with a number of techniques deployed to reduce the likelihood of participants being identifiable such as participant attribution by pseudonyms or participant category only, the omission of specific place, product and organisation names from written data collection, and the carefully considered presentation of participant data in research outputs.

Participant pseudonyms were generated using the following formula:
[First Letter of Participant Category + Interview Date + Interview Location (ANU or EXT for External) + Interview Format (F = Face-to-face, T = Telephone) ] e.g. [C110315EXTT]

3.7 Strengths and limitations of approach

There were a number of strengths and limitations relating to the design of this study.

3.7.1 Strengths

The recruitment of both consumer and importer participants provided differing perspectives of feedback based on their distinct roles in the supply chain, enabling a rich comparison of conceptual models between the two groups. Taking an interdisciplinary approach to the literature review and study design allowed me to access knowledge and techniques from other areas such as anthropology, enriching the analytical lens used to identify themes and draw conclusions from the data.

A non-“rigid approach” to semi-structured interviewing allowed for questions to be tailored to the specific participant as the interview progressed, enabling a “deeper, more valid understanding of the subject” (Carr, 1994:718) by exploring topics such as consumer-to-consumer feedback which were not anticipated by the researcher when formulating the interview scripts. The mixture of questions about personal experiences and hypothetical scenarios allowed me to gain a more complete picture of how consumers have previously acted when providing feedback, and how they might act in future when encountering positive and negative feedback situations.

An existing rapport with participants recruited from my personal networks also assisted in quickly putting participants at ease, prompting them to provide responses that were potentially “more honest and valid” (Carr, 1994:717) than when conducting interviews with strangers.
3.7.2 Limitations

There were also several weaknesses to the design of this study, which should be addressed if this pilot project is used as a basis for future work. While the small sample size was appropriate to the context of this project, the reliance on secondary data about producers rather than interviewing them directly may limit my understanding of producer perspectives of feedback, and local availability and use of information technology. The limited number of participants also undermined the ability to identify “trends” following the UX “rule of thumb” which requires three or more participants to articulate a common idea (Madrigal and McClain, 2012).

Although a major strength of qualitative research is the ability to gather and analyse data in context (Carr, 1994:718), the use of interviews for data collection rather than participant observation means that my analysis relies on the participants’ perceptions of their own behaviour, which may contrast with how they actually communicate with producers in practice. The effectiveness of the study design and data analysis also “relies on the insights and the abilities of the observer” (ibid.), with my limited research experience potentially affecting the quality and significance of the research outcomes.
4. Results & Discussion

Interview data was manually coded by analysing the interview notes side-by-side to identify common themes and ideas, which have been used as a framework for structuring the discussion.

4.1 Contextual information about interview participants

The following information provides further context to participant responses:

4.1.1 Consumers

The consumer participants were motivated to purchase fair trade products for a number of reasons. These included: characteristics of the product itself such as “long lasting” and “unique” handicraft items (a consumer, [C070515ANUF]); a belief that producers should not be exploited on the basis of geographical location ([C260415EXTF], a consumer) and that the consumers personally “make a difference” by purchasing fair trade products (a consumer, [C070515ANUF]); and support for fair trade conditions (Trade Aid, n.d.) such as improved environmental practices, protection of human rights, and payment of a fair price. Commodities such as tea, coffee, chocolate, spreads, and cereals were regularly purchased by most participants either from supermarkets or speciality shops, while fair trade handicraft items were usually purchased as gifts for others approximately 1-2 times per month.

4.1.2 Importers

The importer participants were founders or owners of small businesses serving the needs of both producers in developing countries and Australian consumers. On the one hand, these importers are assisting to producers by providing access to economic opportunities ([I270415EXTF], an importer) and increasing local demand for a wider variety of fair trade products. On the other hand, these importers satisfy market demand by supplying Australian consumers with a wider range of fair trade products that are both “fashionable” and “ethical” [I270415EXTF]. All three importers sell fair trade handicraft items such as jewellery, scarves, purses, clothing, and hair accessories directly to consumers through an online store or via wholesale intermediaries. Commercial relationships between producers and importers varied depending on the specific organisations involved. Some importers sourced items directly from independent producer organisations, one producer-importer pair were “sister organisations” with common founders [I270415EXTF], and an importer purchased some items from fair trade wholesalers based in other ‘developed’ countries.
4.2 Analysis of web content

I examined the web presence of ten Australian importer organisations (not necessarily those who participated in the study) to gain a better insight into how existing feedback loops operate between consumers, importers and producers, and how ICT is used to facilitate these communications. I reviewed the listings of these organisations in fair trade shopping guides, the organisations’ own websites, and publically available information on their social media accounts. This data complements further examples of web and social media usage for disseminating feedback that were identified by the interview participants.

Preliminary analysis of the web content revealed a lack of explicit feedback mechanisms for consumers to provide feedback to producers. Most importer websites listed their contact details including an email address and phone number, or provided a contact form. However, these feedback mechanisms were intended for consumers to communicate issues with their order, or retailers to express their interest in stocking the importer’s products, rather than gathering consumer experience information to pass onto producers. Most importer organisations examined did not publish feedback online, though one website shared comments expressing consumer satisfaction with product attributes such quality and style. It is not evident whether producers monitor these sites or if this feedback get passed on by importers in other ways.

The use of social media accounts by importers and wholesalers was less interactive than expected. Facebook pages were mostly used to share news articles about the Fair Trade movement, publish product marketing photographs, or provide information about stockists. A small number of social media posts contained information about the producer, and these images were typically more candid and less contrived than the images on websites, demonstrating the effect of importer intermediaries on the way that information is presented. There were only some instances of consumers posting positive product feedback to the importer’s Facebook page in image or text form, which may reflect differences in way that importers leverage social media sites to elicit consumer feedback. It is not known whether producers have the means to locate and access this content.
4.3 Emerging themes

4.3.1 Varying conceptual models of feedback systems

Conceptual models of feedback varied both within and between the consumer and importer participant categories. These conceptual models are analysed in terms of the purpose of fair trade feedback loops, type of feedback provided to producers, differences in the operation of positive and negative feedback loops, and the perception of feedback loops as a “dialogue” between supply chain participants.

4.3.1.1 Purpose of fair trade feedback loops

Consumer and importer participants conceptualised the purpose of fair feedback loops and their own participation in these feedback systems in a number of ways:

Securing product satisfaction

Most consumer participants perceived feedback as an important means of securing their own product satisfaction, particularly if there were negative financial implications such as the product not functioning as expected or the order not being delivered [C030515ANUT]. This supports the argument that product attributes of fair trade items such as “price, quality, convenience, and brand familiarity” are still more important to the consumer than their intrinsic ethical value (De Pelsmacker et al., 2005:2).

Pursuing advocacy objectives

Some participants who described themselves as fair trade “advocates” leveraged feedback loops as a mechanism for pursuing advocacy objectives such as applying pressure to a retailers and importers to stock more fair trade products (a consumer, [C030515ANUT]). For example, one consumer arranged a meeting with a supermarket manager to provide the feedback that their fair trade product range was inadequate for satisfying consumer demand [C030515ANUT], while another used social media to express their support for a business that was more actively engaging in ethical business activities.

Advancing the fair trade movement

One consumer described their role as a “social conscience” for others by providing feedback about fair trade items they had purchased on their social media account to raise awareness of ethical

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1 Some participants consented to the use of pseudonyms as attribution for their responses, which are provided as in-text citations. Other participants consented only to attribution by participant category, and are thus referred to as “a consumer” or “an importer” without reference to their pseudonym.
consumerism and guide other users in their purchasing decisions. Consumers also provided positive feedback on importer social media accounts as a means to support fair trade producers by driving an increase in sales [C260415EXTF]. This suggests that producers are not always the intended recipients of consumer feedback, which is often targeted at other consumers or specifically at importers.

Providing business intelligence
Importers stated that their producer partners demand “hardcore business intelligence” about the colours and styles preferred by particular markets, and feedback supports producers to modify their designs to sell more units rather than being attached or limited to producing in traditional styles (an importer). This was echoed by a consumer who saw their role as assisting producers to “tailor their markets” by providing feedback in response to questions such as “what would you buy?” and “how can we expand our markets?”

4.3.1.2 Identification of different types of feedback loops
Participants described the functioning of parallel feedback loops to producers, with consumer conceptual models emphasising economic feedback through transactional data, and importer conceptual models focusing on qualitative feedback about the product design. Most consumer participants stated that they primarily convey positive or negative feedback about a fair trade product through their spending decisions, making repeat purchases and donations if the consumer experience was positive or taking business elsewhere if it was negative ([C030515ANUT], [C070515ANUF], a consumer). Importers also suggested that producers themselves use sales volume information to evaluate their performance [I160415ANUT]. Consumers indicated that transactional feedback has been, or could be accompanied by verbal product feedback at the retail point-of-sale (POS) ([C030515ANUT], [C070515ANUF], and two other consumers), though these additional exchanges may not be captured with transactional data. A consumer conceptual model of feedback loops thus supports the notion that ethical consumers demonstrate attitudes about a product or company through their purchasing decisions (De Pelsmacker et al., 2005).

On the other hand, importers emphasized the significance of qualitative feedback loops and provide information to producers originating from two sources: feedback from consumers about their product experience; and feedback from importers themselves about the product design and its level of appeal for the Australian retail market. This feedback is communicated through the use of rich media such
as photographs, drawings, sketches and written exchanges with producer partners ([I270415EXTF], [I160415ANUT]). For example, one importer reviews images of jewellery designs generated by the producer, and provides feedback in the form of photographs and drawings found online showing adjustments that could be made to improve the design quality [I160415ANUT]. These recommendations are intended to influence production activities by allowing producers to enhance the desirability of their products for Western consumers, for example by reducing “mix-and-matching” of bright colours which is considered more ‘fashionable’ in Southeast Asian consumers than Australians [I270415EXTF]. Thus, while importer and consumer conceptual models differ in terms of what constitutes “feedback”, both economic and qualitative information allows producers to evaluate and modify their production practices to enhance their profitability.

4.3.1.3. Differences between positive and negative feedback loops

The nature of feedback as ‘positive’ or ‘negative’ informed conceptual models of feedback loop operations, with differing attitudes between participants as to how and when each type of feedback should be provided to producers. Some consumers stated that they would communicate positive feedback through public forums such as importer Facebook pages, driving demand for fair trade products through positive testimonials. However, other consumers did not see the need to provide feedback if the product “works as expected” [C030515ANUT], and importers were also less likely to give positive feedback as this was “implicit in reordering” [I270415EXTF], with the absence of feedback signalling to producers that “everything is fine” and there are no problems or issues that need to be addressed [I160415ANUT].

In contrast, consumers and importers both felt that providing negative feedback was valuable, with one importer expressing a sense of “obligation” to provide producers with market intelligence about why their product is not selling (for example, if the fabric is uncomfortable). Unlike positive feedback, consumers were more inclined to provide negative feedback through “private” mechanisms such as email (C260415EXTF), an importer so that they would not discourage companies from pursuing ethical business practices, or damage the reputation of the fair trade movement. The operation of “closed loops” to producers and visibility of these information flows is therefore influenced by varying conceptual models of ‘positive’ and ‘negative’ feedback held by supply chain participants.
4.3.1.4 Conceptualisations of feedback loops as “dialogue”

Rather than being conceptualised as a one-way communication, consumers and importers instead perceived feedback as *dialogue* between supply chain participants. Consumers expressed a desire for producers to acknowledge and respond to feedback they received, even if the suggestions provided would not be acted upon ([C260415EXTF], a consumer). This suggests that consumer conceptual models include the need for closure following discrete feedback dialogues with producers. Feedback loops from consumers to importers were also dialogic by importers responding to questions and concerns posted on their social media accounts. While some comments could be construed as negative feedback, for example concerns voiced about the importer’s profit margins, one specific importer chooses not to remove this feedback from their Facebook page in order to encourage information transparency. Although consumer and importer conceptual models suggested a conversational quality to feedback exchanges, this was less evident in the online content analysis where social networking was primarily used by importers as a broadcast medium rather than a space for dialogue.

4.3.2 Necessity of intermediaries in feedback loops

While the presence of intermediaries between consumers and producers in fair trade feedback loops appears to be in tension with fair trade’s focus on the “simplification of commodity chains” (Forson and Counihan, 2013:348), the interview data suggests that intermediaries are both a necessary and desirable interface for transmitting feedback to producers.

4.3.2.1 Disadvantages of intermediaries in feedback loops

Participants from both categories identified some disadvantages to consumer feedback passing through intermediaries such as importers prior to reaching producers. Some consumers expressed a preference for providing feedback directly to producers to avoid having their views manipulated or misrepresented ([C030515ANUT], [C070515ANUF]) by intermediaries. In particular, consumers were concerned about the retailer “taking credit” for their positive product experience and using feedback to advance their own commercial interests [C260415EXTF], or having negative feedback framed as a criticism of the producer rather than being offered as constructive advice [C070515ANUF]. While importers demonstrated sensitivity to this issue by phrasing feedback in helpful ways such as ‘let’s make a change together’ rather than ‘you fix this’ [I270415EXTF], there are still perceptions amongst consumers that intermediaries may compromise the integrity of feedback. Consumers also expressed concerns that intermediaries would filter the information contained in feedback loops, and not necessarily pass on all feedback to producers. One consumer
suggested the importer’s organisational culture in terms of being “open” to feedback is a key factor affecting the flow of feedback to producers [C260415EXTF]. Importers identified similar issues in terms of intermediaries between themselves and producers such as overseas wholesalers, describing fair trade as a complicated business model where communication with the producer is “essential” but “hard to maintain” due to the complex array of middlemen involved.

4.3.2.2 Advantages of intermediaries for feedback transmission

In spite of these concerns, intermediaries in fair trade feedback loops are necessary in a number of circumstances to enable information flows from both consumers and importers to producers. Barriers to information technology access can require face-to-face contact in order to close feedback loops to producers. One importer described the challenges of working with palm leaf handicraft producers in a rural Southeast Asian village, where communications had to be conducted through an in-country agent as the producers could not be accessed in any other way [I270415EXTF]. Language and literacy barriers also prevent importers from speaking directly with producers on the factory floor, and they must instead rely on office managers or export agents to translate their feedback to the producers ([I270415EXTF], [I160415ANUT]). Producer organisations may also lack the staff resources needed to monitor and respond to consumer experience feedback provided online (an importer). Importers play a necessary role in reducing this burden by identifying and aggregating the most useful information to report to producers, such as compiling a book of photographs of Australian consumers wearing clothing items made by a particular producer group. Moreover, the presence of an intermediary may be desirable in supporting vulnerable producers who are trying to “free themselves” from situations of disadvantage such as human trafficking, where a random telephone call from an overseas consumer may be a traumatic or unsettling experience (an importer). Intermediaries have a greater understanding of the producers’ specific circumstances and cultural context, and can consequently present feedback to producers in accessible, useful and sensitive ways.

Intermediaries therefore play a useful and necessary role as interfaces for feedback transmission between consumers and producers, with the examples above evoking the metaphors such as a “bridge” [I160415ANUT] or “conduit” used by importers to describe their role in facilitating the flow of goods and information through the supply chain.
4.3.3 Technology as a driver of fair trade feedback

The study indicated that information technology is already used in a number of ways to gather, transmit and access feedback in fair trade supply chains. Participants also suggested potential new ICT interventions to support feedback loops from consumers to producers.

4.3.3.1 Current use of ICT in fair trade feedback loops

ICT was identified as a key driver of information flows from consumers and importers to producers. One importer asserted that ICTs such as email, VoIP and social media are essential to their operations by enabling communications with geographically disparate producer groups, stating that “without the internet, the business wouldn’t really survive” [I270415EXTF]. The ability to email photographs and sketches was considered particularly important given the visual nature of design work, and one importer-producer pair even use the collaboration application Trello to manage feedback loops relating to their business activities [I270415EXTF]. Importers also collect feedback from consumers through online tools such as email satisfaction surveys, website contact forms, product rating systems, and social networking sites such as Facebook. Consumers share this information with other consumers by emailing friends with information about new fair trade products they have found [C070515ANUF], sending product photographs to friends by SMS [C260415EXTF], and sharing consumer experience feedback through social media (a consumer). These observations are consistent with notions from the literature that use of ICTs in fair trade feedback loops is fragmented, and it is difficult to gain a complete picture without interrogating specific links in the supply chain.

4.3.3.2 Barriers to ICT use in feedback loops to producers

The importer participants identified social and technological barriers to producer access to feedback, which are similar to those discussed in the literature. Language barriers limit importer communications directly with producers as previously mentioned, and can give rise to misunderstandings and confusion in commercial interactions. A lack of producer responsiveness to emails also poses issues for importers, such as lengthy response times [I160415ANUT] that elongate the temporal aspect of feedback loops. Some ICTs are used to compensate for deficiencies in others, such as telephone calls replacing emails if producers cannot easily access email or are slow to reply [I270415EXTF]. Some importers must resort to asynchronous communication methods such as email rather than verbal communications to overcome geographical barriers such as timezone differences [I270415EXTF]. Technical infrastructure can also be rudimentary in locations where
producers live and work, with a lack of reliable Internet connection for many producer groups. However, it was difficult for me to gain a first-hand understanding of producer technology usage without interviewing and observing producers directly, which limits my ability to make more specific recommendations for ICT interventions to assist them in future.

4.3.3.3 Future applications of ICT to supply chain communications

Participants had several suggestions about how information technology could be used to improve fair trade feedback loops in future. Importers aspired to implement ICTs that are currently available but they previously lacked resources to investigate, such as email surveys to formalise feedback collection from consumers ([I270415EXTF], an importer) or interactive social media campaigns for consumers to share their product experiences [I160415ANUT]. One importer mentioned the idea of providing IT skills training to producers, but was unsure if producers would understand the value of feedback systems such as an online survey tool even if they possessed the technical skills to use it [I270415EXTF]. Consumers imagined that ICT could be used in future to support more immediate feedback processes, particularly through the introduction of new mobile phone applications. Some consumers suggested developing an “app” that would allow consumers to rate or comment on a fair trade product soon after its purchase ([C070515ANUF], a consumer). Another consumer suggested attaching feedback mechanisms to product barcodes using RFID technology [C070515ANUF], which would extend the functionality of previous work such as the Fair Tracing project (Kundu and Chopra, 2009) by converting one-way information flows to two-way feedback loops. These suggestions are useful in assisting designers to identify future ICT pathways of interest to prospective users.

4.4 Design implications for future ICT interventions

The designers of future ICT interventions to support fair trade feedback loops should be attentive to the following design implications extrapolated from this study of the problem domain:

4.4.1 Designers must account for users’ motivations for giving feedback

The study demonstrates that supply chain participants have different purposes and motivations for providing fair trade product feedback, such as equipping producers with market information, raising awareness of fair trade amongst their contacts, and securing product satisfaction. An interface for consumers to send producers written feedback about their product experience may not appeal to
users who would only usually provide feedback at the retailer level if the item does not function as expected, and who are less concerned about producer information needs that fair trade “advocates”. Designers should also analyse differing expectations about the type of feedback consumers are willing to provide, and the type of information producers want to receive to ensure that these informational transactions are meaningful for all parties involved.

4.4.2 Designers must understand the users’ conceptual models of feedback system operations

The interview data suggests consumers and importers imagine feedback loops to operate in different ways based on the type of information they convey. Consumers may not understand the value of an application to provide product design feedback when they typically express their satisfaction with a product through their spending decisions, and similarly, quantitative sales data reports may not satisfy the information needs of importers and producers. Attitudes towards positive and negative feedback may impact on adoption of ICTs if there is no demonstrable producer need for particular types of feedback, or the destination and visibility feedback is not rendered explicit in the ICT’s implementation.

4.4.3 Designers must analyse feedback paths through fair trade supply chains and the role of intermediaries

The results of this study illustrate that direct feedback from consumers to producers may not always be useful or appropriate without interventions from intermediaries. Raw feedback from consumers may need to be translated into the local language or explained in terms that are accessible to the producer, which would require additional human interventions by intermediaries to support new ICT interventions. Producers may lack the resources to make use of additional consumer experience provided using ICTs, rendering importer involvement even more critical for ICT interventions to be effective.

4.4.4 Designers must identify opportunities and barriers presented by current ICT usage

Designers need to be aware of the technology that is currently available and in use at different stages of the supply chain. Poor Internet access may pose barriers to adopting ICT solutions that provide producers with web content, and a lack of English language or digital literacy skills may prevent
producers from interpreting the feedback they receive, even if the technical infrastructure is operational. As the FANZ project suggests, implementing ICT inventions that leverage existing technologies and business processes rather than disrupting supply chain operations may enhance their uptake by feedback loop participants (FANZ, 2014). Designers should also consider whether new ICT initiatives resolve or further exacerbate the issue of fragmentation in existing feedback systems.
5. Conclusions

5.1 General conclusions about the problem domain

This study demonstrates the complex nature of consumer-to-producer feedback loops in fair trade systems, with an array of design implications for future ICT projects arising from this domain exploration. Consumers and importers maintain a variety of conceptual models about the purpose of feedback systems and motivations for providing feedback, which include securing their own product satisfaction, pursuing fair trade advocacy objectives, advancing the economic interests of the fair trade movement, and supporting producers by providing business intelligence and market information. Closed feedback loops can take different forms based on whether they facilitate the flow of sales data, consumer experience information, or advice about product designs.

The actions taken by consumers and importers in providing feedback are impacted by differing attitudes towards positive feedback as opposed to negative feedback, and the impression of feedback loops as a dialogue between supply chain participants. The presence of supply chain intermediaries such as importers also raises concerns about informational power relationships in the way that feedback is aggregated, filtered and translated before reaching consumers. However, intermediaries are also indispensable for sustaining the effective functioning of fair trade feedback loops by ensuring that producers receive valuable information and can make meaningful adjustments to their supply chain activities.

Existing technologies including email, SMS, telephone, Skype, websites, social media, and mobile phone applications are presently used to communicate feedback through fair trade supply chains. These systems are fragmented in nature, and there are significant social and technological barriers hampering producers’ use to ICT for receiving, interpreting and acting upon feedback. There are consequently a number of opportunities and challenges for design practitioners in HCI4D to introduce new ICT interventions that support the effective operation of these fair trade feedback loops. Designers must consider issues such as motivations for giving feedback, conceptual models of feedback system operations, the involvement of supply chain intermediaries in feedback loops, and the social and technological context of fair trade producers in identifying new ICT pathways in this area.
5.2 Evaluation of the study design

5.2.1 Quality of the research questions
The research questions for this scoping study enabled me to elicit a range of interesting insights into the problem domain of fair trade feedback loops, with slight revisions to these questions exposing this study to further relevant lines of inquiry. While the project topic is presently focussed on feedback loops with the producer as the intended recipient, the research questions could be broadened to capture other information flows such as the consumer-to-consumer feedback loops encountered in the data. I initially conceptualised feedback as qualitative information about the consumer experience of fair trade products, though it became evident during the course of this study that consumers provide feedback in other ways such as sales volume information from their shopping habits, and broader understandings of feedback should be accommodated in the research questions. “Conceptual models” proved to be a valuable analytical lens for mapping the problem context, and this concept could therefore be more explicitly articulated in the research questions.

5.2.2 Effectiveness of the qualitative approach
The qualitative approach taken in this project was generally effective for gathering data about fair trade feedback loops through web content analysis and semi-structured interviews. A weakness in this study was the inability to interview a fair trade handicraft producer directly to gain a first-hand understanding of their conceptual models about feedback systems, and their use of ICTs. Future research using this study design should therefore involve an interview with at least one Southeast Asian fair trade producer to provide a more complete understanding of the problem domain. The consumer sample size was sufficient, though it may be useful to interview a wider group of importers since unique insights can be gained from the specific context of each importer-producer relationships. Moreover, the use of qualitative data coding software could enhance the quality of the data analysis, and all interviews should be recorded in future if possible so that specific ideas and phrases can be more accurately revisited.
6. References


METROPOLE, V. 2014. First tast of chocolate in Ivory Coast.


NESTLE n.d. From bean to bar - the production process.
7. Appendices

7.1 Initial project description and expected outcomes

7.1.1 Project Description
Fair Trade is “based on dialogue, transparency and respect” (FINE 2001), with communication about fair trade activities throughout the supply chain a key aspect for ensuring fair and accountable trading practices. ICT in the form of web sites, social media, videos, digital reports and photo galleries is used extensively to communicate information about fair trade producers, products and manufacturing conditions to consumers. However, less attention is granted to the way in which ICT facilitates the information loop of feedback from consumers in the global “North” back to producers in the “South”, often mediated by retailers and importers.

This project draws on concepts from the field of Information Systems and HCI to examine the effect of consumer feedback on fair trade importers and producers, and whether feedback given and modes of delivery are consistent with their respective conceptual models. Using qualitative techniques to evaluate fair trade handicraft case studies from Australian importers and their producer partners, this study will evaluate information flows from Australian consumers to producers and identify considerations for ICT interventions to further close the feedback loop. These findings will make an important contribution to HCI4D by addressing the application of ICT to the fair trade system, particularly from an Australian perspective and considering handicraft organisations.

7.1.2 Learning Objectives
• Understand capacity for HCI interventions in international development contexts
• Conduct a comprehensive literature review on a computer science topic
• Design and undertake an investigative comprising interview and/or survey questions
• Undertake qualitative coding and analysis on original data
• Develop written and oral communication skills for academic research
7.2 Independent Study Contract

7.2.1 Independent study contract

SECTION A (Students and Supervisors)

UniID: u4852974
SURNAME: Taylor
FIRST NAMES: Jennyfer Elizabeth Lawrence
PROJECT SUPERVISOR (may be external): Duncan Stevenson
COURSE SUPERVISOR (a RSCS academic): Tom Gedeon
COURSE CODE, TITLE AND UNIT: COMP3710 Topics In Computer Science
SEMESTER ☑ S1 ☐ S2 YEAR: 2015

PROJECT TITLE: ICT Pathways for Consumer-Producer Information Feedback within the Fair Trade System

LEARNING OBJECTIVES:

- Understand capacity for HCI interventions in international development contexts
- Conduct a comprehensive literature review on a computer science topic
- Design and undertake an investigative comprising interview and/or survey questions
- Undertake qualitative coding and analysis on original data
- Develop written and oral communication skills for academic research

PROJECT DESCRIPTION:

Fair Trade is “based on dialogue, transparency and respect” (FINE 2001), with communication about fair trade activities throughout the supply chain a key aspect for ensuring fair and accountable trading practices. ICT in the form of web sites, social media, videos, digital reports and photo galleries is used extensively to communicate information about fair trade producers, products and manufacturing conditions to consumers. However, less attention is granted to the way in which ICT facilitates the information loop of feedback from consumers in the global “North” back to producers in the “South”, often mediated by retailers and importers.

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ASSESSMENT (as per course’s project rules web page, with the differences noted below):

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<th>Assessed Project Components:</th>
<th>% Mark</th>
<th>Due Date</th>
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<tr>
<td>Research Report (3000–4000 words): Written reporting outlining qualitative study design,</td>
<td>45%</td>
<td>Week 13 (May 29)</td>
<td>Shirley Gregor</td>
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<td>analysis and findings including reflection on the research experience.</td>
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<tr>
<td>Investigative study design, experiment and processing of results.</td>
<td>45%</td>
<td>Week 13 (May 29)</td>
<td>Duncan Stevenson</td>
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<td>Presentation: Oral presentation of research findings.</td>
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<td>With other project</td>
<td>Duncan Stevenson</td>
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MEETING DATES (IF KNOWN):
- Weekly meeting with supervisor (1-2 hours)
- Fortnightly attendance at iHcc research group meetings
- Occasional attendance at research skills training and seminars

STUDENT DECLARATION: I agree to fulfil the above defined contract: 

................................................................. 5 Feb 2015
Signature                                                                                     Date

SECTION B (Supervisor):

I am willing to supervise and support this project. I have checked the student’s academic record and believe this student can complete the project.

................................................................. 5 Feb 2015
Signature                                                                                     Date

REQUIRED DEPARTMENT RESOURCES:

SECTION C (Course coordinator approval)                                                       12/10/15

.................................................................  
Signature                                                                                        Date
7.2.2 Initial project plan

**Week 1-3 Project Set Up/Literature Review**
- Searching and Referencing Skills Training
- Literature Review
- Theoretical Frameworks and Positioning
- Research Question Refinement
- Participant Identification
- Application For Ethics Variation

**Week 4-6 Investigative Study Design**
- Qualitative Study Design Training
- Survey/Interview Question Design
- Development of Participant Briefing Materials
- Participant Invitation

**Week 7-9 (+ 2 Weeks ‘Reading Break’) Data Gathering**
- Data Gathering:
  - Interview
  - Survey
  - Artifacts (e.g. design books, written documentation)
  - Observation (e.g. observing Skype/phone discussions between importers and producers?)
- Data Recording/Management

**Week 10-13: Data Analysis**
- Qualitative Data Analysis Training
- Data Coding
- Research Report Write Up
- Presentation Preparation

DELIVERABLE: PRESENTATION (Week 12), FINAL REPORT/ARTIFACT (Week 13)
7.3 Artifact Description

My artefact contains the following files:

<table>
<thead>
<tr>
<th>File Description</th>
<th>Author</th>
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</thead>
<tbody>
<tr>
<td>1. Project Setup</td>
<td></td>
</tr>
<tr>
<td>Independent Study Contract</td>
<td>My own original work based on the ISC template</td>
</tr>
<tr>
<td>Research questions</td>
<td>My own original work</td>
</tr>
<tr>
<td>Contextual diagram of problem domain</td>
<td>My own original work</td>
</tr>
<tr>
<td>2. Human Ethics Documentation</td>
<td></td>
</tr>
<tr>
<td>E1 protocol, information sheet, consent form</td>
<td>My own work, adapted from HREC ethics templates and ethics documentation from Damian Beard’s 2014 software engineering Honours project</td>
</tr>
<tr>
<td>E2 protocol, information sheet, consent form</td>
<td>Email correspondence with HREC</td>
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<tr>
<td>Email correspondence with HREC</td>
<td>My own original work</td>
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<tr>
<td>3. Interview Scripts</td>
<td></td>
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<tr>
<td>Consumer interview script</td>
<td>My own original work</td>
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<tr>
<td>Importer interview script</td>
<td>My own original work</td>
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<td>4. Interview Notes</td>
<td></td>
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<tr>
<td>List of participant pseudonyms</td>
<td>My own original work</td>
</tr>
<tr>
<td>Types notes from each participant interview</td>
<td>My own original work</td>
</tr>
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<td>5. Interview Recordings</td>
<td></td>
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<tr>
<td>Audio recordings from two interview sessions</td>
<td>My own original work</td>
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<td>6. Data Analysis</td>
<td></td>
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<td>Photograph of kitchen table data analysis</td>
<td>My own original work</td>
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<tr>
<td>Notes from online content analysis</td>
<td>My own original work with external sources cited</td>
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<tr>
<td>7. Presentation</td>
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<tr>
<td>Presentation slides</td>
<td>My own original work with external sources cited</td>
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<tr>
<td>Speaker notes</td>
<td>My own original work with external sources cited</td>
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</table>
7.4 Readme File
This archive contains written documents, images, and audio files relating to the study design of the COMP3710 project “ICT Pathways for Consumer-Producer Information Feedback within the Fair Trade System”. The contents of the archive are as follows:

1_Project_Setup: This folder contains a signed copy of my Independent Study Contract, an RTF file with the research questions explored through the project (developed after the ISC), and a contextual diagram identifying the specific aspect of the problem domain under consideration, which is reverse feedback loops to fair trade producers.

2_Human_Ethics_Documentation: Ethics approval for this study was obtained from the ANU Human Research Ethics Committee (HREC). This folder contains ethics documentation for both the E1 protocol (domestic participants), and the E2 protocol (overseas participants).

The files provided are the final versions of these documents, after modifications were made to address HREC feedback. Text for the full application and information sheets was adapted from the ethics documentation for Damian Beard’s 2015 Honours Project (RSCS).

- **E1_Documentation** relates to an Expedited Category 1 application to interview Australian consumers and importers. The folder contains the full application text, participant information sheet, written consent form, and participant invitation emails.

- **E2_Documentation** relates to an Expedited Category 2 application to interview overseas producers. A separate protocol was needed for this participant category given the additional sensitivities arising from overseas data collection. The folder contains the full application text, participant information sheet, oral consent script, and producer invitation email. While E2 approval was granted, I was unable to interview any producers directly given the restricted timeframes of a six-unit project.

- **Email_Correspondence** contains feedback received from the ANU Human Research Ethics Committee about the applications, and my email responses answering their questions, and describing how the project documentation was modified to address their concerns.

3_Interview_Scripts: This folder contains “scripts” with the interview questions used to guide my discussions with participants. The Consumer Interview Script contains additional information about modifications to the script following the pilot interview.

4_Interview_Notes: This folder contains typed versions of the notes I took during each of the interviews. These are not a finished research output, but rather an electronic version of my rough hardcopy notes written into prose. As such, they contain quotes, thoughts, annotations, diagrams, and initial highlighting of interesting phrases and emerging themes.

The Participant List RTF provides a list of the participant pseudonyms in interview date order. These pseudonyms were generated using the following formula:
[First Letter of Participant Category + Interview Date + Interview Location (ANU or EXT for External) + Interview Format (F = Face-to-face, T = Telephone) ]

5_Interview_Recordings: This folder contains recordings of two interviews: one with a consumer and one with an importer. Not all interviews were recorded due to factors such as participant consent, ambient noise, and recording technology available at the time of the interview. These files
have been omitted from electronic submission as the file sizes are too large for an email attachment, but will be provided to the assessor on a USB stick.

6_Data_Analysis: This folder contains a photograph of the “kitchen table” style coding process undertaken to analyse the interview notes and identify emerging themes. The notes were printed and physically arranged in front of me, and I worked through the documents by highlighting commonalities between them, using different colours to denote distinct themes.

My initial topics of interest were “what producers know/want to know”, “how producer communications are conducted”, “barriers to feedback” and “nature of feedback provided”. Following this process, I copied and pasted these quotes from the interviews files into my report document and wrote them up into the discussion section.

The word document contains rough working notes from online content analysis of a number of fair trade importer organisations.

7_Presentation: This folder contains the slides and speaker notes from my project seminar.
7.5 Ethics Documentation

7.5.1 Participant Information Sheet

Participant Information Sheet – Consumer/Importer

Researcher:
My name is Jennyfer Lawrence Taylor. I am a final year Bachelor of Arts/Bachelor of Information Technology student at the Research School of Computer Science at the Australian National University. I am undertaking this study as an individual research project for course credit, and my supervisors are Dr Duncan Stevenson and Professor Tom Gedeon.

Project Title: ICT Pathways for Consumer-Producer Information Feedback within the Fair Trade System.

General Outline of the Project:
This project examines the consumer-to-producer feedback in Fair Trade handicraft supply chains to determine the nature and impact of information about the consumer experience that is provided to producers, which will inform new pathways for using technology to improve feedback mechanisms. The study will consider information flows at different stages of the supply chain by seeking consumer and importer perspectives through interviews.

The target participant groups are a) consumers of Fair Trade handicraft products located in Australia (ten participants) and b) Australian-based organisations that import Fair Trade handicrafts from overseas producers (three participants). Consumers have been identified through the researcher’s social connections on the basis of having purchased Fair Trade products, and formally invited to participate in the study via email. Importers have been identified based on their interest in producer feedback mechanisms as expressed through their public web presence, and formally invited to participate in the study via email.

The data collected during this research will be presented in research report as an assessable component of my study, with a chance that this may be published at a computing conference. Participants will be provided with a copy of the assessable report and any subsequent academic publications produced by the research team using data collected for the study at no cost.

Participant Involvement:
- Participation in this study is entirely voluntary and participants may without any penalty, decline to take part or withdraw from the research at any time up until the submission of the research report without providing an explanation, or refuse to answer a question. Non-participation will not be held against any potential candidate for this study. If you do chose to withdraw from this study, your data will be erased from our digital and hard copy records.
- Participants will be asked questions as part of an interview based on their role in the fair trade supply chain (participant category). The responses to these questions will be based on the participants’ personal opinions. If appropriate, participants may be welcomed to participate in a follow up interview, however there is no requirement for them to do so.
- The research will take place in an office setting on campus at the Australian National University, in an off-campus location in Canberra city mutually agreed upon by the researcher and participant, or by phone. Interviews are expected to take between 15 and 30 minutes.
• Notes regarding the results of the interviews will be collected by the primary investigator. Audio recording may also be used to record interviews, however such technology will be drawn to participants’ attention prior to the commencement of any interview, and will only be used with the participant’s consent.
• The pilot study will benefit the HCI, information systems and ethical consumerism research communities by creating avenues for further academic enquiry. Importers may benefit from increased insights into communication activities in their own supply chains, and how they could leverage technology to better facilitate feedback.
• The primary risk of participating in this study is third-party identification despite the researchers’ best efforts to conceal your identity. In addition to the confidentiality measures outlined below, our strategies to address this have included designing interview questions that avoid deliberately eliciting sensitive information from participants, presenting data in ways that prevent participant identities from being easily deduced, and allowing participants to withdraw consent at any time.

Confidentiality:
• Only my project supervisors and I will have access to the collected data.
• With regard to publication of results, participant information will be attributed by participant category only (Consumer/Importer), with participants being referenced by an unidentifiable pseudonym where necessary. No references will be made to participants’ personal names or organisational names.
• Participants have the option to choose their desired level of attribution on the participant consent form.
• Confidentiality will be protected as far as the law allows.

Data Storage:
• Interview recordings, transcripts and field notes will be stored on a password protected laptop for one year following any publications arising from this research report. After this time they will be erased from the computer.

Queries and Concerns:
If you require further information, please contact myself at jennyfer.lawrence.taylor@anu.edu.au or 0497417614. My supervisors Dr Duncan Stevenson can be contacted at Duncan.stevenson@anu.edu.au or 0419140209, and Professor Tom Gedeon at tom@cs.anu.edu.au or 0261251052.

Ethics Committee Clearance:
The ethical aspects of this research have been approved by the ANU Human Research Ethics Committee. If you have any concerns or complaints about how this research has been conducted, please contact:
Ethics Manager
The ANU Human Research Ethics Committee
The Australian National University
Telephone: +61 2 6125 3427
Email: Human.Ethics Officer@anu.edu.au

7.5.2 Written Consent Form

WRITTEN CONSENT for Participants for the study known as ICT Pathways for Consumer-Producer Information Feedback within the Fair Trade System
I have read and understood the Information Sheet you have given me about the research project, and I have had any questions and concerns about the project (listed here ________________________________________________________________________________________________) addressed to my satisfaction. I agree to participate in the project. YES ☐ NO ☐

I agree to this interview being audio-recorded YES ☐ NO ☐

I agree to be identified in the following way within research outputs:

Participant Category (Importer/Consumer) YES ☐ NO ☐

Pseudonym YES ☐ NO ☐

No attribution YES ☐ NO ☐

Signature:………………………………………………
7.5.3 Participant Invitation Emails

Dear X,

I am currently undertaking a supervised research project at the Australian National University Research School of Computer Science about consumer-to-producer feedback loops in the Fair Trade system. I was wondering if I might be able to interview you as a consumer of Fair Trade products, in particular Fair Trade handicraft (non-commodity) items, to gather data for the project. This is an independent study that is not receiving any sponsorship or direction from third party Fair Trade organisations.

My project examines the nature of consumer feedback about a Fair Trade product that is communicated back through the supply chain to the producers, and whether technology can be used to improve these feedback mechanisms. In this pilot study, we are focusing on consumers and importers as different links in the supply chain to examine different perspectives about why consumer feedback is useful for producers, motivations for giving feedback, and how information is “translated” by the parties involved.

Interviews will take approximately 15-30 minutes and can be conducted on campus at the ANU, by phone, or at an off-campus location in Canberra city mutually agreed upon by the researcher and participant. Participation in the study is entirely voluntary, and personal and organisational identities of participants will remain confidential. The data collected during these interviews will be presented in research report as an assessable component of my study, with a chance that this may be published at a computing conference.

If you are interested in this research and would like to learn more before considering participation, I have attached a Participant Information Sheet which includes details about my project, as well as a consent form which I will collect at the time of the interview (or it can be scanned and emailed in the case of phone interviews). If you have any additional questions, please do not hesitate to raise them with me. Please respond to this email or phone me on 0497417614 if you wish to participate, and we will liaise further to determine a suitable time/location for the interview.

Kind regards,

Jennyfer Lawrence Taylor
Tutor | Research Assistant | Student Ambassador
Research School of Computer Science
ANU College of Engineering and Computer Science
The Australian National University
Canberra ACT 2601
Jennyfer.Lawrence.Taylor@anu.edu.au
Dear X

My name is Jennyfer Lawrence Taylor and I am a Bachelor of Arts/Bachelor of IT student. I am currently undertaking a supervised research project at the Australian National University Research School of Computer Science about consumer-to-producer feedback loops in the Fair Trade system. I was wondering if I might be able to interview you in your capacity as an importer of Fair Trade products, in particular Fair Trade handicraft (non-commodity) items, to gather data for the project. This is an independent study that is not receiving any sponsorship or direction from third party Fair Trade organisations.

My project examines the nature of consumer feedback about a Fair Trade product that is communicated back through the supply chain to the producers, and whether technology can be used to improve these feedback mechanisms. In this pilot study, we are focusing on consumers and importers as different links in the supply chain to examine different perspectives about why consumer feedback is useful for producers, motivations for giving feedback, and how information is “translated” by the parties involved.

Interviews will take approximately 15-30 minutes and can be conducted on campus at the ANU, by phone, or at an off-campus location in Canberra city mutually agreed upon by the researcher and participant. Participation in the study is entirely voluntary, and personal and organisational identities of participants will remain confidential. The data collected during these interviews will be presented in research report as an assessable component of my study, with a chance that this may be published at a computing conference.

If you are interested in this research and would like to learn more before considering participation, I have attached a Participant Information Sheet which includes details about my project, as well as a consent form which I will collect at the time of the interview (or it can be scanned and emailed in the case of phone interviews). If you have any additional questions, please do not hesitate to raise them with me. Please respond to this email or phone me on 0497417614 if you wish to participate, and we will liaise further to determine a suitable time/location for the interview.

Kind regards,

Jennyfer Lawrence Taylor  
Tutor | Research Assistant | Student Ambassador  
Research School of Computer Science  
ANU College of Engineering and Computer Science  
The Australian National University  
Canberra ACT 2601  
Jennyfer.Lawrence.Taylor@anu.edu.au
7.6 Interview Scripts

7.6.1 Consumer Interviews

Check that we have the written consent form:
- Do you have any questions about the study?
- How would you like to be attributed in the study?
- Do you understand the risks involved?

Interview conditions:
- [Whether supervisor was present]
- [Whether interview is being recorded]
- Any names of people, organisations, places mentioned will not be recorded or will be generalized to prevent identification.

Reiterate project topic:
- As you know, Fair Trade is about reconnecting the consumer with the supplier who made their products. Consumers learn information about their producers who made their item through the product packaging, POS material, fact sheets, internet resources, talking to the retailer.
- We are interested in the reverse flow of information back through the supply chain to producers about who the people are that buy their products, and the consumer experience of their products.
- By learning more about the nature of feedback given to producers (what, why, when, how) and the role of technology in this process, we hope to gain a better understanding of how IT can be used to assist in this feedback process.

Questions:
For Consumers:
- Topic: Consumption patterns:
  - Why is ethical consumption and fair trade important to you? (is informational aspect a part of this?)
  - What type of ethical products do you purchase?
    - Where do you purchase these items?
    - Why do you choose this items (in particular handicrafts) over non-fair trade equivalents?
  - How often do you purchase ethical products?
  - Do you ever share information about your ethical purchases using social media?

- Topic: Informational context:
  - What do you know about the producers who manufactured the ethical products you buy?
  - How did you obtain this information?
  - Do you look for information about the products you buy and their producers online? On social media?
o For one product: what do you think the supply chain looks like for this product? Who do you think is involved?

• Topic: Feedback:
  o Do you ever provide feedback about your experience with an ethical product to a) the retailer, b) the importer, c) the producer directly?
    ▪ What type of information do you provide?
    ▪ How do you provide this feedback?
  o If you have not provided feedback about a Fair Trade product, why not?
    ▪ Imagine you have purchased a Fair Trade handicraft and have had an excellent experience of the product. Who would you communicate this to and how?
    ▪ Imagine you have purchased a Fair Trade handicraft and had an unsatisfactory experience. Who would you communicate this to and how?
    ▪ If you are not willing to give feedback, how do you think the producers find out about the consumer experience?
  o Do you believe that this feedback is communicated to the producer? If so-
    ▪ How do you believe the producers respond to this feedback?
    ▪ Do you believe your feedback would be useful for them? Why/why not?
  o How do you believe the retailer, importer and producer respond to your feedback?

Thank you for your participation
-Would you consent to a follow up (since this is the first one, might refine questions)?
-We are also considering interviewing some producers (additional ethics process)- would you be willing to facilitate this communication?
7.6.2 Importer Interviews

Check that we have the written consent form:
- Do you have any questions about the study?
- How would you like to be attributed in the study?
- Do you understand the risks involved?

Interview conditions:
- [Whether supervisor was present]
- [Whether interview is being recorded]
- Any names of people, organisations, places mentioned will not be recorded or will be generalized to prevent identification.

Reiterate project topic:
- As you know, Fair Trade is about reconnecting the consumer with the supplier who made their products. Consumers learn information about their producers who made their item through the product packaging, POS material, fact sheets, internet resources, talking to the retailer.
- We are interested in the reverse flow of information back through the supply chain to producers about who the people are that buy their products, and the consumer experience of their products.
- By learning more about the nature of feedback given to producers (what, why, when, how) and the role of technology in this process, we hope to gain a better understanding of how IT can be used to assist in this feedback process.
- [Importers are a crucial part of this process as the interface/link between consumers, the Australian part of the supply chain, and the producers they work with.]

Questions:
- Topic: Involvement in Fair Trade
  o How and why did you become involved with the fair trade system?
  o What types of producer partners do you work with, and in what geographic region are they based?
  o What type of products do you import and sell in Australia, and where do you sell them? Who are your consumers?
  o How can consumers provide feedback about the products you import? Are they able to contact producers directly?

- Topic: Supply chain operations
  o What does your broader supply chain look like? Who is involved?
    ▪ For face-to-face interviews, we may request that importers create a visual map of their supply chain.
  o Can you explain the role of each organisation involved in the supply chain? What do you consider to be the role of your organisation in your supply chain?
  o Which parts of the supply chain does your organisation communicate with directly?
  o What media do you use to communicate with your producer partners? How often do these communications take place?
• Topic: Communication with producer partners
  o What type of feedback do you provide importers about their products/activities/working practices?
  o How do you communicate this to producers (voice, written, photos, in person)? Do you tell them everything that is received from consumers, or do you summarize the information?
  o Is their feedback you choose not to provide producers with? Why is this the case?
  o Do producers themselves ask for any particular type of feedback from you or the consumer?
  o How do the producers respond to this feedback?
    ▪ What do you believe they do with this information?
    ▪ What effect does this feedback have on the production process going forward?
  o Do you perceive any barriers to gathering feedback and passing this onto producers (e.g. language barriers etc.)?
  o How do you think technology could be used to better help you communicate with producers?

Thank you for your participation
-Would you consent to a follow up (since this is the first one, might refine questions)?
-We are also considering interviewing some producers (additional ethics process)- would you be willing to facilitate this communication?