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Value Propositions of the U.S. Trucking Industry

Abstract

This article uses a method combining analysis of Web site content with the constant comparison process from grounded theory to investigate the value propositions offered by 100 U.S. motor carriers. Using the selling messages of the Web site for these firms, coupled with follow-up interviews, we found that the basic motor carrier value proposition is developed around the four themes of time, place, value management, and value-add. In addition we found underlying capabilities (e.g., type equipment, technology, reliability) that carriers suggest are required to create those value proposition themes. These messages serve an important role in differentiating a firm's offering in a commodity business, like the U.S. motor carrier industry, where price is not a distinguishing factor in most cases. Our findings suggest that many of the sampled firms attempt to avoid price-based commoditization through the value propositions they project.

Little happens in supply chains without the efficient, reliable movement of raw materials and finished goods. There is no argument that transportation is at the core of the logistics concept (Bowersox, Closs, and Cooper 2002; Langley 1980). Though it is widely acknowledged that the core value of transportation is time and place utility (Kotler and Armstrong 2005; Langley 1980), what is less understood are other potential elements of transportation value beyond these basic value-adds. In a time of significant carrier consolidation, economic turmoil, demand for greater efficiency, and pressure towards commoditization, understanding transportation's value is critical. That understanding is needed to comprehend the future direction of the motor carrier industry, and the competitive position of the individual firms in that industry. In order to gain this understanding we investigate the value propositions offered by sampling 100 of the top U.S. motor carriers.

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We believe this is an important, but underresearched, topic. While logistics value has been studied frequently (Andraski and Novack 1996; Mentzer, Flint, and Kent 1999; Novack, Rinehart, and Langley 1994; Novack, Rinehart, and Langley 1996), as has the impact of logistics on customers' perception of value (Flint and Mentzer 2000; Flint et al. 2005; Flint, Larsson, and Gammelgaard 2008), less attention has been given to the specific value created by the transportation industry beyond time and place utility. This research is intended to address the gap in our knowledge of transportation value, and more specifically motor carrier value. We do this by constructing an investigation into motor carriers' own perceptions of their value-added by examining the *value propositions* found in the online marketing communications of the top 100 U.S. motor carriers as defined by *Inbound Transportation* (O'Reilly 2008). In studying transportation value propositions we choose to begin with motor carriers, both to make the effort manageable, and because motor carriers represent the largest category of transportation-related expenses (Wilson 2007).

Value propositions are derived from the tangible and intangible resources of a firm (Carrington 2007; Johnson, Christensen, and Kagermann 2008; Tuominen 2004). Firms project

their market strategy through the value propositions they send in the marketplace (Flint and Mentzer 2006; Vargo and Lusch 2004). These value propositions are often seen in the marketing and selling messages used by firms (An 2007; Spears 2001), such as the messages found on company Web sites. Advertising research suggests that a Web site acts as a dialogue between a company and its customers (An 2007; Jaworski and Kohli 2006). For business-to-business and business-to-consumer, Web-based messages are increasingly the primary source for company information (Ratchford, Talukdar, and Myung-Soo 2007). Understanding and decomposing this dialogue through the study of 100 motor carrier Web sites, coupled with follow-up interviews used to confirm findings, provides an effective method to reveal the underlying elements of transportation value.

Value proposition research is gaining momentum in the supply chain area. Value proposition research has been used recently to describe supply chain cross-firm collaboration (Swink 2006; Tuominen 2004) and to understand the strategic market positioning of third-party logistics firms (Randall and Defee 2008). The value propositions used by transportation companies have not been studied. This is not surprising as much motor carrier research has focused on optimization, the make-versus-buy decision, and transportation's role in providing time and place utility, while largely viewing transportation as a commodity.

Our research objective is to understand the underlying elements that form the value-based proposition(s) that motor carriers present to their customers. We explore the idea of transportation as a commodity, and we try to understand if time and place utility will always devolve to a cost-based strategy, or if transportation firms attempt to differentiate themselves (Porter 1980) through value propositions. To guide our efforts we use service dominant (SD) logic as a foundation for this investigation (Vargo and Lusch 2004). SD logic has been shown in the marketing literature as a robust research framework that provides a foundation for understanding the source of value created by a firm or network of firms (Bolton 2004; Mentzer, Min, and Bobbitt 2004; Vargo and Lusch 2004).

We employed a mixed-method approach to create an aggregate level taxonomy of motor carrier value propositions. This was accomplished by qualitatively analyzing the way value is described by the motor carriers themselves through their Web-based messages. We focused that content analysis effort through the use of the constant comparative analytical technique of grounded theory (Glaser and Strauss 1967; Spears 2001). Findings were confirmed by conducting semi-structured interviews with senior executives of motor carrier firms and select customers.

Literature Review

The Value of Logistics and Transportation

Logistics value has been examined frequently in the literature (Flint and Mentzer 2000), traditionally being described as the ability to optimally balance the trade-off between lowering cost and increasing demands for customer service (Stahl and Bounds 1991). Langley and Holcomb (1992) take this view a step further by identifying three ways logistics creates customer value: effectiveness (e.g., customer service), efficiency (e.g., cost), and differentiation. Differentiation in this context refers to the firm's ability to create value through unique logistics value-added service. Novack, Rinehart, and Langley (1994; 1996) present a model of the logistics value process that identifies the quality of logistics functions, transactionally and over time, as the antecedents of customer perceptions of value. Ultimately, logistics value is created through the delivery of place and time utilities (Coyle et al. 2008).

Transportation provides the means to create the logistics value of place utility by moving finished goods from the point of production to the point of demand (Novack, Rinehart, and Wells 1992). Despite this critical role, little mention of transportation value has been made in the scholarly literature. Searches using "'transportation'' and "'value'' result in articles measuring a transportation-related metric. For example, Lam and Small (2001) develop a model to determine the value of time for commuters on a certain highway in California. Similarly, Asensio and Matas (2008) look at variability of commuter travel times in Spain.

Hsiao (2009) determines the value of time associated with delivery of books purchased through an on-line source.

Transportation value research appears to be based on the concepts of time and reliability. Morash and Ozment (1996) examine both these elements and find that firms may develop strategic advantage through both external and internal sources. The study is based on analysis of airline passenger perceptions of service quality. Stank and Crum (1997) compare on-time transportation performance of just-in-time versus non-just-in-time maquiladora manufacturing operations. Saldanha, Russell, and Tyworth (2006) investigate ocean transport time performance. Morash and Clinton (1997) consider how transportation capabilities, including reliability and time compression, affect the structural design of global transportation networks. It is interesting that these and other transportation studies do not provide in-depth analysis of transportation value that avoids commoditization and goes beyond time and place utility. This suggests a gap exists in our understanding.

Transportation Value and SD Logic

Historically, marketing focused on tangible goods as the unit of exchange (Vargo, Lusch, and Morgan 2006; Wilkie and Moore 2003). Under this perspective the value of goods was based in economic resources that have the tangible form of land, labor, and capital (Smith 1776). This neoclassical perspective states that value is in the production and distribution process (Shaw 1912; Vargo and Lusch 2004).

The constructs emerging from modern exchange research go beyond the value embedded in a product. Investigation into market orientation (Jaworski and Kohli 1993; Kohli and Jaworski 1990; Narver and Slater 1990), customer satisfaction (Parasuraman, Zeithaml, and Berry 1985; Zeithaml, Berry, and Parasuraman 1996), and experiential aspects of consumption (Flint 2006; Mello, Stank, and Esper 2008) indicate that value is more than product alone. These research streams indicate that value is based on each customer's unique needs and is thus contextual.

This interaction between the value offered by a firm, and how that offer interacts with the customer to create specific value, is central to SD logic. The firm-customer interaction incorporates both tangible and intangible resources to create value. Those intangible resources (i.e., specialized skills, knowledge, and processes) are what firms use to bundle together products and services to provide service-based value propositions (Vargo and Lusch 2004). It is the intangible resources that create individual customer value and are the firm's fundamental source of value. Intangible knowledge and skill-based resources are "'resources that produce effects'' (Vargo and Lusch 2004, 2) and represent the core competencies of the organization. The firm's ability to bundle its resources to meet customer value requirements therefore has significant implication for sustained competitive advantage.

SD logic has the potential to show how the primary transportation offering, time and place utility, avoids commoditization. Explaining transportation value using a service-dominant framework allows greater understanding of the complex interaction between the customer, the focal firm, and network partners (Vargo and Lusch 2004). Understanding that interaction is central to understanding how transportation firms create superior value and competitive advantage.

SD logic provides a conceptual structure for transportation research that defines success not only on time and place utility, but how transportation products and services convey a service-based value proposition (Bolton 2004; Mentzer, Min, and Bobbitt 2004; Vargo and Lusch 2004). Transportation as a service means that place utility is bundled with other less tangible elements of value such as in-transit visibility and customer-specific time-definite delivery to satisfy a service requirement (Forsyth 2000; Morton 1996). The SD logic framework provides a lens for value proposition research by accounting for elements that transcend product and account for the unique aspects of value that occur between a firm and a specific customer (Lambert and García-Dastugue 2006).

Methodology

Support for qualitative research in supply chain management is on the rise. Qualitative methods have been used to understand service-driven loyalty (Davis and Mentzer 2006), supply chain management coordination mechanisms (Fugate, Sahin, and Mentzer 2006), logistics management in a transitional economy

(Price 2006), logistics outsourcing strategy (Mello, Stank, and Esper 2008), motor carrier driver behavior (Swartz and Douglas 2009), and antecedents of inter-organizational relationships (Golicic and Mentzer 2005).

We add to the growing volume of supply chain qualitative research by using a mixed-method approach to understand the motor carrier value proposition. Our mixed-method approach uses the constant comparison process of grounded theory (GT) combined with qualitative analysis aimed at developing a typology to evaluate the Web-based messages of 100 U.S. motor carriers. Qualitative analysis has been shown to be effective in firm communication research (Kassarjian 1977; Spears 2001; Stafford, Spears, and Chung-kue 2003), including the harvesting of content from Web sites (An 2007). The Web-based content used in this research served as a rich source of data that might otherwise be gained using semi-structured interviews. We analyzed the Web content to provide a way of understanding an entity's *apparent intent* with respect to an *apparent audience*. We integrated the constant comparative technique into this content analysis process to further analyze the data (Charmaz 2006; Glaser and Strauss 1967; Randall and Defee 2008).

GT is an inductive pattern searching process that seeks to relate developed categories in a theoretical structure (Glaser 1978). The constant comparison process was used to iteratively assess the Web data with the goal of sorting these observations into a typology of motor carrier value propositions based on the categories that emerged. Constant comparison provided us with an ability to identify and relate the core elements of the motor carrier value propositions. This approach is both descriptive and categorical and resulted in a typology of value proposition categories. Table 1 details the specific steps followed in this research. We accomplished step 1 through the introduction and literature review. The remaining steps are described next.

Sampling and Unit of Analysis

For this sample (step 2) we selected 100 U.S. motor carriers identified in the *Inbound Logistics* annual listing of the top 100 motor carriers (O'Reilly 2008). The sample provides a robust grouping of small, medium, and large firms, each with functional Web sites. Further, these firms are evaluated as well managed by a major industry publication. Motor carriers must routinely prospect for new business and refine their value propositions. The sampled firms have a demonstrated track record of success in business development and thus have adjusted their value propositions to remain competitive over time. Increasingly, Web sites are used by organizations to project strategic content toward intended customers (An 2007). Table 2 gives an overview of the sizes of the firms used in the study based on size of tractor fleet. We validated this classification by collecting information on the revenue for the publicly traded firms and regressing that on number of tractors. This provided us with an r^2 of .403 ($p = .01$). We had 11 firms that had fewer than 500 tractors and a total of 22 firms with fewer than 1,000. We classified these as small and medium respectively. The remaining firms were placed in the large category.

Analytical Process

After conducting an initial examination of the data we imported the Web site content into the analysis software (step 3). We used MAXQDA qualitative analysis software to support this research (Lewins and Silver 2006). Qualitative software allows both quantitative tasks, such as frequency counts and cross-frequency counts, and facilitates classical coding and categorization. Both aspects of the software were used in this project. The software simplifies quantitative statistical analysis based on word/phrase counts and frequencies. This generated 4,585 distinct words used across the 100 Web sites. Stop lists were then used to remove words with low meaning such as *the*, *of,* and *is* from the analysis to produce a reduced set of 522 key terms.

During this step we also evaluated the demographics associated with the firms in the study. We used Microsoft Access to help us manipulate and categorize the demographic information provided by the *Inbound Logistics* survey. Table 3 provides a demographic breakdown of the sampled carriers. The majority of firms in the study are privately held (69 percent), and these firms have fleets and terminal operations about one-third the size of the publicly held carriers. The public firms demonstrate slightly better operating and freight claims ratios as

Table 1. Research Methodology Steps

Step 1	Identify an undeveloped research problem and review the relevant literature.
Step 2	Determine sample and data sources for content analysis.
Step 3	Import data into analysis software and create stop lists.
Step 4	Perform initial independent coding of key terms found into sub-categories.
Step 5	Review the source data to ensure key terms are considered in the correct context.
Step 6	Begin to develop major initial aggregate categories. This is accomplished independently at first by each researcher.
Step 7	Compare category findings, resolve any discrepancies, re-categorize if necessary. Repeat beginning at step 4 as necessary.
Step 8	Member check through semi-structured interview. Resolve any discrepancies, compare with previously code Web sites, re-categorize if necessary. Repeat beginning at step 4 as necessary.

Table 2. Firm Size

Number of Tractors				
Min	Max	Average	Mode	Median
105	56,100	3,617	1200	1850

expected because of the added pressure for financial performance from shareholders. Although non-union carriers make up the majority of the sample (76 percent), these are smaller in terms of fleet and terminals. The non-union carriers also show a better operating ratio.

The qualitative analysis and interpretation steps came next. The constant comparison technique (Charmaz 2006; Glaser and Strauss 1967; Glaser 1978) was used to code, memo, categorize, and recode the data. Initially the researchers independently coded key terms and arranged them into sub-categories (step 4) for about 25 percent of the firms. The team then came together to discuss their coding and initial findings. The team continued in this manner of coding, discussing, and recoding until codes that dealt with similar themes were combined to create more aggregate sub-categories. For instance, one of the first major categories to emerge was "'place utility.'' Place utility identifies the firm's ability to support a defined geographic scope. Table 4 provides an overview of the underlying codes that support place utility as a category.

During the coding process each code was linked back to the original Web site content to affirm contextual understanding (step 5). While we used word frequencies to form our analysis, by linking back to context we were able to make the unit of analysis the sentence, and thus judge intended meaning rather than particular words (Guthrie et al. 2003; Guthrie et al. 2004). This back-and-forth process allowed us to evaluate the value proposition (if any) supported by each term. The initial context-linked catalog of key terms was culled, and aggregated, to include only words that dealt with transportation value in some way. This resulted in a refined "'short list'' of categories, words, and overall frequencies as shown in Table 5.

We continued to arrange the codes under sub-categories, and then logically related and grouped those into major categories of codes (step 6). We performed this process individually, but came together frequently to compare category assignments and resolve any discrepancies (step 7). We found that the last group of Web sites (25) did not provide any substantially new insights. This suggested saturation. Saturation is associated with validity in qualitative research, and occurs when no new insights are obtained regarding a category of data (Bowen 2008; Cho and Trent 2006; Glaser 1978).

We used the approach to assessing trustworthiness of the research outlined by Flint, Woodruff, and Gardial (2002) by applying overlapping sets of criteria as shown in Table 6. We focused on credibility, transferability, dependability, confirmability, and integrity (Lincoln and Guba 1985; Wallendorf and Belk 1989) as described in interpretive research. We also conducted a number of member checks with senior executives from motor carriers and select customers to evaluate the fit of our conclusions. Fit means that the data, the analysis, and the emerged theory fit with the environment as

Table 3. Demographics

Public or Private	Total	Operating Ratio	Claims Ratio	On time Delivery Avg	Fleet Size Avg	Avg Number of Terminals	% Providing Logistics Services
Private 52 non union 2 union 15 both	69	94.10%	0.52%	97.94%	2,031	43	62.32%
Public 24 non union 5 union 2 both	31	91.73%	0.47%	97.82%	7,008	175	54.84%
Totals	100	93.15%	0.51%	97.91%	3,617	83	60%
Union/non union							
Hybrid	17	95.38%	0.60%	97.56%	6,691	158	64.70%
Non union	76	92.70%	0.50%	97.97%	2,917	59	60.52%
Union	7	95.30%	0.41%	98.90%	4,104	157	3%
Total	100					Total	60%

Table 4. Place Utility Category and Codes

Category: Place Utility	This category deals with the geographic scope that a firm is able to offer as part of its value proposition. Place utility is based upon resources (e.g., terminal location) and expertise that the carrier has to support a defined geographic scope. Many firms with limited geographic scope extended their place utility offering through partnerships.
Code 1: Regional	A number of firms compete based upon regional expertise (e.g., ''Southeast'').
Code 2: North America	Other firms emphasized their ability to operate in the U.S. and Canada and/or Mexico.
Code 3: International	A very few firms emphasized their ability to engage in global freight movement. Typically these firms also offered supporting logistics services and Web tools.
Code 4: Partnership	Firms with scope in limited area, such as North America, would advertise that ''through their partnerships'' they could attain additional geographic scope.

Table 5. Representative Words Associated with Aggregate Categories

Category	Representative Words	Word Usage
Time	Expedited, overnight, accelerated, anytime, custom critical, daily, emergency, fast, same day, quick, speed, time critical, express, time sensitive	551
Price	Cheaper, economical, low-cost, pricing quotes, rates	107
Place	Canada, international, import, regional, long haul, short haul, America, anywhere, Arizona, China, coast-to-coast, global, worldwide	1,014
Place-type of cargo	Bulk, animal, commodities, temperature sensitive, chemical, acid, cold sensitive, cement, goods, retail goods, freight, household, defense, hazardous, heavy, liquid, petroleum, letter, CPG, perishable, less than container, truckload, less than truckload	661
Place-mode	Air, barge, ground, inland, intermodal, port transfer, ocean, rail, ship, water, rail-to-truck	340
Vehicle assets	Trailers, trucks, dry-van, flatbed, 40 foot, 45 foot, 53 foot, tandem, maintenance facilities, tractors, material handling equipment, rail car, refrigerated, containers	701
Transaction risk mgt – Documentation	Document, bill of laden, online reports, reports, billing, claims	86
Transaction risk mgt -- Guarantee	Accuracy, award winning, quality, damage-free, accident free, dependable, consistent, diagnostics, efficiently, experienced, financially stable, growing, ISO, ranked, references, reliable, safeguard, proven, modern, monitored, reputation, well-equipped, well-trained, world-class	981
Transaction risk mgt – Flexibility	Adaptive, flexible, alternatives, customized, tailored	75
Transaction risk mgt – Technology	Automated, on-board communications, computerized, electronic, web-based, Landstar, online, electronic, state-of-the-art, satellite, technology, EDI, tracking, Qualcomm	610
Service extension	Leasing, 3PL, break-bulk, brokerage, consolidation, deconsolidation, financing, freight forwarding, full-service, logistics services, one stop, pickup, services, transload, assemble, packaging, storage, analytics, warehousing, inventory, cross dock, numbers of doors, infrastructure, container-lifting, terminals	1,893
Firm culture/ management	Bilingual, dedicated, trustworthy, integrity, courteous, customer focused, top drivers, family, family owned, goals, pride, people, relationship, training, well-paid, spirit, privately held, long history, innovative, partnerships, alliances, collaboration	932

interpreted by experts (Mello and Flint 2009). Specifically, we presented our findings during interviews with six motor carrier executives and three customers as shown in Table 6. These member checking sessions validated our broad findings, and provided valuable insights and helped refine our analysis. Lastly, two outside academic researchers familiar with motor carrier value also reviewed and validated the findings. We believe that our data and analyses met both the trustworthiness and fit criteria.

Analysis and Interpretation

The identification of the motor carrier value proposition and the tangible and intangible resource elements that underlie that proposition is the key finding of the research. Table 7 outlines these findings. In the next section we elaborate on Table 7, describing the core motor carrier value proposition, the essential elements that support the value proposition, and the capabilities required to create those elements.

Value Proposition

Getting a product to the right place, at the right time, at the right cost, with the right documentation is the core value proposition of the motor carrier industry (Table 7, line 1). The aspect of value for sampled motor carriers is based upon customer satisfaction with the current transaction and the likelihood of future transactions. Many of the firms discussed their "'repeat business,'' "'long-term relationships,'' and "'loyal customers.'' Firms and customers place value in the relationship because that relationship suggests lower transaction risk. Carriers sell current relationships as a way to reduce risk in the eyes of potential customers, thus providing more value and potentially avoiding commoditization.

> Even in a commoditized business with at times a transactional tone and tenor, relationships do matter. It's difficult to quantify the effect that relationships have, but ... it goes beyond ... culture, and comes right down to the human interaction and the personal relationships that often are fostered within many organizations.
> (Interview, motor carrier executive)

Our follow-up interviews suggested that firms understand that previous positive interactions provide the incumbent firm a source of differentiated value that protects, given similar price, against losing the customer. Therefore, each transaction creates value that is manifested after the first transaction ($time^0$) and impacts the perceived value of all subsequent transactions ($time^{1...n}$). Future value is therefore moderated by the summated effect of previous motor carrier-customer interactions. Additionally, judging by the messages conveyed by the carriers, a new customer may infer greater value based upon the strong relationships enjoyed by the other customers of the firm.

Essential Elements of Motor Carrier Value

The analysis suggested that the overall value proposition (Table 7, line 1) is based on four fundamental elements of motor carrier value (Table 7, line 2). The first three elements of time utility, place utility, and transaction value management are present in every transaction. In addition, each firm had some type of wording in their Web-based messages that was confirmed in the follow-up interviews, suggesting a desire to provide service extensions beyond time, place, and transactional value. Each essential element and its value-generating capability (Table 7, line 3) is discussed next.

Time Utility

Not surprisingly, like Drucker (1954) and Langley (1983) we found time utility is the ability to get the customer's freight from point A to point B at a specified time or within a window of time. In general, the motor carriers suggested a delivery window as part of the basic value proposition. Time-specific options such as time-definite, round-the-clock delivery coverage, overnight, and expedited delivery were also described. The more specific the delivery window, and the more expedited the delivery time, the higher the premium. For instance, a number of motor carriers offered time-definite delivery capability at 150 percent of the normal rate.

> On-time performance also means that I (major CPG company) need to intervene on my carriers' behalf to work with the retailer to make sure we are getting the appointments.
> (Interview, motor carrier customer)

For those carriers who have a strong ability to schedule, expedite, and control the delivery

Table 6. Evaluation of Trustworthiness

Criteria	Method Used to Address
Credibility *extent to which the results appear to be acceptable representations of the data*	• ***Three research team members*** gave input during data analysis and interpretation
Transferability *extent to which the findings from one study in one context will apply to other contexts*	• ***Triangulation across methods*** found common categories in content analysis and interviews
Dependability *extent to which the findings are unique to time and place; the stability or consistency of explanations*	• ***Member checking*** confirmed category theme development
Confirmability *extent to which interpretations are the result of the participants and the phenomenon as opposed to researcher biases*	• ***Relatively large sample size*** (for qualitative research) suggests broad applicability of core categories
Integrity *extent to which interpretations are influenced by misinformation or evasions by participants*	• ***Member checking*** confirmed category theme development
Fit *extent to which findings fit with the substantive area under investigation*	• ***Member checking*** interviewees were not provided an explanation of findings prior to interview

Note: Trustworthiness definitions adapted from Flint, Woodruff, and Gardial (2002)

Table 7. Composition of a Motor Carrier Value Proposition

1. Value Proposition	Carrier-customer value proposition: location, time, cost, documentation, and impact on brand			
2. Essential elements of motor carrier value	Time utility	Place utility	Transaction value management	Service extension
3. Value-generating capabilities	– Time-definite – 24-hr coverage – Overnight – Expedited – Delivery window	– Cargo capability – Cargo capacity / space availability – Geographic scope ○ Regional ○ National ○ International	– Guarantee ○ Dependable ○ Reliable ○ Safety ○ Quality ○ Technology – Flexibility ○ Customer response ○ Add capacity ○ Add delivery point ○ Re-route – Information / technology ○ Documentation ○ Billing ○ Shipment information and visibility	– Total solutions ○ 3PL ○ Fleet management ○ Supply chain management – Logistics functions ○ Storage ○ Inventory management ○ Transload ○ Port service ○ Network design ○ Consolidate / deconsolidate ○ Back haul ○ Broker
4. Firm-specific value position	– Firm financial strength – Firm employees/talent	– Firm success/reputation – Firm partners/customers	– Firm history – Firm expertise	– Firm culture – Firm assets

window, time-definite delivery offers a significant opportunity to increase revenue for little to no extra cost.

Place Utility

We also confirmed place utility as the ability to get the freight to the customer's desired location (Drucker 1954; Langley 1983; Plowman 1964). Place utility requires the capability to move a certain type of cargo, the available capacity required to move the amount of cargo, and the geographic scope of operations (regional, national, and international) that covers both pickup and final delivery points. The motor carriers committed significant space on their Web sites describing the types of cargo they move and the specific assets they possess to move that cargo. Table 8 provides a summary of the types of cargo supported by the sampled motor carriers.

> We have to support the freight needs of dozens of clients . . . . Bringing on a new client means we have to select a new set of carriers to support that business so we are routinely evaluating carrier capabilities. We always have a few carriers miss the cut because they can't meet basic requirements like specific route coverage. So, bidding a lower price doesn't help their chances.
> (Interview, 3PL executive and motor carrier customer)

The ability to generate product-specific place utility implies in some cases a specific tangible type of asset, as shown in Table 9, such as tanker trailer, or refrigerated trailers. In other cases the ability requires some intangible specialized skill and knowledge such as hazardous, oversized, and the route-specific security of pharmaceutical transportation. During our follow-up interviews customers mentioned that specific equipment is increasingly an important distinguisher.

Along with the ability to move a certain type of cargo, the motor carriers also articulated their ability to provide the necessary capacity (e.g., numbers of tractors, numbers of trailers, amount of volume carried) and the particular geographic scope supported.

> An example of a distinguishing offering is the type of equipment, such as providing lightweight trailers that can haul 48,000 to 49,000 pounds as opposed to the traditional 44,000 pounds. That clearly provides value.
> (Interview, motor carrier customer)

In some cases this scope was advertised as regional, such as southeastern U.S.; hemispheric, such as U.S. and Mexico; or global. Table 10 provides an overview of geographic scope breakdown of our sample. Only six carriers described themselves as international (FedEx, Estes, Mayflower, National Retail Systems, Penske, and United). Additionally, geographic scope was extended for some firms by advertising partnerships with other carriers that could assist in movements beyond the "'home'' region.

Table 8. Types of Cargo

- Animals	- Household goods
- Automotive	- Letter
- Broad range	- Manufacturer
- Bulk	- Oversize
- Chemical	- Petroleum
- Construction	- Package
- CPG	- Pharmaceutical
- Dry good	- Residential heavy
- Event transportation	- Retail
- Food	- Secure
- Freezable	- Small package
- Hard to handle	- Special handling
- Hazardous	- Tank
- Health care	- Temp controlled
- Heavy haul	- U Pack
- High value	

Table 9. Types of Assets

Equipment	Other assets
- Tractor	- Warehouse
- Trailer (20', 40', 45' 53')	- Cross dock
- Flatbed	- Terminal
- Refrigerated	- Yard
- Temperature controlled	- Number of doors
- Storage trailer	Other than truck
- Van	- Rail
- Specialty trailer	- Air
- Tanker	- Ocean
- Material handling Equipment	- Intermodal
	- Barge

Transaction Value Management

The motor carriers used words such as "'guarantee,'' "'dependable,'' "'flexible,'' "'visibility,'' and "'information'' to convey to

Table 10. Geographic Scope by Numbers of Firms

Numbers of Firms and Their Operating Areas					
International	North America	U.S. Only	U.S./Canada	U.S./Mexico	International
6	44	24	24	2	6

the shipper that their value proposition of time and place utility was low risk, and that the carrier possessed the systems and process capability to react to changes associated before or during the transaction. We initially labeled this essential element of value as "'transaction risk management.'' We arrived at that label as more of a compromise than consensus. After the discussions with carrier executives, we realized that the core capabilities in this area (guarantee, flexibility, and information/technology) functioned as value-assuring resources. We therefore agreed on the term transaction value management for this category.

> We are increasingly seeking carriers who can demonstrate an ability to ensure that their shipments (food) were monitored and protected during transit against damaging temperature and tampering.
>
> (Interview, motor carrier customer)

Terms like "'reliable,'' "'safe,'' and "'quality'' were used to imply a guarantee to the shipper that the carrier will perform as agreed. The carriers described their guarantee to provide time and place utility, or refund the cost and in some cases to refund more than the freight cost amount. Consistent with guarantee and warranty theory (Brucks, Zeithaml, and Naylor 2000; Miyazaki, Grewal, and Goodstein 2005), these statements were provided to suggest that it would be too expensive for the carrier not to perform as agreed. A number of the carriers discussed "'quality programs,'' "'root cause analysis,'' and "'safety programs''; this information suggests that the firm has processes in place to assure performance.

> We change carriers all the time because they cannot perform reliably. Sometimes this is a problem in a given lane; sometimes it's broader than that. Freight cost doesn't matter much when the carrier can't perform.
>
> (Interview, motor carrier customer)

The motor carriers also advertise their ability to flexibly respond to customers' changing needs. Flexibility may be simple (e.g., adding capacity) or complex (e.g., adding unique trailer configurations for hard-to-handle items). Flexibility addresses the motor carrier's ability to respond to changes desired by the customer either before the transaction occurs or while the cargo is in transit.

A significant amount of Web site space was devoted to explaining information management capabilities, and associated information technology. Information systems provide the capability to generate documentation with respect to the transaction and to reduce transaction cost and errors associated with billing.

> Dock-to-dock pickup and delivery is pretty much a commodity; however, in many supply chains, where companies are trying to operate without inventories, it is very important that the shipment moves the way it is supposed to move, and that information about that shipment also moves to the parties that need it, and needs to be available to others as well. Where is the shipment at right now, and how can I check on it?
>
> (Interview, motor carrier CEO)

The carriers used information capabilities to provide the customer with information (often Web-based) about the transaction, such as location, and who had signed for a shipment. In the pre-transaction stage, these information systems suggested to potential shippers low risk associated with ensuring time and place utility was achieved as agreed.

> Most of the LTL carriers have good service, where that never used to be, so now, how you can access or move information starts to become a differentiator.
>
> (Interview, motor carrier executive)

Service Extension

The last area of value generation dealt with the carriers' ability to provide services beyond

cost-effectiveness, low risk, and time and place utility. Many of the carriers spent significant space discussing their ability to "'provide total solutions,'' "'act as a 3PL,'' "'integrate the supply chain,'' "'manage your fleet,'' and "'allow you to focus on your core capability.'' Aside from these 3PL-type value propositions the carriers also described the capability to perform other logistics functions such as storage, inventory management, transload, port service, network design, and consolidation/deconsolidation. The carriers also discussed their ability to either generate additional revenue by brokering the shipper's excess freight or selling backhaul. Each of these functions is an example of value-add extensions to the core value proposition.

Table 11 describes the various service extensions. As part of our analysis in this area we were interested in determining if size of the firm influenced the service offering. To determine this we created two classes of data: small/medium firms (those with fewer than 1,000 tractors, column 1) and the largest firms (those with more than 2,000 tractors, column 2), and baselined that against the overall average (column 3).

Our analysis also showed that those firms offering logistics services were twice the size of those who did not (4,778 fleet size to 2,069 fleet size). In general the larger firms have a greater percentage of expedited, logistics services, dedicated carriage, intermodal capability, refrigerator capability, and ability to haul household goods. However, size does not appear to be a moderating factor with regard to technology offering. This appears to be due to the ubiquity of personal technologies such as cell phones, SMS messaging, and GPS integration. These technologies have a leveling effect among firms regardless of size.

Firm-Specific Value Position

An interesting finding was the amount of space and text many motor carriers spent discussing their firm, and its unique attributes and capabilities. For example, company founding date was mentioned forty-three times. It appeared that the motor carriers were supporting their value-generating capabilities based upon elements unique to their firm. As another example, guarantee was frequently linked with firm financial strength. Items on the Web sites dealing with the motor carrier's longevity, strong firm history, reputation for success, and high-profile customers seemed intended to assure shippers that doing business with that particular carrier carried very little risk. The carriers also discussed their firm culture, commitment to quality processes, talent of their employees, and capability of their drivers.

Conclusion

This research is by necessity exploratory. As such, any conclusions must be tentative rather than sweeping. Yet we believe the findings do inform the discipline in several ways, and provide a path to future research in the area of value propositions. The motor carriers in the sample appear to project very similar and consistent value propositions through their Web sites. Our analysis finds the basic motor carrier value proposition is developed around the four themes of time, place, value management, and value-add. This finding is significant considering our review of the literature found no prior research in the transportation field dealing with transportation value propositions. This gap is somewhat surprising since essentially all businesses project value propositions in the normal course of promoting their products and/or services. These messages become all the more important in order to differentiate a firm's offering in a commodity business, like the U.S. motor carrier industry, where price is not a distinguishing factor in most cases.

The motor carrier industry is similar to other logistics businesses in that it is constantly under pressure to reduce the cost of its service. Many, if not most, shippers routinely shop/negotiate freight rates. Transportation management software and freight brokers both aid the shipper in finding competitive freight rates. This all but ensures that motor carriers will ultimately price their services similarly. The value proposition elements that emerged during our analysis show that motor carriers are directing their selling messages away from service cost since this is not a differentiating factor. The four value proposition elements present an opportunity for savvy motor carriers.

> One of the things that we said is that we believe our supply chain partners value a broad array of integrated solutions, not just

Table 11. Service Extensions: Analyzed by Carrier Size

Small/medium-sized firms fewer than 1,000 tractors (22 firms)			Large firms more than 2,000 tractors (38 firms)		All 100 firms
Average # of tractors: 552			Average # of tractors: 6,932		Average #: 3,617
Operating Characteristics					
Capabilities	Trait	%	Trait	%	Total (%)
LTL	12	55%	20	53%	49
TL	6	27%	11	29%	30
Package	1	5%	2	5%	5
Expedited	11	50%	26	68%	59
Logistics service	9	41%	28	74%	60
Dedicated carriage	9	41%	23	61%	56
Intermodal	5	23%	20	53%	38
Household	1	5%	3	8%	12
Bulk	4	18%	9	24%	21
Auto carrier	3	14%	4	11%	10
Refrigerator	5	23%	19	50%	40
White glove	1	5%	4	11%	4
Last mile	0	0%	6	16%	9
Technology Characteristics					
Web tracking	17	77%	33	87%	85
Email alert	20	91%	32	84%	83
Web pricing	13	59%	23	61%	57
Logistics Web tools	15	68%	26	68%	67
Visibility by cell	8	36%	16	42%	34
Visibility by satellite	16	73%	26	68%	68
Visibility by bar code	6	27%	8	21%	20
Visibility by RFID	3	14%	2	5%	5
Voice sat phone	4	18%	10	26%	18
Text sat phone	14	64%	32	84%	70

> trucking, so we wanted to . . . provide . . . a holistic solution from point of origin to end user of the product and we would kind of bundle the services together, with the belief that the supply chain valued that.
> (Interview, motor carrier executive)

Our findings, and in particular the interviews, suggest that top motor carrier firms attempt to move beyond commoditization, and as stated by one executive we interviewed, "'It is all about positioning.'' Not every firm needs to do everything. But firms must show they are able to differentiate themselves. Those differentiators are, as stated by another executive, the "'value propositions that actually gain market share.'' While transportation may well be a commodity, motor carriers are finding ways to turn time and place utility into a value proposition. They are doing so by adding such capability as expedited delivery, time-definite delivery, and expanded geographic scope. They are also augmenting the classic time and place utility with service extensions, such as an array of logistics services, dedicated carriage, and risk mitigation value propositions that suggest the firm can manage the transaction successfully. The ability of the firms to create nonprice, differentiated advantage may provide competitive protection against commoditization pressure common to the industry.

> We certainly have gone the way of commodity on the price line . . . I do think that what you find though is that shippers will

look for differentiators to give the limited freight they have. Yes, price is still relevant but even in a commodity market I do think differentiation is possible and important. (Interview, motor carrier executive)

Implications for Managers

Carriers may want to delve into the value propositions (e.g., selling messages) being used by key competitors. When a competitor is projecting similar value propositions there is a chance shippers will be unable to distinguish between the two options, making the carrier decision an arbitrary one. By identifying and understanding the similarity in competitors' value propositions, the carrier may develop an opportunity to adjust or expand its own message and create differentiation. In commodity competition, differentiation and the value associated with the brand (Monroe 1976; Zeithaml 1988) are among the few alternatives in the search for a competitive advantage.

Firms realize that, once commoditized, competing on price presents a significant disadvantage (Adrangi, Chow, and Raffiee 1997). Fighting against commoditization, the motor carriers we studied project extended value propositions based on intangible skills and knowledge that are by no means commodities. The sampled firms provide a fundamental and arguably commoditized value proposition—the movement of freight from point A to point B. However, the top 100 motor carriers battle commoditization and price-based competition by describing superior knowledge and skill-based value propositions to customers.

An alternative opportunity for motor carriers involves partnering. Many carriers' geographic coverage is limited to a specific region. Regional carriers may benefit from utilizing a competitor value proposition analysis to identify similar firms that serve different regions. Companies projecting similar value propositions become logical candidates for partnering agreements that provide seamless service to shippers while extending the reach, and thus growth options available, to both partners.

Implications for Researchers

We also believe our findings provide valuable insights for researchers. Value propositions are essentially an unexplored area of logistics, and hold the potential to provide new perspectives into how logistics and transportation firms attempt to develop competitive advantage in an otherwise commodity-based industry. Further, this research suggests how SD logic provides a foundation to understand logistics value propositions, and how tangible and intangible firm resources are bundled to create value propositions that protect against commoditization.

We do not presuppose all value propositions are effective, but additional study of the phenomenon may lead to identification of specific value propositions, or specific situations, that are more effective than others. Further, our research has demonstrated that the SD logic conceptualization of knowledge and skill-based service provision has significant implications for logistics. The value proposition area provides a lens to explore the linkage between logistics and marketing.

This research presents a method combining elements of qualitative content analysis and the grounded theory technique of constant comparison to perform an interpretive analysis that has not been used in previous transportation studies. We contend the method is a powerful tool to examine a wide range of topics in the discipline, and is especially useful in establishing a baseline, or typology, for understanding phenomena that have been given little research attention in the past. Survey-based research, while valuable, continues to struggle with low response rates (Dillman 2000). Our research approach provides a holistic explanation of current supply chain concepts (e.g., place utility), while also identifying conceptualizations (elements of motor carrier value propositions) through rich observation and analysis (Deighton and Narayandas 2004). This approach addresses practitioner concern that current business research variables are increasingly studied out of context (Brown 2005). Our methodology also addresses senior executive calls for research results that are inherently more comprehensible and actionable (Brown 2005; Day and Montgomery 1999; Webster 2005).

From a transportation perspective, the SD framework suggests that successful motor carriers are likely to define their offering as their ability to apply intangible skills and knowledge in the pursuit of superior transportation-based

value propositions that satisfy individual and contextual customer requirements. Identifying that offering, and decomposing the tangible and intangible elements of that service offering, is likely to provide significant insight into the nature of transportation value beyond mere time and place utility. The use of SD logic has only recently begun to be used in supply chain research. We believe SD logic provides an effective theoretical lens through which to view supply chain phenomena.

For example, SD suggests that firms provide value propositions, and that products merely transfer that value, and these value propositions change over time (Vargo and Lusch 2004). We found this to be the case. During our interviews both carriers and customers suggested that time utility and place utility are merely the entry into the game (e.g., order qualifiers). The tangible aspects of transportation like geographic/route coverage and type of equipment are order qualifiers. SD allowed us to consider and recognize the intangible elements of transportation service (e.g., firm culture, firm age, safety culture). The intangibles may be the order winners that provide differentiation and competitive advantage.

We believe our method has helped identify the nature of value propositions as they relate to motor carriers. Three questions arise from this study. First, do carriers' value propositions change over time in light of changing market conditions? This study has established a baseline against which future research in the area can compare.. A longitudinal study of motor carrier value propositions considered over several years would help identify the types of changes and rate of change made to value propositions in the industry. Second, do value propositions remain consistent across the multiple communications vehicles available to carriers? For example, are advertisements in trade publications and/or the messages delivered to customers by carrier salespeople the same as the value propositions projected through company Web sites? A future study could compare data collected from these alternative sources to the baseline Web site data explained in this study. Third, what are the similarities and differences of value propositions utilized by different types of supply chain firms? Randall and Defee (2008) previously looked at the value propositions used by third-party logistics firms, but many other types of supply chain firms remain to be examined. For example, value propositions have not been examined for suppliers, manufacturers, contract manufacturers, freight brokers, wholesale distributors, or air, rail, or water carriers.

Our findings in this exploratory study provide a starting point for future research into value propositions across the supply chain. Three research propositions are developed from our findings and could be used to define the scope of future inquiries:

RP1: In commoditized industries, such as the U.S. motor carrier industry, firms will attempt to fight pricing pressure with value propositions projecting transaction value management.

RP2: In commoditized industries, such as the U.S. motor carrier industry, firms will attempt to fight pricing pressure with value propositions projecting expanded value-added capabilities.

RP3: In commoditized industries, such as the U.S. motor carrier industry, firms will attempt to fight pricing pressure with value propositions leveraging firm-specific characteristics.

Value propositions are one way to gain insight into how supply chain firms position themselves relative to competitors, and thus provide a window into the differentiation strategies being pursued by a firm. However, the existence of value propositions does not guarantee success in the marketplace, or even that the firm will behave in line with its own value propositions. So, in addition to our other suggestions, future researchers in this area may want to link performance outcomes back to firm value propositions to determine whether a clear relationship exists. We believe value proposition is an area of meaningful research for supply chain management in the future.

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