

**A Development Strategy for Connecting
First-World Consumers to Third-World
Producers: Integrating Value Chain Transparency
into E-Commerce Design**

by

Zahir Dossa

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Submitted to the Department of Electrical Engineering and Computer
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Abstract

Value chain transparency, such as publishing member biographies and profit distribution, can be a powerful tool in increasing consumer trust and consumer loyalty. This thesis provides a methodology for integrating value chain transparency into E-commerce site design and makes preliminary findings of the positive influence this strategy has on consumer buying behavior. The design and implementation of integrating value chain information within an E-commerce site is demonstrated through the development of theargantree.com. The Argan Tree is a cooperative of 18 women based in southwestern Morocco who produce argan oil. theargantree.com connects these producers to consumers in the U.S. to sell this oil for its culinary and cosmetic benefits. The implications of this study can transform the cooperative landscape, which is often marked by low wages, a lack of accountability, and difficulty competing in high-end markets. By equipping these organizations with the Internet-based strategies proposed, cooperatives can overcome these challenges and serve as organizations capable of real poverty-alleviation. While the direct application of this thesis is aimed at producer cooperatives of under-privileged populations, the underlying theories and findings can support any retail organization.

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In the fifth grade, I asked my best friend at the time what the best engineering university in the world was. His response was MIT. It was my dream to go there ever since. Not many people are able to fulfill the dreams they conjured in middle school, and therefore my first thanks go to my family for keeping this dream alive and enabling me to fulfill it.

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Chapter 1

Introduction

This thesis presents a solution for integrating value chain transparency in an e-commerce site to increase consumer trust and loyalty.

1.1 Overview

The web-design strategy proposed by this thesis focuses on creating relationships between consumers and producers by publishing value chain information including profit distribution and member biographies. Making the value chain transparent and accessible will allow consumers to attach products to faces and see where their money goes. Both of these in turn, I argue, will positively influence consumer behavior. Through the incorporation of these Internet-based strategies, retailers will be able to sell directly to consumers, thereby eliminating middle-men, and benefit both consumers and producers more. While I apply these strategies to the e-commerce site of a producer cooperative, *theargantree.com* they can be applied to any e-commerce site.

1.2 Related Work

Value chain transparency through on-line medium has been effectively used by non-retail organizations to create trust and to foster a relationship between people on the

opposite ends of a value chain. One of the first organizations to utilize this strategy effectively was Save the Children, which enables an individual to sponsor a child in need. Through *savethechildren.org*, donors are able to see a photo of the specific child they will be sponsoring along with biographical information. This information provides donors with a sense of trust and assurance that their money is going towards the intended cause. It also forges a direct connection between donors and the children they are supporting. Although it is unclear which of these two dimensions is more significant in altering consumer behavior, the strategy is most likely an effective one. Other types of organizations have effectively integrated the same strategy but in a different context. Two prime examples are *Kiva.org* and *Prosper.com*. Through both of these organizations, lenders provide micro-loans to borrowers. In the case of *Kiva.org*, borrowers are in developing countries and are generally launching micro-enterprises, while in the case of *Prosper.com*, borrowers are in the United States and use the loans for a variety of purposes. Through each of these websites, lenders are shown a slew of information to not only create trust but to also inform them on their decision. Moreover, in conjunction with a picture and biographical data, a specific description about what the loan will be used for along with a loan repayment history is provided to lenders. The implications of value chain transparency can therefore be wide-sweeping and significantly influence user behavior.

1.3 Application

Although value chain transparency strategies have been implemented in certain sectors, they have yet to be integrated into the consumer retail sector. This is an enormous sector that can be significantly impacted by such strategies. Through value chain transparency, consumers will be able to put faces to products and learn about the producers of the goods they are purchasing from. They will know exactly where their money goes and be able to see their impact. Both of these aspects are areas of concern in the consumer retail industry leading to various labor regulations, human rights laws, and socially-responsible purchasing movements such as the Fair Trade

movement. Consumers have also begun demanding to know more details about the products themselves such as chemicals added and processing conditions. Thus, my thesis applies Internet-based value chain transparency strategies to the consumer retail sector, and in particular to producer cooperatives in developing regions. This thesis focuses on integrating value chain transparency in the design and development of an e-commerce site: *theargantree.com*. This site, which has already launched, sells argan oil produced by an 18-member, female cooperative in Morocco. Argan oil is a product derived from the argan tree native to Southwestern Morocco and currently not grown elsewhere. The oil has been used by the Berber population for millennia for its various health benefits in both culinary and cosmetic applications. Upon its benefits being proven through scientific methods, argan oil was commercialized across Europe. It has just recently been introduced in the United States. *theargantree.com* enables consumers to purchase argan oil (either culinary or cosmetic bottles), learn about the women producers (pictures, biographical information, and reasons for joining the cooperative), learn about argan oil (its benefits, how it is made, and its uses), and see where the money spent on their purchase goes.

1.4 Motivation

The motivation behind this research is to show whether the utilization of Internet-based marketing strategies (by producer cooperatives) that incorporate value chain transparency can increase profits and thereby contribute to poverty alleviation. This relationship is two-fold: 1) the impact of these strategies on consumer behavior and 2) the impact of these strategies on cooperative behavior. The positive influence of either one of these can lead to significant development implications.

1.4.1 Impact on Consumer Behavior

Internet-based marketing strategies that highlight value chain transparency can positively influence consumer behavior. Consumer trust and loyalty can increase from knowledge about producers and profit distribution. This knowledge will particularly

appeal to socially-conscious consumers. Thus, products can be sold at a premium or can remain competitively priced and gain a larger market share. In either instance, the cooperative would realize an increase in revenues.

1.4.2 Impact on Cooperative Behavior

An increase in a cooperative's revenues does not necessarily translate to an increase in income for female producers. Furthermore, various studies on cooperatives have been conducted that show local elites do not equally distribute profits [17, 18]. However, value chain transparency may increase the level of accountability in an organization and improve the power structure of cooperative organizations. These effects on cooperative behavior are not assessed in the body of this thesis. Instead, I analyze these impacts in my doctoral research in the Department of Urban Studies and Planning at MIT.

1.4.3 Development Implications

The impact of integrating value-chain transparency as an Internet-marketing strategy can have far-reaching effects on the development landscape. Cooperatives are promoted by macro-level planning entities as poverty-alleviation strategies yet they often fail to reach their potential due to a lack of accountability, low wages, and difficulty competing in high-end markets. All of these negative factors can be potentially reversed through the employment of the Internet-based strategies proposed in this thesis. Such strategies can increase accountability, improve profitability, and enable cooperatives to compete by eliminating middle-men. Moreover, cooperatives often have to brand and market their products through associations, which amass a large percentage of the profits. Under the e-commerce scheme proposed, cooperatives can eliminate the need to sell through these associations and instead sell directly to consumers. Therefore, development aid can be funneled into empowering cooperatives to utilize Web-based strategies and transparent practices as opposed to one-time grants.

1.4.4 Socially Conscious Retail Environment

The implications of the strategies proposed will not only transform the development paradigm but also the consumer retail one. Furthermore, it is often costly for firms to appear socially responsible as evidenced in the Fair Trade movement and other certification programs [7]. The integration of value chain transparency, however, does not require lengthy and costly certification procedures. By making information readily available and accessible to consumers, socially responsible companies will be recognized in a much easier and cost-efficient manner. This can therefore improve consumer awareness and increase socially-conscious behavior.

1.5 Structure of Thesis

- Chapter 1 provides an overview of the thesis, related work, applications of the thesis, and the motivations for it
- Chapter 2 is a review of the underlying theories and findings the thesis is based upon along with the bodies of literature it contributes to
- Chapter 3 presents the steps taken in designing and implementing an e-commerce site
- Chapter 4 introduces a strategy for integrating value chain transparency in an e-commerce site
- Chapter 5 analyzes preliminary findings on the effects of the Internet-based strategies proposed in this thesis
- Chapter 6 discusses further improvements, findings, future work, and the contributions this thesis makes

Chapter 2

Literature Review

My thesis is situated in information economics and consumer behavior theory. My thesis project integrates value chain transparency with e-commerce web-design theories, principles, and practices.

2.1 Information Economics

Information economics theory studies the impacts of information on economic decisions. I first summarize the classical theory of information economics before discussing how the Internet has transformed the field.

2.1.1 Classical Information Economics

George J. Stigler was an early pioneer in the field of information economics. His findings on the costs of search to both sellers and buyers along with the effects of search on price are particularly relevant for understanding the impact that the Internet makes. Stigler shows that the costs of search are significant and limit sellers and buyers in the information they have for purchasing decisions [16]. The creation of meeting places or channels are an ideal way to bring buyers and sellers together. In this fashion, the costs for search decrease and prices stabilize. The relationship between the cost of search and prices is an intriguing one. Stigler demonstrates that

the greater the decrease in cost of search, the smaller the dispersion of prices will be. Moreover, if sellers and buyers are able to get more information about each other at a lower cost, there will be a lesser variation in prices.

2.1.2 Impact of the Internet on Information Economics

The Internet, albeit a technology not conceived by Stigler, has the profound effect one would expect if using the theories Stigler lays forth. Grewal et al. describe three significant first-order effects of the Internet: 1) a reduction in search costs; 2) lower costs of market entry, and therefore an increase in competition; and 3) reduced information asymmetry [8]. An earlier study conducted by Yannis Bakos discusses the same three outcomes of the Internet [2]. All of these effects are due to the large, low-cost channels that the Internet provides both sellers and buyers to locate each other and communicate with. These effects have decreased the variability in prices as Stigler would expect. Grewal et al. go further to show that as the variability in prices decreases, so does the availability of marketers to differentiate on price alone. Therefore, advertising agents need to understand consumer behavior in order to deliver other forms of value to the consumer. These forms of value are generally intangible and thus a more in-depth view of consumer behavior is necessary in order to transform intangible goods into tangible assets [5].

2.2 Consumer Behavior

Consumer behavior is a field of study that uses scientific research to understand consumer decisions in a marketplace. I assess three areas that capture the impacts of value chain transparency in e-commerce marketing strategies on consumer behavior: branding versus information, consumer trust, and consumer loyalty.

2.2.1 Branding versus Information

A significant assumption of enabling producer cooperatives and other small and medium-sized retailers to compete via the Internet-based strategies proposed is that transparency and information will overcome the lack of strong brand recognition. A joint study by Micael Ward and Michael Lee confirms this hypothesis. Through survey data gathered from members of the Internet community, Ward and Lee concluded that recent adopters of the Internet would rely on product branding but as search proficiency improves, brand loyalty decreases [19]. Although the study did not conclude what alternative measures lead consumers to select a product as search proficiency increases, we can conclude from the study that product brand is not one of them. This in conjunction with the conclusions from information economics theory, which suggest that neither brand nor price, two tangible factors, play significant roles in buying decisions for experienced Internet users.

2.2.2 Consumer Trust

Matthew Lee and Efraim Turban explore the factors that contribute to consumer trust—a significant determinant in e-commerce success [10]. Their study determined the influence that the various trust-related factors had on consumer trust: trustworthiness of the Internet merchant, trust worthiness of the Internet as a shopping medium, individual trust propensity, contextual factors such as security and privacy, and other demographic variables. Due to the broad categories laid forth, the authors tested a number of sub-hypotheses within each. The trustworthiness of the Internet merchant, and specifically its perceived integrity, was the most significant result of the study. Unfortunately, the experimenters were unable to gauge the impact that the perceived benevolence of an Internet merchant (another characteristic of the trustworthiness of the Internet merchant) had on consumer trust, which would be relevant to corporate social responsibility. Nonetheless, one would expect that value chain transparency directly affects an e-commerce site’s perceived integrity in a positive manner. Therefore, transparency influences consumer trust, which in turn influences

e-commerce success. Van Duyne et al. describe various design patterns to build trust and credibility including: site branding, email subscriptions, fair information practices, privacy policy, about us section, secure connections, and email notifications [4].

2.2.3 Consumer Loyalty

Another determinant of e-commerce success is consumer loyalty, which Srinivasan et al. conclude directly impacts word-of-mouth promotion and willingness to pay more [15]. In their study, they collected data from on-line customers to measure the role that eight different factors played in impacting e-loyalty. These factors were: customization, contact interactivity, care, community, convenience, cultivation, choice, and character. Each of these were found to be statistically significant in positively influencing consumer loyalty except for convenience. This is relevant in determining the impact that value chain transparency has on e-commerce success as it directly enforces three of these factors (contact interactivity, cultivation, and character). If these in turn influence consumer loyalty, which was shown to be a determinant of e-commerce success, then transparency should lead to e-commerce success.

2.3 E-Commerce Web Design

There are a multitude of sources on e-commerce web-design elements and the effects of these elements on consumer behavior. I therefore define broad categories that are representative of the literature on important elements in e-commerce web-design. A study conducted by Song and Zahedi strongly guide my category selection [14]. The categories are as follows: trust worthiness, ease of use and navigation, promotion, interpersonal influences, and purchase facilitation. In implementing these elements, I primarily consult the design patterns laid forth by Van Duyne et al. in *The Design of Sites* [4]. I discuss these design patterns and principles at length in the next chapter of the thesis.

2.3.1 Ease of Use and Navigation

The ease of use and navigation of a website helps consumers effectively use the website and gain a feeling of self-efficacy. Customization is an important part of this process, which improves user satisfaction and builds loyalty [9, 11, 15, 14]. The theory of planned behavior, which argues that consumer behavior is directly determined by consumer intentions, supports the importance of this web-design element. Furthermore, easy navigation of a site ensures that information is effectively conveyed to a consumer in the manner in which the consumer intends to receive it. By enabling a consumer to fulfill his or her intentions, the desired behavior will be observed (assuming that he or she arrived to the site with prior intentions). Van Duyne et al. offer navigational framework and page layout design patterns to follow in order to improve the usability and navigation of a site [4].

2.3.2 Promotion

The promotion of a site and its products are pivotal in attracting users and building loyalty. By promotion, I refer to the cultivation of information to consumers, the value proposition of a site, and the character of a site. Srinivasan et. al prove the impacts of cultivation and character in increasing consumer loyalty [15]. Thus promotion is a combination of price-based and non-price-based cues that attract people to a site [14, 1, 12]. Email subscriptions, a powerful homepage, and up-front value proposition are methods that can be used for promotion [4].

2.3.3 Interpersonal Influences

Interpersonal influence approach is a theory that demonstrates how consumer behavior is influenced by the network of information and people that surround the consumer. Web-sites can take advantage of the implications of this theory by providing product ratings, consumer feedback, etc. Moreover, consumer behavior can be influenced by creating an on-line community that is able to interact with each other. Through these interactions, a consumer can learn about services and products and be more inclined

to purchase them. The creation of a community centered around a web-site was also discussed by Srinivasan et al as a method for increasing consumer loyalty [15]. The concept of social proof that Cialdini promotes as one of six “weapons of influence” in *Influence* is also relevant here. This notion simply states that people tend to follow what other people do [3]. Therefore, by explicitly conveying the way that others have interacted with a website (primarily in products purchased), a website can influence other consumers to do the same.

2.3.4 Purchase Facilitation

The underlying theory behind purchase facilitation is media richness theory, which states that providing comprehensive information in a variety of mediums is effective in positively influencing consumer purchasing behavior on the Internet [6, 13]. As products cannot be seen or touched, websites need to be able to provide consumers with an alternative yet similar experience. Therefore, through the use of different mediums, websites can create a user experience with a product or service that circumvents the consumer’s need to come in physical contact with it. This interactivity provides the user with a sense of control over the purchasing experience and contributes towards consumer loyalty [14, 15].

2.3.5 Trust Worthiness

Refer to section 2.2.2.

Chapter 3

E-Commerce Site Design and Implementation

The design and implementation of the e-commerce site, *theargantree.com*, are based on a combination of website and user interface design patterns laid forth by Van Duyne et al. in *The Design of Sites*. These design patterns implement the web-design strategies discussed in the previous chapter. The high-level patterns and principles used are: page layout and content management, creating a powerful Internet, navigational framework, building trust and credibility, and basic e-commerce features. A section is devoted to each of these design patterns.

3.1 Page Layout and Content Management

The first stage in the design process was deciding upon a consistent page layout along with the writing and management of content. This section is therefore divided into the following three subsections: page template, style sheets, and writing content.

3.1.1 Page Template

A consistent page template, shown in Figure 3-1, was used for each of the web pages within the e-commerce site.

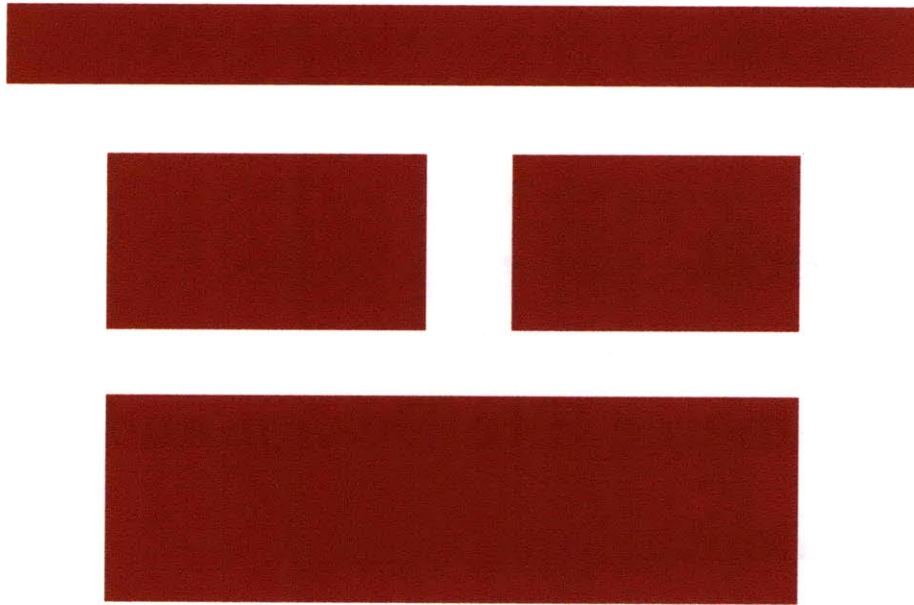


Figure 3-1: Basic page template used for all web pages.

As shown in Figure 3-1, the navigation bar occupies the topmost box and all additional content is captured in the larger red rectangles. These rectangles are shown in red for illustration purposes alone. In reality, a red banner spans each of them but the remaining area is the same color of the page so as to not distract from the content. The heights of the rectangles vary based on the content shown. Also, the top two rectangles are combined if there are only two subsections of content. On the home page, the bottom section is eliminated and the top sections are shifted down. The widths of the sections remain consistent in each web page.

3.1.2 Style Sheets

In order to maintain a consistent design, each web page uses the same basic CSS style components shown in Figure 3-2. The CSS style dictates the navigation bar, the background color, the background image (an argan tree), the font styles and weights, and the height of the banners.



Figure 3-2: Basic CSS stylesheet output for all web pages.

3.1.3 Writing Content

A primary objective for an e-commerce site is to have a high ranking on search engines. To achieve this, each page has a distinctive title with keywords placed near the top of the page within META tags (or markers in a web page that describe what the page contains). The selection of keywords was a difficult process as they should not be repeated, should describe the content of the site, and should be unique to the site. Headers were also used to highlight content sections for web crawlers. Lastly, all text was written in HTML and stylized with CSS to avoid unnecessary image files that could not be crawled through.

3.2 Creating a Powerful Homepage

As the most visited page of any website and the first page a user is confronted by, the homepage serves as a portal and should clearly articulate the value proposition of the website.

3.2.1 Homepage Portal

The homepage, captured in Figure 3-3, serves as a portal that directs consumers to where they wish to go. It is therefore important to establish a strong site identity, brand, and character (factors that lead to consumer loyalty as described in the literature review). The title and brand of the product are clearly articulated at the top of the navigation bar (beside the logo) and again on the center of the page. This is balanced with the actual content. The color scheme and large amount of ‘white-space’ is meant to convey the appropriate “look and feel” to the consumer. After going through many iterations, the design selected was deemed most appropriate. The soft red tones (which are a different shade than that shown in the images) are meant to attract attention but not in an abrupt manner. The background color itself was set to an off-white to create a lesser contrast with the red banners to emphasize this balance.

The font selection was also carefully selected. The cursive font for the title is meant to convey class and a high-end product while the Arial font for the remainder of the page attempts to make the products and services appear fairly-priced and affordable to all customers. The font colors of white and black set the font apart from the banners and backgrounds but do not distract the consumer either. The font size is relatively large in order to make the website more inviting and easier to read.

As a portal, the homepage needs to make navigation easy. The navigation bar at the top of the page makes each page accessible to the user. Redundant pathways for getting to the same places are shown in the two content boxes on the homepage. The amount of images is also minimized in order for the homepage to load as quickly as possible.

3.2.2 Up-Front Value Proposition

The simple design of the homepage as observed in Figure 3-3 is used to clearly convey the value proposition to the consumer. Furthermore, after being captured by the identity and brand of the cooperative, user attention is then focused to the two headings and pictures of the content boxes. These are the two, primary value propositions of the website: “Meet the women involved” and “Shop and see your impact”. For those who spend more time on the homepage, a clearer articulation of the value proposition is captured at the top of the page under the title: “The Argan Tree is a business cooperative made up of 18 women in southwestern Morocco who produce argan oil. This site connects these women directly to people like you who purchase argan oil for culinary and cosmetics.”

3.3 Navigational Framework

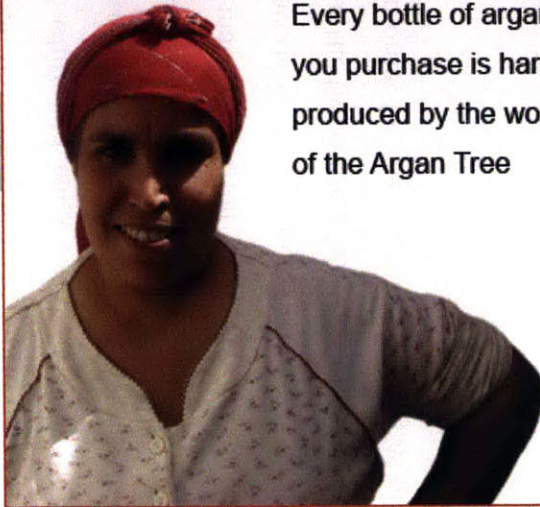
The ease of use of a website are important in ensuring consumers can find what they are looking for and in making all the web pages easily accessible. To facilitate website navigation, design patterns covering ease of navigation, task-based organization, and site accessibility were employed.



The Argan Tree

The Argan Tree is a business cooperative made up of 18 women in southwestern Morocco who produce argan oil. This site connects these women directly to people like you who purchase argan oils for cooking and cosmetics

Meet the women involved



Every bottle of argan oil you purchase is hand produced by the women of the Argan Tree

See where your money goes



By selling directly to you through this site, the women retain a majority of the profits and ensure you high quality oils at fair prices

Figure 3-3: Homepage of *theargantree.com*



Figure 3-4: Navigation Bar at the top of each web page

3.3.1 Ease of Navigation

The navigation bar at the top of each web page, pictured in Figure 3-4, remains consistent in each web page. The user can therefore access any web page at any time, owing to the flat/horizontal design of the site. Furthermore, there are no buried links or a complicated hierarchical structure that the user has to have trouble navigating through. Each link in the navigation bar turns a lighter shade when the mouse hovers over it, to signify to the user that it is an active link.

The website also affords multiple ways of navigation to the user. The user can at any time click on a link in the navigation bar, including the title or logo to return to the homepage. The user can also follow the 'breadcrumbs', or links which appear underneath the navigation bar to show users where in the website they currently are. This is also conveyed in the navigation bar, where the current page is underlined. As mentioned earlier, the homepage (Figure 3-3) also enables users another method for accessing the "Meet the Women" and "Shop" pages from clicking inside the content boxes.

3.3.2 Task-Based Organization

The majority of links shown on the web pages are task-oriented ones. For example, in the navigation bar, a user can "Meet the women" or can have his or her question of "What is argan oil?" answered. There are also task-based procedures in the two sections on the homepage: "Meet the women involved" and "Shop and see your impact". Thus the website is organized based on the most common user tasks.

3.3.3 Site Accessibility

One of the biggest challenges is making a website accessible by various browsers and disabled users. I primarily focused on website accessibility, ensuring that the website could be viewed as intended on Mozilla Firefox, Internet Explorer, Safari, and Google Chrome browsers. Due to the rapid adoption of SmartPhones, *theargantree.com* is also capable of being viewed by SmartPhones (iPhones, Android-based phones, and Blackberry phones).

3.4 Building Trust and Credibility

The trust worthiness of a site is a clear indicator of consumer loyalty and purchasing behavior as described in length in the literature review. A significant aspect about building trust and credibility lies in the value chain transparency that this thesis proposes. This aspect is the entire subject matter for the next chapter. In this section, other contributors to building trust and credibility are assessed.

3.4.1 Site Branding

Site branding is an important element to creating trust and building credibility. Much of the homepage is a testament of this through the value proposition, which is what makes *theargantree.com* unique. The company name and logo are repeated on each page at the top-left most corner in the navigation bar (illustrated in Figure 3-4).

The identity and brand we have therefore aimed to created is:

- equitable

- sincere

- trustworthy

- transparent

- socially responsible

- friendly
- fashionable

3.4.2 The Argan Tree Community

Another important element of building trust and loyalty is the on-line community behind *the Argan Tree* initiative. Therefore, *the Argan Tree* has an e-mail subscription to which people can join and get regular updates about. These updates are currently sent monthly so as to avoid flooding e-mail inboxes. The e-mails sent out are written in an ‘inverse-pyramid writing style’, which entails having a clear subject and headline, a short blurb covering the most important points, and finally descriptions. This has currently been an informal process that will soon be formalized by having a method to subscribe to the e-mail list on the website along with an easy way of being removed from the list.

Taking advantage of the social networking movement, a Facebook page and Twitter account has been created for *the Argan Tree*. Other social networking mediums including MySpace and LinkedIn are currently being integrated with.

3.4.3 Privacy and Security

For purposes of privacy and security, the website does not take any sensitive information from users. The only time a user enters personal information is during the checkout procedure, which is conducted entirely through Google Checkout. The only information gathered is through the underlying shopping cart (which keeps track of purchased quantities) and through Google Analytics (discussed in Chapter 5).

3.4.4 About Us

In order for consumers to know more “about us”, a section dedicated to the creators and designers of *the Argan Tree* can be easily accessed from the navigation bar, as shown in Figure 3-5. Users can view this page to understand who the creators are,

About Us

Why do the world's farmers, workers, and craftspeople – those who produce much of what we buy – see so little of the profits from their products?

Can a sustainable business be built that keeps most of these profits in their hands?



Zahir Dossa (shown to the left) has been exploring these questions as part of his PhD at MIT. He is studying how producer cooperatives like The Argan Tree can use internet strategies to sell their products, improve the lives of their members, and strengthen their communities. Chris Hudgens (shown to the right) joined his best friend Zahir to develop this website and market the Argan Tree's oils to the US.



By selling The Argan Tree's oils directly to you through this website, we hope to provide you with high-quality oils and to provide the craftswomen who produce these oils with the profit share their efforts deserve.

Please contact us with questions or comments at: theargantree@gmail.com |

Figure 3-5: “About” Us page: <http://theargantree.com/aboutus.html>

what they do, and why they do it. There is also information on how to contact the creators on this page. This transparency add legitimacy and credibility to the site, increasing the trust worthiness of the site.

3.4.5 E-Mail Notifications

At every stage of the order process, e-mail notifications are sent to the customer. This includes when the customers place an order, when the payment for the order has been confirmed, when the order is being shipped, and upon delivery confirmation. Customers can therefore remain assured that their order is being fulfilled in a timely manner.

3.5 Basic E-Commerce Features

Although the previous sections were primarily based on general Web design and user interface design patterns, this section focuses on e-commerce design in particular. The design patterns employed are:

1. Quick-Flow Checkout
2. Clean Product Details
3. Shopping Cart
4. Shipping Details and Payment
5. Order Summary and Confirmation
6. Easy Returns

3.5.1 Quick-Flow Checkout


theargantree.com uses a quick and easy checkout process that is integrated with Google Checkout. Customers are able to select their products and purchase them in **three** easy steps. The first step is the “Shop” page, shown in Figure 3-6. On this page, the customer selects the quantity of each product he or she would like to purchase. The sub-total is also shown on this page to avoid a large number of steps. After adding the desired quantities to the shopping cart, the consumer clicks the ‘Google Checkout’ button on the “Shop” page. This re-directs the customer to the first of two checkout pages, shown in Figure 3-7, which is coordinated by Google Checkout. On this page, the customer’s order details and sub-total are reiterated. If the user has a Google account, he or she can quickly enter in their e-mail address and password to go to the “Place Order” page. Otherwise, the user can enter in their current e-mail address along with shipping and payment information.

The third and final step in the checkout process is the “Place Order” page, illustrated in Figure 3-8. On this page, the user is shown any applicable taxes along with

Cuisine

Argan oil holds a central place in Moroccan cuisine thanks to its bold flavor and health benefits. The oil's distinct nutty flavor makes it ideal for dipping breads, preparing meat dishes, and dressing salad. The oil is rich in vitamins, antioxidants, and essential fatty acids.


1 ▾ 8oz. bottles



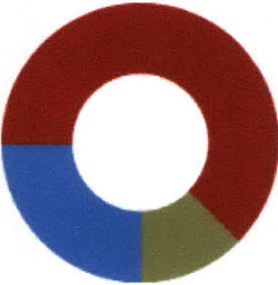
Beauty

Moroccan women have known of argan oil's youth-enhancing properties for centuries. Discover how argan oil can revitalize dried skin and return luster to your hair. The non-greasy and quickly absorbing oil can be applied daily to your skin, hair, or nails.


1 ▾ 4oz. bottles



Your impact



Product	Quantity	Unit Price	Amount
Cuisine	1	\$ 29.99	\$29.99
Beauty	1	\$ 19.99	\$19.99
Shopping cart total			\$49.98
■ The women's share			\$29.99
■ Raw materials, bottling, shipping			\$12.50
■ Administration and site maintenance			\$7.50



Fast checkout through Google

Figure 3-6: “Shop” page: <http://theargantree.com/shop.html>

shipping options (not shown). After the user confirms credit card information and a shipping address, he or she can place their order by clicking the ‘Place your order now’ button (which also shows the purchase total).

After making a purchase, the user is re-directed to *theargantree.com* where they await a ‘Thank You’ screen and are able to join the e-mail subscription list.

Currently, no purchases can be accepted at *theargantree.com*. Customers are able to click a *Submit order* button instead of the ‘Google Checkout’ button in order to be re-directed to a page that asks for their e-mail address so that they can be informed when their order is ready to be fulfilled. This prompt is shown in Figure [reffig:placeorder](#).

Change Language English (US) ▼

Order Details - The Argan Tree, 5901 Stone Mountain Rd., The Colony, TX 75056 US

Qty	Item	Price
1	Culinary Argan Oil - 8oz. bottle	\$29.99
1	Cosmetic Argan Oil - 4oz. bottle	\$19.99

Subtotal: \$49.98

Shipping and Tax calculated on next page

Sign in to complete this purchase with your
Google Account

Email: **zahir.dossa@gmail.com**

Password:

[Can't access your account?](#)

[Sign In as a different user](#)

Figure 3-7: Checkout page 1 of 2: Order Details

Change Language English (US) ▼

Order Details - The Argan Tree, 5901 Stone Mountain Rd., The Colony, TX 75056 US

Qty	Item	Price
1	Culinary Argan Oil - 8oz. bottle	\$29.99
1	Cosmetic Argan Oil - 4oz. bottle	\$19.99
		Tax (MA) : \$0.00
		Total: \$49.98

Send me Google Checkout special offers, market research, and newsletters.

Keep my email address confidential.
Google will forward all email from The Argan Tree to zahir.dossa@gmail.com. [Learn more](#)

I want to receive promotional email from The Argan Tree.

Pay with: MASTERCARD xxx-8396 - [Change](#)

Ship to: Zahir A. Dossa - [Change](#)
12 Gardiner St.
#3A
Allston, MA 02134
United States

Place your order now -- \$49.98

Figure 3-8: Checkout page 2 of 2: Place Order

Place your order

Thank you for your interest. The women of The Argan Tree are currently producing this season's oil, which will be ready to ship by this summer.

Please leave us your email address and we will contact you as soon as we can fulfill your order. You will not be charged at this time.

E-Mail:

Figure 3-9: Current checkout alternative to place order request

Recent news about argan oil

Follow the links below to learn more about argan oil:

- [New discoveries in health](#): Studies show how argan oil decreases cholesterol levels
- [The latest cosmetic miracle](#): Allure editor gives 5 reasons to get obsessed with argan oil
- [Liquid gold in Morocco](#): New York Times article on the producers of argan oil and the benefits of the oil
- [Finding a sustainable balance](#): Argan oil industry is helping conserve the ecology and promoting development

Figure 3-10: “Recent News About Argan Oil”: <http://theargantree.com/about.html>

3.5.2 Clean Product Details

There are two places on *theargantree.com* where consumers can get detailed product information: the “How argan oil is made” section, shown in Figure 3-11, and the “Shop” page (see Figure 3-6). In the “How argan oil is made” section, which is contained on the “What is argan oil?” page, consumers can learn about the entire production process of argan oil, from cultivating, to harvesting, to processing, to bottling. Users can also click on the bottle images to see a much larger image of the bottles they would be purchasing (this does not create a new page nor does it appear as a pop-up).

Additional information about the products is also available. On the “What is argan oil?” page, there is a section entitled “Recent news about argan oil”. This section, replicated in Figure 3-10, provides links to articles and studies of the health and cosmetic benefits of argan oil, along with the benefits of the argan oil sector.

3.5.3 Shopping Cart

The shopping cart is fully integrated with the “Shop” page (Figure 3-6) to simplify the checkout process. Each time a product is added to the cart in the “Shop” page, the shopping cart at the bottom of the page is updated. Users can therefore see the quantity of products in their shopping cart before proceeding to checkout with Google Checkout; at which point, the shopping cart information is sent to Google Checkout.

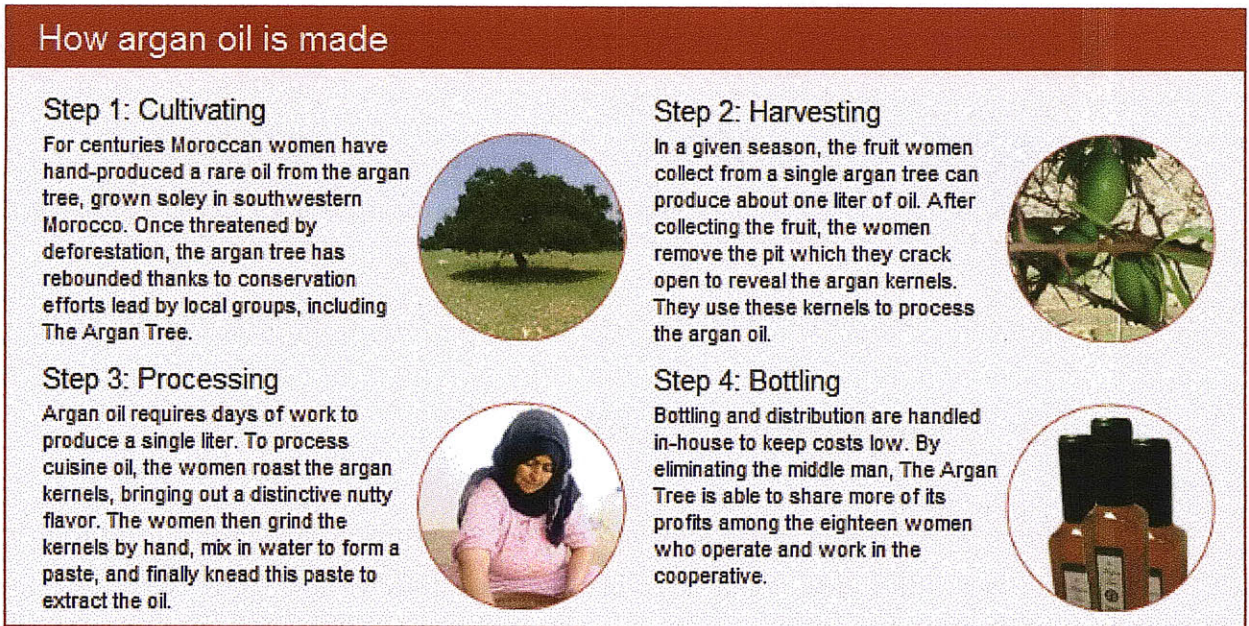


Figure 3-11: “How Argan Oil is Made”: <http://theargantree.com/about.html>

3.5.4 Shipping Details and Payment

The shipping details (including address and shipping options) and payment are processed by Google in Google Checkout. This is a much more secure and credible process than one that an independent website can provide. Users also save time if their information has already been stored with Google or if they plan to use Google checkout again in the future. Google is capable of verifying all inputted fields and has a simple page dedicated to entering in information or loading information from a Google account (see Figure 3-7).

Shipping details are also handled by Google. Based on the quantity purchased and shipping location, Google Checkout uses the packaging information provided by *The Argan Tree* to compute shipping costs through a variety of carriers and methods. Customers therefore have complete flexibility in selecting the shipping option that they prefer. This transparency of shipping costs further increases the trustworthiness and credibility of *theargantree.com*.

3.5.5 Order Summary and Confirmation

The order summary is provided at the bottom of the “Shop” page (Figure 3-6) and on the first page of Google Checkout (Figure 3-7). Upon placing an order, customers are returned to *theargantree.com* with an order confirmation message and also receive an e-mail notification that an order has been placed. As mentioned in the previous section, the customer receives e-mail notifications throughout the order process.

3.5.6 Easy Returns

Customers can easily return any purchased oils within 30 days and receive a full refund of their purchase. This policy is stated in the Google Checkout process and in the e-mail notifications the customer receives upon an order being placed.

Chapter 4

Integration of Value Chain Transparency

The value chain transparency promoted by *The Argan Tree* was conveyed in three ways: value proposition, producer information, and profit distribution.

4.1 Value Proposition

The notion of value chain transparency is effectively communicated through various statements of value on the website. These include the homepage, the “Our philosophy” section, and the “About us” page.

4.1.1 Homepage

A two-line description at the top of the homepage reads: “The Argan Tree is a business cooperative made up of 18 women in southwestern Morocco who produce argan oil. This site connects these women directly to people like you who purchase argan oils for culinary and cosmetics.” Through these statements, consumers are able to understand an overview of the business model of the *The Argan Tree*, which connects producers directly to consumers.

The two subsections on the homepage are meant to clearly communicate the primary

Our philosophy

The Argan Tree returns the profits from its sales back to the women who produced its oil. Not only is this a fair practice, it also helps provide these women with economic power they may not otherwise have. By owning an actual stake in the company, women of The Argan Tree are not only masters of their craft, but also independent entrepreneurs and business owners.

*Hassnae couldn't make it to last month's photoshoot. We'll be sure to post her photo as soon as possible!

Figure 4-1: “Our Philosophy”: <http://theargantree.com/meet.html>

values of The Argan Tree: “Meet the women involved” and “Shop and see your impact”. Thus, a consumer is able to put faces to the products he or she consumes and is also able to see where the revenues from his or her purchase go. These two elements are novel in the consumer retail sector and thus make *theargantree.com* a unique website.

4.1.2 “Our Philosophy”

At the bottom of the “Meet the women” page is a section titled “Our philosophy”, which is shown in Figure 4-1. This section explains the pivotal role of the female producers in the value chain. Not only do they receive all the profits from the website, they own an actual stake in the enterprise as members of the cooperative. Despite being intrinsic in the cooperative model, the practices of profit sharing and democratic decision-making are rarely characteristic of cooperatives in practice. Thus, *The Argan Tree* emphasizes these notions in the value proposition and the underlying philosophy of the website. It also exemplifies these notions as is evidenced by the transparency of the value chain. The expression of *the Argan Tree*'s philosophy should build customer loyalty and increase the trust worthiness of the website.

4.1.3 “About Us”

The “About us” web page effectively communicates the coordinators behind the value chain of *The Argan Tree*. After all, this coordination is critical in connecting producers to consumers in an effective manner. The “About us” page (see Figure 3-5) therefore discusses the motivation for the creation of *theargantree.com* along with a

short background of the website designers. It also states the goal of the website—to serve as a sustainable business that distributes profits to producers in a fair manner.

4.2 Producer Information

One of the two fundamental elements of revealing the value chain is providing information about the producers of the products and services being purchased. Thus, a web page has been dedicated to the 18 female producers of the argan oil cooperative based in Morocco.

4.2.1 “Meet the Women”

The “Meet the women” page has a “Meet the women” section, shown in Figure 4-2, and an “Our philosophy” section, which was discussed in the previous section and shown in Figure 4-1. This page can be accessed from the homepage (see Figure 3-3) by clicking on the “Meet the women involved” section, or from the navigation bar at the top of each web page (see Figure 3-4). The “Meet the women” section displays thumbnails of all the members of the cooperative except one (from whom we have not obtained a picture yet).

4.2.2 Member Biographies

Each thumbnail in the “Meet the women” section can be clicked on to update the member biography shown (see Figure 4-2). Each member biography consists of: the name of the member, a picture, the number of kids she has, and a reason for joining the cooperative. Fatima Agzzar is the name of the default woman selected on the page. As shown in Figure 4-2, she has seven children and joined the cooperative because she “would like to have the perfect kitchen and would also like to send [her] children back to school.” Each member has a distinct biography resembling the same structure as the one featured. Users can therefore click on the thumbnails of the various members and quickly learn about the producers of *the Argan Tree*. This interaction not only



Figure 4-2: “Meet the Women”: <http://theargantree.com/meet.html>

builds trust and credibility but also a sense of community through the building of connections between consumers and producers.

4.3 Profit Distribution

Aside from knowing the producers behind a particular good, it is also important to know how much of the profits actually goes to them. Thus, profit distribution is an important aspect of value chain transparency and has been integrated into *theargantree.com*. The profit distribution is published on the “Shop” page, which can be accessed from the navigation bar (see Figure 3-4) or by clicking on the content section entitled “Shop and see your impact” on the homepage (see Figure 3-3). In the case of *the Argan Tree*, the women receive 100% of the profits (or 60% of the total revenues).

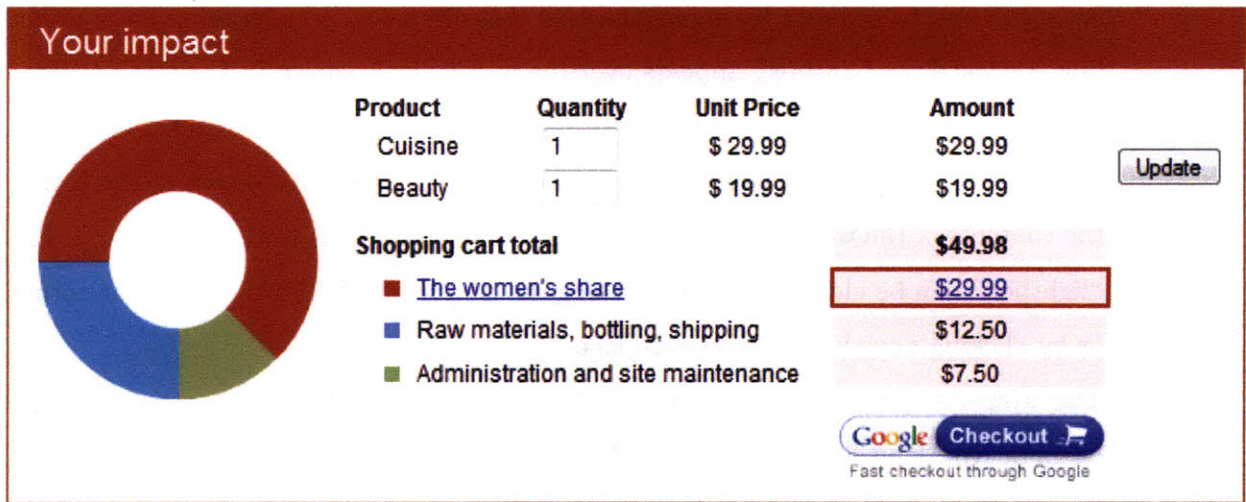


Figure 4-3: “Your Impact” (based on purchase): <http://theargantree.com/shop.html>

4.3.1 Impact of Purchases

On the “Shop” page is a “Your impact” section, shown in Figure 4-3, which displays the total amount for the items in the shopping cart and how this amount is distributed. For example, in Figure 4-3, the shopping cart total is \$49.98. The next three line items (the women’s share; raw materials, bottling, shipping; and administration and site maintenance) delineate exactly how the total amount of \$49.98 will be dispersed. In this case, \$29.99 goes towards the women, \$12.50 goes towards raw materials, bottling, and shipping, and \$7.50 goes towards administration and site maintenance. The doughnut chart to the left shows a graphical representation of this division. This is meant to emphasize the distribution of revenues and the large amount (60%) that goes directly to the women.

4.3.2 “The Women’s Share”

For consumers wishing for an even greater level of transparency, the revenue distribution can be broken down further to show how much each particular female producer makes. To view the distribution of profits, the user can either click on “the women’s share” or the cell that represents this amount, in this case “\$29.99”. This functional-

ity is signaled to the user by making each of these items blue hyperlinks. Once either link is clicked, a “lightbox” appears over the web page as shown in Figure 4-4. This “lightbox” is not considered a new web page nor is it a pop-up. instead, it is integrated within the HTML code to be as seamless as possible. As shown in the figure, the contents of the web page are darkened so as to bring focus to the “lightbox”. The “lightbox” can be closed by either clicking on the “x” symbol in the top-right corner or by clicking anywhere on the web page.

The women’s share box that appears shows a thumbnail for all the women in the cooperative along with the amount from your order that the women will receive. The top-left cell denotes the total amount that goes towards the women, which in this case is \$29.99 (this correlates to “the women’s share” line item amount on the original “Shop” page). In this example, the \$29.99 that belongs to the women will be equally divided amongst them. Therefore, each woman will receive \$1.67. However, once production actually starts, each woman will produce a different amount of argan oil and therefore not all women will earn the same amount (as profits are based on production). This will therefore be clearly communicated to the customer through “the women’s share” section.

Moroccan cuisine thanks to its bold | argan oil's youth-enhancing

The women's share: The women of The Argan Tree receive 60% of the proceeds from every sale. They have met together and have agreed on the following distribution of their profits, based on each woman's production in the cooperative.

From your order, the women will receive:

\$29.99



















	Fatima Agzzar receives \$1.67		Yamna Redouane receives \$1.67		Aicha Guergna receives \$1.67
	Zineb Elmansouri receives \$1.67		Zineb Outssila receives \$1.67		Fatima Zoumhane receives \$1.67
	Mamassa Outssila receives \$1.67		Imane Elmadi receives \$1.67		
	Khadija Elmansouri receives \$1.67		Fatima Hakka receives \$1.67		Fatima Bouskioune receives \$1.67
	Mamassa Battah receives \$1.67		Khadija Elmadi receives \$1.67		
	Khadija Idmoulay receives \$1.67		Zineb Battah receives \$1.67		Aicha Elmansouri receives \$1.67
	Rkia Outssila receives \$1.67		Hassnae Zoumhane receives \$1.67		

Figure 4-4: “Women’s Share” (based on purchase): <http://theargantree.com/shop.html>

Chapter 5

Analysis

An analysis of *theargantree.com* was conducted through a combination of web analytics (provided by Google Analytics), surveys, and user testing during a one-month pilot test. During this phase, 349 unique visitors of *theargantree.com* placed 21 orders. Based on preliminary findings from the analysis conducted, it appears that integrating value chain transparency is a successful measure for e-commerce site design. The analysis was divided into: site usage, content analysis, efficacy of value chain transparency strategy, and user feedback. A section devoted to the limitations of this analysis precedes the aforementioned sections.

5.1 Limitations

The analysis that follows is a preliminary one based on one month of usage data of *theargantree.com*. No particular marketing actions were conducted nor were any products available for sale in this pilot test. As a result, the majority of users come from a network of friends and family. Much more data will be collected in future months as products become available for sale and the website is officially launched. Nonetheless, the results found do suggest promising findings. Aside from analyzing web analytics data, 14 user tests were conducted to get user feedback and monitor Web site usage firsthand. Surveys were also collected from individuals who pre-ordered products.



Figure 5-1: Site Usage Overview (Courtesy of Google Analytics)

5.2 Site Usage

The following sections describe site usage and visitor data that was collected through Google Analytics.

5.2.1 Overview

Google Analytics was used to gather visitor information and site usage data. Figure 5-1 provides a site usage overview of *theargantree.com* during the one-month pilot testing. The data suggests that 349 of the 446 (77.34%) visits were unique visitors and that the average visitor spent 2 minutes and 45 seconds on the site and viewed 4 pages. The bounce rate of 26.53% means that one out of every four visitors exited the Web site after only viewing the page they entered on.

5.2.2 Order Placements

As mentioned in Chapter 3, customers are currently prompted with a “Submit Order” button instead of a “Google Checkout” button. This takes them to the “Place your order” page (shown in Figure 3-9), which prompts the customer to enter an e-mail

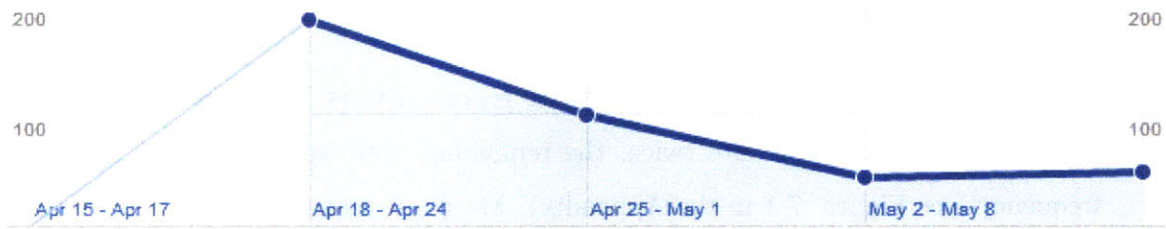


Figure 5-2: Total Site Visits per Week (Courtesy of Google Analytics)

address so that they may be informed when their order is ready to be placed. Based on Google Analytics, a total of 24 users submitted an order, 21 of which made valid requests, and 7 people proceeded to enter an e-mail address, 6 of which were verified. Therefore, 6% of visitors to the site placed an order and 2% entered e-mail addresses. As was expected, there was a high attrition rate once users were informed that their order could not be placed and were prompted to enter an e-mail address. These low percentages are reflective of the audience of the site during the pilot test: close friends and family members who were more interested in the site than the products offered.

5.2.3 Visitor Trending

Looking at the visitor trend data of visits by unique visitors, illustrated in Figure 5-2, it is evident that the visits spiked during the first week of the pilot test, before steadily dropping until slowly increasing again. The average pageviews and bounce rates have remained relatively stable with the exception of an average pageview drop during the second week and a correlated increase in bounce rate. The average time on site also shows a dip during this time period. This may be due to a very excited initial audience, who had been anticipating the launch of the Web site, followed by less interested visitors who happened to hear about or come across the site. The increase in site usage after the decline, however, show that site awareness and popularity are slowly increasing.

5.2.4 Visitor Loyalty

Of the total visitors to the site, 22.66% are repeat visitors. While a third of these visitors only came to the site twice, the remaining were equally divided in return frequency (see Figure 7-1 in the Appendix). More interesting is the pattern in visit lengths, shown in Figure 5-3. There are two apparent humps or clusters in the data: one from 0-10 seconds, and another from 61-180 seconds. This reveals that the population can be divided into two critical populations—those that come to the site and instantly leave (perhaps reaching the site on accident or clicking a random link) and those that come to the site with the intent of browsing it. Note that the size of the first group directly correlates to the bounce rate of 26.53%. The short site visits may also be attributed to robots and web crawlers that index the site as opposed to actual users. The depth of visit (after eliminating the 26% who leave before exploring the site) shows similar percentages of people who view 2 or 3 pages before quickly declining (see Figure 7-2 in the Appendix). One interesting finding however is that the steps are in groups of two. Furthermore, roughly the same percentage of visitors see 2 or 3 pages; the same percentage see 4 or 5 pages; and the same percentage see 6 or 7 pages. There is a significant drop in percentages between these groups but there is a clear grouping nonetheless. Closer user tracking may reveal the underlying reason for this observation.

5.2.5 Traffic

The traffic sources of *theargantree.com* graphed in Figure 5-4 reveal that the majority of users, or 71%, visit the site directly. Of the 24% that are referred by other sites, a majority come from three sites: *facebook.com*, *wikipedia.org*, and *linkedin.com*. This is shown in Figure 5-5. The users visiting from these sources most likely did so based on the links to *theargantree.com* from profiles and status updates. The Argan Tree was also added to the related links section of Wikipedia entries on argan oil and the argan tree. Due to the recent introduction of the site, only 5% of users found the site through a search engine. Based on the data shown in Figure 5-6, it appears that

Duration of visit	Visits with this duration	Percentage of all visits
0-10 seconds	132.00	29.60%
11-30 seconds	71.00	15.92%
31-60 seconds	50.00	11.21%
61-180 seconds	97.00	21.75%
181-600 seconds	67.00	15.02%
601-1,800 seconds	22.00	4.93%
1,801+ seconds	7.00	1.57%

Figure 5-3: Duration of Visits (Courtesy of Google Analytics)



Figure 5-4: Where visitors come from (Courtesy of Google Analytics)

frequent and loyal users get directed to the site from Google (no other search engines have directed traffic yet). This is observed by the low percentage of unique visitors (8.70%), yet high number of pages per visit and average time spent. Interesting enough is that the bounce rate is 50% higher than the website's average despite the high number of returning visitors. This can allow one to deduce that 30% of returning visitors searched for the site through Google but exited upon finding it. One cause of this may simply be assessing the indexing progress of the site. Nonetheless, the low percentage of users directed by search engines can be expected at the onset, where no explicit marketing strategies have been undertaken. As shown by the graph in the same figure, however, the references from search engines is rapidly increasing.

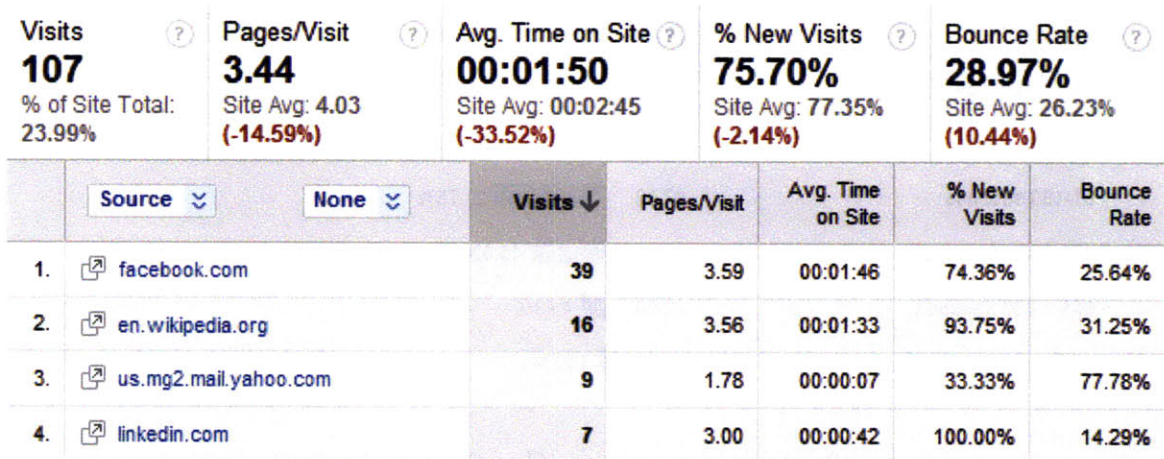


Figure 5-5: Top 4 referring sites (Courtesy of Google Analytics)



Figure 5-6: Search engine references (Courtesy of Google Analytics)

5.2.6 Accessibility

There are no significant differences of usage patterns between different browsers, operating systems, resolutions etc. (as evidenced by the data shown in Figure 7-3 of the Appendix) leading one to conclude that the site appears relatively accessible across platforms and operating systems. This was of course thoroughly tested for during the design stage and therefore expected. The one exception lies with mobile devices, which have lower site involvement and higher bounce rates. Nonetheless, this is only 4% of the visitors so far and one can expect lower levels of involvement from people “on the go”.

5.3 Content Analysis

After analyzing the visitor site usage, an analysis of the specific content contained on web pages was performed. This consisted of a content drilldown by page and a site overlay with click analysis.

5.3.1 Content Drilldown by Page

Google Analytics provides a content drilldown on the usage patterns of each Web page, shown in Figure 5-7. The homepage, as can be expected, has the most number of pageviews. Note that the home page is represented as / and */index.html* in the table. Therefore, the statistics for these two entries should be added together. Figure 5-8, which consists of Web site entry point or page landing statistics, reveals that 91% of users enter the website through the homepage. This figure also explains that while the homepage is marked with the lowest bounce rate of the pages, it contributes most towards the actual bounce count, accounting for 85% of the bounces. This can be expected from the homepage of a website, which is the first web page a user encounters before deciding whether or not to continue browsing the site. Nonetheless, it may be advantageous to tweak the content of the homepage to lower the bounce rate percentage. The bounce rates for the other pages should be discounted due to

Pageviews [?]		Unique Pageviews [?]		Avg. Time on Page [?]		Bounce Rate [?]		% Exit [?]		\$ Index [?]	
1,796		1,324		00:00:55		26.23%		24.83%		\$0.00	
% of Site Total: 100.00%		% of Site Total: 100.00%		Site Avg: 00:00:55 (0.00%)		Site Avg: 26.23% (0.00%)		Site Avg: 24.83% (0.00%)		Site Avg: \$0.00 (0.00%)	

	Page	None <input type="button" value="v"/>	Pageviews ↓	Unique Pageviews	Avg. Time on Page	Bounce Rate	% Exit	\$ Index
1.	/		380	345	00:00:42	23.62%	24.47%	\$0.00
2.	/about.html		318	233	00:01:11	40.00%	25.16%	\$0.00
3.	/shop.html		270	195	00:01:04	0.00%	27.04%	\$0.00
4.	/meet.html		253	189	00:00:48	33.33%	17.00%	\$0.00
5.	/aboutus.html		235	189	00:01:36	78.57%	40.00%	\$0.00
6.	/index.html		160	115	00:00:42	28.57%	30.00%	\$0.00

Figure 5-7: Content Drilldown (Courtesy of Google Analytics)

the low number of actual bounces they contribute.

The demographics in Figure 5-7 shows an average pageview of 55 seconds. Surprisingly, the “Meet the Women” page has one of the lowest average times spent on page while the “About Us” section has the highest. In the design process, the opposite was expected, hence why the link to the “About Us” page is positioned on the far right of the navigation bar while the “Meet the Women” page is the first one linked to in the list and is also referenced on the homepage. The way content is displayed along with the interactivity level presented to the user may be important (as the “Meet the Women” page is designed to be much more interactive than the “About Us” page). This is further assessed in the next section. It is interesting to note however that the page exit percentages are the opposite. The “Meet the Women” page has the lowest exit percentage at 17% while the “About Us” page has the highest with over twice this amount, 40%. This too is assessed in the next section.

Entrances		Bounces		Bounce Rate	
446		117		26.23%	
% of Site Total: 100.00%		% of Site Total: 100.00%		Site Avg: 26.23% (0.00%)	
Page	None	Entrances ↓	Bounces	Bounce Rate	
1. /		343	81	23.62%	
2. /index.html		63	18	28.57%	
3. /aboutus.html		14	11	78.57%	
4. /about.html		10	4	40.00%	
5. /meet.html		6	2	33.33%	

Figure 5-8: Web Site Entry Points (Courtesy of Google Analytics)

5.3.2 Site Overlay with Click Analysis

Through the site overlay functionality that Google Analytics provides, the usage of each web page and the customer flow can be tracked. The users of *theargantree.com* actually followed the anticipated flow for the most part. From the homepage, 35% of users went to the “Meet the Women” page, which is the first link and also the first section highlighted on the page. The next most frequented page from the homepage however was the “About Us” page, which attracted 30% of the users. This section is generally not given much attention at all and therefore it is surprising to see the high flow it attracted from the homepage. This may have been either because the homepage did not clearly communicate all the details of “who we are” or because users wanted further information. Nonetheless, it is evident that trustworthiness is important to users, confirming the findings in the Literature Review section and those from the survey presented further below.

From the “Meet the Women” page, 56% of users visited the “What is argan oil?” page, which appeared next on the list of links in the navigation bar. This trend of continuing to the next navigation bar item continued for the remaining pages. Thus, users either follow the order of links in the order they are presented or the ordering of links correctly maps to the desired flow of information users desire. If it is the

former, then the design was successful in having users “meet the women” and learn more about the product before getting to the “Shop” page (although the “Shop” page is still easily accessible at all times). If the latter case is true, then consumers are interested in the other aspects of a site rather than simply the price of a product, further supporting the literature.

5.4 Efficacy of Value Chain Transparency Strategy

Perhaps the most important aspect of this thesis is understanding the efficacy of making the value chain transparent in consumer buying behavior. To ascertain this, a reverse path analysis was conducted via Google Analytics and a survey was conducted for customers who placed an order request for argan oil and left their e-mail address.

5.4.1 Reverse Path

Of the 21 people who placed an order, reverse path tracking shows that only 8 people visited the “Meet the women” page. Although at first glance it may appear that this strategy was not effective, a closer inspection reveals that those that visited the “Meet the women” page purchased, on average, 2.6 bottles of argan oil—over twice the average quantity purchased by those who did not visit the page, who averaged 1.2 bottles. This increase in purchase implies that consumer loyalty and trust were increased through learning about the producers.

5.4.2 Survey Data

To further understand the efficacy of value chain transparency strategies, a survey was sent to the 6 people who made a purchase and entered their e-mail addresses on the site. The survey consisted of six questions and asked respondents to enter how important the following factors were in their purchase: price, producer information (member biographies shown on “Meet the women” page), profit distribution (on “Shop” page and the women’s share link), value proposition of web site (‘meet

the women and see where your money goes'), trustworthiness of site, and ease of use and navigation. The response options were: very important, important, neutral, unimportant, and very unimportant. A 100% response rate was observed. The user responses were coded numerically from 1 to 5, where 1 represented 'very important' and 5 represented 'very unimportant'. The numerical averages based on this coding for each of the categories are listed below in order of importance (from most important to least important)

1. Trustworthiness of site = 1
2. Producer information = 1.17
3. Profit distribution = 1.17
4. Value proposition = 1.33
5. Ease of use and navigation = 2
6. Price = 2.67

While the sample is a limited one with and has a selection bias, the results are very compelling. These preliminary findings confirm the literature that trustworthiness of a site is an important factor, and in the case of the items listed the most important one. The efficacy of integrating value chain transparency is also clearly evident, as producer information, profit distribution, and value proposition were all very important to the customers and more important than the ease of use and navigation and price. The value chain transparency also directly contributes to the trustworthiness of the site as discussed in the literature review. As an additional confirmation of the theories presented in the literature review section, price was the least important factor, prioritized over by intangible factors. Therefore, based on the survey data collected, integrating value chain transparency in e-commerce site design can be a very effective measure that needs to be more fully assessed.

5.5 User Testing

User tests of the Web site were also conducted prior to the website launch and directly after the website launch in order to collect feedback. User feedback from these sessions has been organized into the themes they commented on.

5.5.1 “About Us”

During the early testing phases, many users requested to have an “About Us” section so that a customer could learn more about the designers of the site and their motivations along with contact information. This page was therefore designed and implemented and is in the current version of the on-line Web site (see Figure [reffig:aboutus](#)). As this page had the highest average view count after the homepage and the longest average time spent on average, the user feedback on this topic greatly contributed to improving the site.

5.5.2 “What is Argan Oil?”

The benefits and uses of argan oil were not clearly conveyed to the users. This information was meant to be conveyed through the “What is argan oil?” page, which consists of two sections, “How argan oil is made” (see Figure 3-11) and “Recent news about argan oil” (see Figure 3-10).

One test subject recommended: “You may want to feature how argan oil can be used more prominently on your website. I assume it’s for cooking but your page focuses on the production process. Seeing recipes or examples would have helped with [customer] conversion.” Another person stated, “for those of us who don’t know about argan oil, it would be good to have something brief on the front page about what it does and how it is used.” Two other test subjects mentioned that it would be useful to have a section that clearly states the benefits of argan oil. Lastly, one user mentioned that a link to this information should be available on the “Shop” page itself.

Much of the information requested by users is contained in the four links in the “Recent news about argan oil” section. Others are not available at all. Therefore,

About argan oil

For centuries Moroccan women have hand produced this rare oil from the kernel of the argan tree, grown exclusively in southwestern Morocco. They have long known of the oil's powerful health properties and western experts have recently caught on. Discover the bold flavor and health benefits of culinary argan oil, as well as cosmetic oil's anti-aging capabilities.

A culinary tradition

Argan oil's bold, nutty flavor and its numerous nutritional benefits gives it a central place in Moroccan cuisine. This oil is ideal for preparing healthy meals that are rich in flavor.



Health benefits

Argan oil is loaded with Vitamin E, anti-oxidants and essential fatty acids. Studies have shown argan oil reduces the chances of heart disease by lowering cholesterol, improving circulation and reducing blood pressure.

Moroccan recipes

Argan oil's rich nutty flavor makes it ideal for dressing salads or adding a final touch to cooked meats. Since argan oil is pre-roasted, it is not meant to be used while cooking. Instead, enjoy it drizzled over your favorite foods. A few other suggestions:

- For a traditional Berber breakfast, dip fresh bread in a mixture of argan oil and honey
- Prepare amlou spread, a Moroccan dip made by blending roasted almonds, argan oil, and honey
- Mix argan oil with hummus to spread on pita bread

A cosmetic miracle

Cosmetic experts are raving over the anti-aging properties of cosmetic argan oil. Rich in vitamins, cosmetic argan oil will absorb fast, bringing a youthful glow back to dry skin and add luster to hair.

Natural beauty

Packed with Vitamin E and rich fatty acids, cosmetic argan oil will return smoothness and radiance to dry skin, hair and nails. Argan's regenerative effects have also been known to reduce the appearance of wrinkles, acne, and scarring.

Easy application

Bottled without additives, this 100% pure argan oil is ready to be applied directly to your skin. Simply rub a small dab of the fast-absorbing oil into your skin, hair or nails and rediscover your body's natural glow.



Figure 5-9: "About Argan Oil" (currently not on Web site)

one imminent change is to replace the "How argan oil is made" section (see Figure 3-11) and with an "About argan oil" section, as shown in Figure 5-9. This section explicitly states the the culinary and cosmetic benefits and applications of argan oil. Perhaps embedding links in some word phrases of this section can further assist the user in finding more information. A link to the "How argan oil is made" section can be placed on the page for users who are further interested.

5.5.3 Profit Distribution

A few users overlooked "the women's share" link on the "Shop" page. One user thought that the idea was a powerful one that should be brought forward on the

page. A more prominent integration should therefore be developed to ensure that customers are aware of it. Also, one person mentioned that the notion that women earn 60% of the revenues did not strike them as a high percentage for producers to receive. Therefore, she suggested that we make a comparison to how much women in similar lines of work currently earn (which is a mere portion of this amount).

5.5.4 Cosmetic Applications

Many female test users were surprised to learn of the various cosmetic benefits of argan oil through the links posted in the “Recent news about argan oil” section. They therefore suggested that the cosmetic applications should be emphasized, significantly more so than the culinary ones, as they predicted this to be a much larger market.

5.5.5 Overall Impressions

Despite the critiques mentioned above, each participant in the user tests was extremely satisfied with the website. The following feedback was collected:

- “This looks AWESOME! I will certainly order some for mother’s day!”
- “Looks fantastic. Very nice job pulling it all together, especially the cost breakdown JavaScript on the Shop page.”
- “I really love how you’ve done this. The formula on the purchase page with the ‘women’s share’ is brilliant. I think that the concept of women’s share is really powerful...”
- “I love it! Aesthetically appealing, concise, profound, and it captures the essence of humanity. I cannot say it more eloquently than Dr. Martin Luther King: ‘All labor that uplifts humanity has dignity and importance and should be undertaken with painstaking excellence.’ And this you have conveyed through this project. More power to you!”

Chapter 6

Further Improvements, Findings, Future Work, and Contributions

6.1 Further Improvements

6.1.1 Improve Community Features

theargantree.com is still in the pilot test phase and will be improved in many aspects. Although user feedback provided some ideas for change, there are others that are currently being worked upon. An important area of consideration is the community aspect. Currently, most of the producer-consumer interaction is one-sided: consumers can learn about the producers but there is no capability for the opposite channel to exist. Therefore, the ability for producers to be in electronic contact with interested consumers is an important one that can be integrated into the site. Also, there are limited interpersonal influences on each consumer, or consumer-consumer interactions. While integrating with social networking medium is a start, a more directly integrated forum for consumers to leave feedback may be an important feature. Consumers are also unaware of the purchases of other consumers and their combined impact on female producers. Therefore, functionality needs to be added so that consumers can see exactly how much producers have earned to date.

6.1.2 Improve Producer-Side Functionality

While the majority of the website has been focused on consumers, functionality can be added for producers as well. Producers should be able to access the amount of money they are allotted to receive and affirm when they have received the amount. Producers should also be able to enter the amount of oil they have produced. These measures will increase the accountability of the cooperative so that women are earning their fair share of profits. They will also make the supply chain more transparent and efficient. Moreover, the amount of oil produced can be easily tracked and supply can be projected.

6.2 Findings

The preliminary findings for the efficacy of integrating value chain transparency in an e-commerce site are promising and need to be looked into further.

6.2.1 Integrating Value Chain Transparency into E-Commerce Site Design

The early findings through surveys, user tests, and usage analytics, show that consumer behavior *is* positively affected by value chain transparency. By clearly describing the value chain behind an organization, consumer loyalty and consumer trust can increase and influence purchasing behavior. This phenomenon is rarely taken advantage of and can easily be integrated into e-commerce site design. By showing users who makes their products and where money from their purchases goes, companies can increase revenues and produce positive social outcomes. The Internet is a powerful tool that allows for an unparalleled level of interaction between producers and consumers, and should therefore be taken advantage of.

6.2.2 Application to Socially Responsible Organizations

Many websites may project organizations as being socially responsible, although very few are to the degree claimed. In the case of the argan oil sector, many e-commerce sites champion the environment and women producers that the revenues of the site will promote. However, the research conducted on the argan oil sector shows the contrary: that the environment and women are often exploited. Similar outcomes have been shown in other markets and trades as discussed in the literature review. As a result, many consumers are unaffected by such marketing ploys as there is no concrete, visible benefit that these initiatives are making. That is, consumer trust is not enhanced, although consumer loyalty may be increased for a small segment of consumers. Value chain transparency can enable socially responsible organizations to be identified as such and increase consumer trust in conjunction with consumer loyalty.

6.2.3 Application to Cooperatives and Development

Cooperatives employ over 800 million people worldwide. As both a strategy and an organizational form, they enable often under-privileged individuals to collectively compete in a market through joint-ownership agreements and democratic decision-making. As a testament to their form, cooperatives are increasingly heralded by powerful macro-planning entities such as the European Union, USAID, and the UN. Consistent with an endorsement by the International Labor Organization in 2002, many countries including those in Africa, Central and South America, are encouraging the growth of cooperatives as a broad poverty alleviation strategy. While cooperatives are promoted as poverty-alleviating institutions, we also know that many often fail due to a variety of factors including a lack of accountability, low wages, and difficulty competing in high-end markets.

The use of the Internet towards marketing directly to socially conscious consumers now adds a new dimension to cooperatives, potentially strengthening their strategies and organizational forms towards real poverty alleviation. For one, e-commerce

reduces the need to sell through middle-men who often hoard a large share of the profits. The Internet also allows cooperatives to show information about cooperative members and profit distribution to consumers. As shown in this thesis, this may positively affect consumer buying behavior. Thus, through the integration of value chain transparency into e-commerce sites, cooperatives can increase their level of profits. This technical assistance can be provided to cooperatives by aid organizations, non-profits, and government agencies as an alternative to aid. This practice would be more sustainable than the current one and could enable cooperatives to behave as organizations that can actually bring people out of poverty.

6.3 Future Work

The impacts of integrating value chain transparency into e-commerce design, especially as it pertains to cooperatives, can effect consumer behavior, as described in this thesis, but can also impact cooperative behavior, a topic not discussed yet. As a doctoral student in the Department of Urban Studies and Planning at MIT, I am currently studying these two impacts closely and will continue to do so for my dissertation.

6.3.1 Impacts on Consumer Behavior

As described in this thesis, publishing producer information along with profit distribution can positively influence consumer behavior. This however was a pilot study that needs to be conducted in a much more rigorous fashion. Once *the Argan Tree* has amassed a steady supply of argan oil and begins marketing it, there will be a lot more data in terms of usage and visitor patterns. More importantly still, a consumer behavior study will be conducted, varying the content of the website that different users see in order to gauge the importance of various value chain factors. For instance, is the publishing of member biographies or profit distribution more important? How much do these impact the quantity purchased or the willingness to pay more for a product? These are just a few of the many questions that a more thorough study will

be able to answer.

6.3.2 Impacts on Cooperative Behavior

While the consumer behavior can be measured quantitatively, I will conduct a qualitative analysis of the impacts of these Internet-based strategies on cooperative behavior. This research will be largely situated in organizational behavior theory. I hypothesize that the increase in transparency will lead to an increase in accountability of cooperative organizations—which are often shown to be dominated by local male elites who provide low wages to the female producers. I am interested in therefore seeing what the impacts of selling products through an e-commerce site and the role that information sharing has on cooperative behavior. The efficacy of producer-side functionality proposed in the further work section can also be measured.

6.4 Contributions

My work on the integration of value chain transparency into e-commerce site design led me to the following contributions:

- Conceived of a strategy to integrate value chain transparency in e-commerce design
- Implemented this strategy by developing *theargantree.com*
- Conducted a pilot study to measure the efficacy of the strategy proposed
- Developed preliminary evidence that that integrating value chain transparency can positively influence consumer buying behavior

Chapter 7

Appendix

Count of visits from this visitor including current	Visits that were the visitor's nth visit	Percentage of all visits
1 times	345.00	77.35%
2 times	39.00	8.74%
3 times	15.00	3.36%
4 times	8.00	1.79%
5 times	5.00	1.12%
6 times	6.00	1.35%
7 times	5.00	1.12%
8 times	3.00	0.67%
9-14 times	11.00	2.47%
15-25 times	6.00	1.35%
26-50 times	3.00	0.67%

Figure 7-1: Visitor Loyalty (Courtesy of Google Analytics)

Pageviews in the visit	Visits with this many pageviews	Percentage of all visits
1 pageviews	117.00	26.23%
2 pageviews	76.00	17.04%
3 pageviews	71.00	15.92%
4 pageviews	51.00	11.43%
5 pageviews	42.00	9.42%
6 pageviews	23.00	5.16%
7 pageviews	23.00	5.16%
8 pageviews	11.00	2.47%
9 pageviews	6.00	1.35%
10 pageviews	5.00	1.12%
11 pageviews	6.00	1.35%
12 pageviews	3.00	0.67%
14 pageviews	1.00	0.22%
16 pageviews	1.00	0.22%
17 pageviews	2.00	0.45%
18 pageviews	1.00	0.22%
20+ pageviews	7.00	1.57%

Figure 7-2: Depth of Visits (Courtesy of Google Analytics)

Visits 446 % of Site Total: 100.00%		Pages/Visit 4.03 Site Avg: 4.03 (0.00%)		Avg. Time on Site 00:02:45 Site Avg: 00:02:45 (0.00%)		% New Visits 77.35% Site Avg: 77.35% (0.00%)		Bounce Rate 26.23% Site Avg: 26.23% (0.00%)	
	Browser and OS None	Visits ↓	Pages/Visit	Avg. Time on Site	% New Visits	Bounce Rate			
1.	Internet Explorer / Windows	133	4.50	00:03:27	81.95%	19.55%			
2.	Firefox / Windows	105	3.80	00:02:41	73.33%	27.62%			
3.	Safari / Macintosh	74	3.34	00:02:37	66.22%	35.14%			
4.	Firefox / Macintosh	49	5.31	00:03:11	73.47%	24.49%			
5.	Chrome / Windows	45	3.42	00:01:48	86.67%	26.67%			
6.	Chrome / Macintosh	14	4.50	00:02:33	71.43%	7.14%			
7.	Safari / iPhone	4	1.75	00:00:19	100.00%	50.00%			
8.	Firefox / Linux	3	4.67	00:01:01	100.00%	33.33%			
9.	Mozilla Compatible Agent / iPhone	3	1.00	00:00:00	100.00%	100.00%			
10.	Opera / Windows	3	2.67	00:02:24	100.00%	33.33%			
11.	Safari / Android	3	3.00	00:00:33	100.00%	33.33%			
12.	Safari / iPad	3	4.67	00:01:14	66.67%	33.33%			
13.	Safari / iPod	2	1.50	00:00:03	100.00%	50.00%			
14.	BlackBerry9630 / BlackBerry	1	4.00	00:01:12	100.00%	0.00%			
15.	Chrome / Linux	1	3.00	00:00:37	100.00%	0.00%			
16.	Mozilla / Linux	1	6.00	00:00:40	100.00%	0.00%			
17.	Mozilla / Windows	1	1.00	00:00:00	100.00%	100.00%			
18.	Safari / (not set)	1	3.00	00:01:53	100.00%	0.00%			

Figure 7-3: Browser and OS Accessibility (Courtesy of Google Analytics)

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