ARE ETS OPERATORS DISCONNECTED?

Connectivity: A Case Study of Internal Communication Processes Between Transit Operators at a Municipal Transit System.

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Disclaimer

This project is submitted as partial requirement for the degree of Master of Arts in Communications and Technology. It is the product of my own labour except where indicated in the text. The report may be freely copied and distributed provided the source is acknowledged.

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Abstract

Effective internal communication is crucial to the success of every organization, yet it is often a neglected discipline. With the development of e-mail, the internet and intranets, and social media it could be assumed that managers within organizations can effortlessly communicate to employees, mainly through e-mail. Employees should also be able to communicate peer-to-peer, keeping them "connected" to the organization. However, there are hundreds of organizations that have employees who do not have a stationary workspace due to the mobile nature of their work. This mobility hampers the employee's ability to be connected to the organization through electronic interfaces at a, now traditional, stationary workstation. This case study uses Edmonton Transit System (ETS) operators (bus drivers) as the sample group to determine their "disconnection" from the rest of the organization. Operators were observed and given a questionnaire in order to determine which communications tools they used and the effectiveness, the importance and satisfaction level of information received, and how they rated the current feedback processes in their garage. This research provides valuable information regarding how to enhance two-way communications in a large diverse organization between mobile and non-mobile employees.

Keywords: internal communications, lateral communication, mobile employees, non-wired employees, operators, bus drivers, public transportation, and media richness theory

1.0 Introduction

Purpose

The purpose of this study is to determine aspects of transit operators' connectivity to the organization and to explore various communication tools that will enhance two-way communications between operators and administrative staff (including management).

Background

Edmonton Transit System (ETS) is owned and operated by the City of Edmonton (COE) and falls under the Transportation Services Department. ETS employs over 2,200 employees and in 2012 provided close to 83 million trips on bus and Light Rail Train (LRT) to Edmontonians (Disabled Adult Transit Service (DATS) trips are not included in the numbers). ETS has a fleet of 960 buses, 98 lift-equipped DATS buses, 74 contracted passenger vans, and 74 Light Rail Vehicles (LRV) (City of Edmonton, 2011, p.5). ETS is divided into seven sections, and each section is managed by a director reporting to the Manager of ETS. The Manager of ETS reports to the Transportation Services Department General Manager. The seven ETS sections operate out of four bus garages, one DATS garage, one Light Rail Transit (LRT) facility, and three offices located in downtown buildings.

ETS Services

ETS generates revenue through sales of 86 different fare products, advertising on transit-owned assets, charter and special event services, and rental of parking stalls at ETS park-and-ride sites. Fare product revenue is generated through sales at retail outlets, on buses, at ticketing machines in LRT stations, and on-line sales.

ETS Operators

ETS's core service is to provide bus, LRT and paratransit (service that does not follow fixed routes or schedules) service to the general public. ETS is a large, diverse organization with employees reporting to different locations throughout the city and offering several business services. Approximately 1,500 of the 2,200 ETS employees are transit operators (drivers) who report to one or more of the six operational (bus) garages throughout the city.

ETS Communications

A challenge that large organizations have is ensuring consistent communication messages are being received by employees across the organization. There are several communication mediums available in the bus garages. ETS has a monthly internal newsletter which includes a message from the Manager stating budgeting and organization direction, and current and future events within the organization. ETS also has operation notices which are posted in all the garages and emailed to all administrative staff. These operation notices are for any information that will affect the operators such new fare policies, upcoming ETS promotional campaigns, or to advise of potential increased ridership due to big events. ETS has internal TV monitors which are displayed in all garages and offices. The monitors are used to display messages about current and future ETS events, activities and services. ETS also communicates via dispatch slip messages (transit/LRT operators digital sign in slip) and via mobile data terminal for DATS operators. "Smart buses" are being introduced into the system and these will come equipped with a mobile data terminal in the conventional buses. ETS has a few committees such as Operator Focus Groups and Occupation Health and Safety committees which provide some face to face time with administrative/management and other operators. With the extensive number of

tools available to employees it is important to determine if the tools are being used for the right messages.

Operators receive and can deliver emergency messages through the radios that are installed on all buses and light rail vehicles. Emergency messages are categorized as safety and security and service information (i.e. delays or detours). There are other messages besides emergency messages that need to get to the operators. ETS administrative staff (including management) coordinates several projects that impact the general public. Projects include partnerships with festivals in which ETS provides free service to general public, implementation of new technology on buses, increase in fare changes, and introduction of new fare products. ETS operators are front line staff and as such, the general public relies on the operators to know any information that would have an impact on them. Even though there are several communication tools in place for the administrative staff to communicate to the operators, there are still difficulties sending and receiving messages from operators.

ETS has many operational factors that present a challenge for effective two-way communications. The main factor is that operators are “mobile” (no stationary work space) and “non-wired” (no access to a work computer). Administrative employees including management have a stationary work space and a computer so there is a “disconnect” that limits opportunities for communications. Approximately 4% of the operators start and end their shift at a transit centre or a bus stop so they seldom step foot into a garage. ETS operates virtually 24 hours and seven days a week (approximately 19 – 21 hours serving the public with additional time for employees to report in to work and sign out). ETS operators belong to the Amalgamated Transit Union (ATU) so any duty other than “operating a bus” is not in their job scope. In other words operating a bus is the only duty they are getting compensated for other than thirty minutes for

their annual performance evaluation once per year. Operators are expected to know what is going on in the organization yet the current system is designed in a way that the majority of the tools would have to be used on their own time. There is an ongoing communication dilemma regarding how to reach operators and how operators are able to reach administrative employees.

Research findings will recommend key communication tools that will provide operators with a unified vision and direction, accurate feedback channels which will "connect" them to the organization. Operators are the front line staff and it is crucial that they have accurate information to communicate to the general public and sense of inclusiveness in the organization which aids in their adoption of organizational culture and vision. This research will also provide insight to other transit systems and other organizations with mobile workers as there appears to be an absence of internal communications research that focuses on peer to peer communication.

Research Question

What communication tools can be implemented in the ETS garages in order to enhance two-way communications between operators and administrative/management?

Research Objectives

1. To determine the effectiveness of current ETS internal communication tools that transit operators are using personally and professionally.
2. To determine transit operators satisfaction level with the various levels of information.
3. To determine transit operators satisfaction with feedback process.

This research paper will attempt to answer the research question by validating the importance of the research question in the literature review section, and then describing the research design and methodology to explain why the instruments were chosen. The discussion section of this paper will explain the key findings and finally the recommendation section will provide suggestions to improve the two way communication process among employees.

2.0 Literature Review

Organization communication is not a new study but has recently achieved recognition as a field of academic study. The growth of this field can be attributed to the demand of organizational needs and concerns. “Views of organizational communication can be categorized as those that view organizational communication as one aspect of an organization versus those that see it as the underlying basis of the organization itself” (Baker, 2002, p. 2). In previous years, managers have spent a significant amount of time communicating in one form or another such as meetings, face-to-face discussion, memos, e-mail, and reports. In today’s environment, there are more communication tools available and there has been a significant increase of employees being geographically dispersed, which means more than one communication tool needs to be used to ensure messages reach all employees. Communications is typically divided into internal and external communications. Internal communications can flow upward (front-line to management), downward (management to front-line), vertically (between hierarchically positioned persons and involving both downward and upward communication flows), laterally (communication among persons who do not stand in hierarchical relation to one another) or diagonally (communication between workers located in different functional divisions).

Effective internal communications is crucial to the success of every organization, yet it is often a neglected discipline. With the development of e-mail, the internet and intranets, and social media it could be assumed that managers within organizations can effortlessly communicate to employees, mainly through e-mail. Employees should also be able to communicate peer-to-peer (lateral communications), keeping them "connected" to the organization. However, there are hundreds of organizations that have employees who do not have a stationary workspace due to the mobile nature of their work. This mobility hampers the employee's ability to be connected to the organization through electronic interfaces at traditional, stationary workstations.

Communications is a diverse and fragmented field as evidenced by the relevant literature located in textbooks, peer reviewed articles, popular business literature, and organizational internal communication reports. Research from these sources is mostly quantitative and based on case studies. About half the literature sources (excluding theory literature) that were gathered for this study were published in the last two years and the remaining sources were published in the last three to five years. The theory literature relevant to this study dates back over twenty years. Authors ranged from marketing research companies to communication professionals to experts (professors) in the communications field.

The literature review will include a discussion of the theoretical framework and opposing theories, the key themes of internal communications discovered in the literature, a summary of the findings of previous research studies, and a discussion of the gaps in the literature that will validate the importance of this study.

2.1 Theoretical Framework

Communication used to be about "traffic" and "military" aspects of life. But the definition of communication has changed over the last decades with the growth of electronic media (Craig, 2000, p. 127). Communication is now "defined as an interactive process that performs essential functions in every field of social practices…and includes…communication in business, political communication, mass communication…" (Craig, 2000, p. 128).

There are many interrelated theories that explore organization communications. Some of these theories deal with media and information richness, social influence, media symbolism, situation factors, social presence, critical mass, and communication genres. These theories are categorized into three conceptual areas: "first, factors that enable and /or motivate the selection and use of a particular channel: second, the nature of the use itself: and third, perceptions derived from that use" (Carlson & Zmud, 1999, p. 153). It is generally theorized that "more experience (use) will lead to higher richness perceptions, studies examining aspects of this relationship have provided mixed empirical support and have even suggested paradoxical effects for experience" (Carlson & Zmuk, 1999, p. 154).

Many new communication tools have been introduced or have increased in use in the last 15 years so while the theory provides basic guidelines, it is important to evaluate how the different technologies have impacted communication between people. Different technologies can affect how a message is conveyed. It is crucial to understand the potential effects in order to effectively communicate with employees, especially when employees have access to varying technologies. One theory that can explain and help with the understanding of these issues is media richness theory.

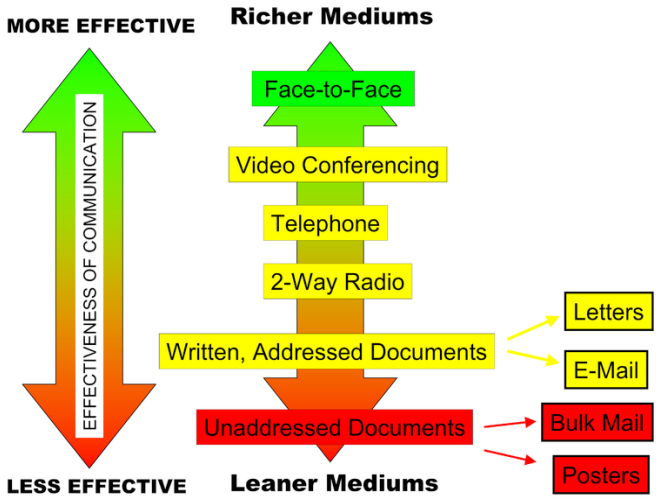
2.1.1 Media Richness Theory

Richard L. Daft and Robert H. Lengel introduced Media Richness Theory (based on information processing theory) in 1984 to describe and evaluate communication mediums within organizations. The essence of their theory is that the medium increases in richness as the learning increases (Lengel & Daft, 1989). Daft and Lengel define richness as "the potential information-carrying capacity of data (1984, p. 196). Dennis et al summaries the foundation of media richness theory as

> (a) media differ in "richness," with face-to-face communication being the richest, whereas other media capable of sending fewer cues (e.g., CMC [computer-mediated communications]) are "leaner" and that (b) performance improves when people use richer media for equivocal tasks (when there are multiple interpretations of available information) and leaner media for nonequivocal tasks. (Daft & Lengel, 1986; Daft, Lengel, & Trevino, 1987)

Daft and Lengel have written several additional articles on Media Richness Theory and this theory has continued to be studied by other communication scholars. Table 2.1.1 illustrates Daft and Lengel's explanation of Media Richness Theory.

Table 2.1.1 Media Richness Theory Diagram



"Media Richness Theory Diagram" by Tntdj – Creative Commons (CC).
Source: Daft, Lengel, and Trevino (1987)

Media richness theory is also known as information richness theory which was originally proposed as a prescriptive model. It explained how information processing requirements (e.g., uncertainty and equivocality reduction) had an effect on communication channels (e.g., face-to-face interactions and written memos) which were essential for organizational effectiveness (Daft & Lengel, 1984, 1986). Eventually the theory became descriptive by using testable hypotheses about how individuals actually perceive and select media, rather than about the implications of these choices for effectiveness (Daft et al., 1987; Trevino, Lengel, Bodensteiner, Gerloff and Muir, 1990). Daft et al. have used the theory to predict that "[m]anagers... will use face-to-face communication when equivocality is high" (1987, p. 359).

Media richness theory states that all communication channels possess certain characteristics that make them more or less rich, and one main purpose of choosing a communication medium is to reduce the equivocality of a message. If a message is equivocal, it is unclear and thus more difficult for the receiver to decode (Markus, 1994). One of the outcomes of this theory is to help address the communication challenges facing organizations, including

unclear or confusing messages, or conflicting interpretations of messages (Daft & Lengel, 1986). “The more equivocal a message, the more cues and data needed to understand it, and media richness theory places communication mediums on a continuous scale that represents the richness of a medium and its ability to adequately communicate a complex message” (Carlson & Zmud, 1999, p. 155). For example, a straightforward message, such as asking about a location of a meeting could be sent by e-mail but a more detailed message about a complex project that involves several stakeholders would be better communicated through face-to-face interaction. Daft and Lengel emphasize that message clarity may be compromised when multiple departments are communicating with each other, as departments may be trained in different skill sets or have conflicting communication norms (1984).

Other communication scholars have tested the theory in order to improve it, and more recently media richness theory has been retroactively adapted to include new media communication mediums, such as improved video and online conferencing (Daft et al., 1987). “Although media richness theory relates to media use, rather than media choice, empirical studies of the theory have often studied what medium a manager would chose to communicate over, and not the effects of media use” (Dennis & Kinney, 1998, p. 257). Newberry built on the work of Daft, Lengel, and Trevino and constructed the table below (Table 2.1.2) which

> attempts to place seven different types of communications media in a three-position matrix (high, medium, and low) expressing the media's performance or its ability to carry: feedback, multiple cues such as body language, message tailoring, and emotions. (2001)

Table 2.1.2 Communication Media

Media Rating (across) Criteria (down)	High	Medium	Low
Feedback	Face to Face Video Conferencing Synchronous Audio Text Based Chat		E-mail Threaded Discussion Asynchronous Audio
Multiple Cues	Face to Face	Video Conferencing	Synchronous Audio Asynchronous Audio Text Based Chat E-mail Threaded Discussion
Message Tailoring	Face to Face	Video Conferencing Synchronous Audio E-mail	Text Based Chat Asynchronous Audio Threaded Discussion
Emotions	Face to Face	Video Conferencing Synchronous Audio Asynchronous Audio	Text Based Chat E-mail Threaded Discussion

Another theory which was independent of media richness theory, but gradually became interlinked in many aspects, with the result that both theories are now commonly used together, is social presence theory (Carlson & Davis, 1998). This theory explains the context around a communication medium that might have an impact on media choice. According to Carlson and Davis research findings it was determined that the level of management impacts the media selection. In the findings, it was discovered that middle management made choices based on media richness/social presence criteria whereas senior management choose media based on access and ease of criteria (1998, p. 335).

2.1.2 Opposing Views

Opposing theorists criticized media richness theory by viewing it as deterministic. Markus argued that social pressures can influence media use much more strongly than richness, and in ways that are inconsistent with media richness theory's key tenets (1994). Most studies testing media richness theory have examined the perceptions of media fit by surveying the media choice of message senders, not by examining the actual performance effects of media use by sender and receiver (Dennis & Kinney, 1998). Dennis, Kinney and Hung found that "participants were able to recognize differences in media richness, matching richness to task equivocality did not improve decision quality, time, consensus, or communication satisfaction for all-male or mixed-gender teams" (1999, p. 428). Dennis and Valacich propose that there are five media characteristics that can affect communication (1999) as per Table 2.1.2.

Table 2.1.2 Relative Trait Salience of Selected Media

	Feedback	Symbol Variety	Parallelism	Rehearsability	Reprocessability
Face-to-face	high	low-high	low	low	low
Video conference	medium-high	low-high	low	low	low
Telephone	medium	low	low	low	low
Written mail	low	low-medium	high	high	high
Voice mail	low	low	low	low-medium	high
Electronic mail	low-medium	low-high	medium	high	high
Electronic phone (chat")	medium	low-medium	medium	low-medium	low-medium
Asynchronous groupware	low	low-high	high	high	high
Synchronous groupware	low-medium	low-high	high	medium-high	high

Dennis and Valacich, 1999, p. 3.

One of the main criticisms of media richness theory is that it was developed before the widespread use of the internet. The internet introduced new media such as email, chat rooms,

instant messaging, and social media sites. Some theorists have questioned its ability to accurately predict what new media users may choose. Channel expansion theory proposed by John R. Carlson and Robert W. Zmud addresses some of the media richness theory criticisms. The theory proposes that "as communication participants acquire relevant experience…they develop associated knowledge bases that may be used to more effectively both encode and decode rich messages on a channel" (1999, p. 155). They go on to state that the individuals who build their knowledge base of these channels through experience, will perceive the channel as increasingly rich (Carlson & Zmud, 1999). El-Shinnawy and Markus argue that media richness theory initially evolved without direct consideration of the new media (1992), but they have been able to retroactively fit into the theory's framework (Daft et al., 1987; El-Shinnawy & Markus, 1992).

2.2 Key Themes/Issues

The research articles discussed within this review of the relevant literature fell within the discovery paradigm and generally used qualitative research to support their findings. This research study uses Media Richness Theory as the theoretical lens. The review of several relevant articles identified some key themes and questions that are central to internal organizational communications.

1. What is internal communications and why should organizations make internal communications a priority?
2. What are the most important and most valued internal communication tools?
3. What are the key issues of "non-wired" employees in a diverse and growing workforce?

Importance of Organizational Internal Communications

"The study of organizational communication is not new, but it has only recently achieved some degree of recognition as a field of study" (Baker, 2002, p. 1). Communication inside organizations is recognized as a critical factor in organizational performance, yet internal communications is a rather "neglected" discipline (Welch & Jackson, 2007). "Despite the importance of internal communication, it is said to be an under-researched field" (Ruck, 2011, p. 1). Stein argues that "once regarded by administrators and managers as a relatively minor part of an organization's public relations practices, today the changing and growing field of employee communications has become the subject of countless articles in both communication and business publications" (2006, p. 249).

In order for employees to effectively communicate to other employees, managers need to understand the importance of this field. "Most senior leaders saw internal communication as an output and 'soft stuff that is nice to have'. Most did not fully recognise the extent of their role in driving effective internal communication" (Ideashop, 2008, p. 4). There is a perceived lack of value for internal communications. The Government of Alberta reported that the four main reasons to communicate with employees are: "1. Provide information or direction. 2. Gather information (input, feedback, and learn about issues). 3. [Create] a positive, collaborative work environment. 4. Offer support" (2008, p. 3).

Another concern with internal communications is the flow of information. "Watson Wyatt research in 2006 showed employers devote far more resources to top-down communication (management, emails, newsletters) than to upward or two-way communications (employee meetings with senior executives, focus groups)" (Ideashop, 2008, p. 5). Employee

satisfaction with upward communication tends to be lower than their satisfaction with downward communication. This could be due to:

1. Fear of reprisal – people are afraid to speak their minds
2. Filters – employees feel their ideas/concerns are modified as they get transmitted upward
3. Time – managers give the impression that they don't have the time to listen to employees. (Baker, 2002, p. 9)

Although both vertical and horizontal communication continue to be important, these terms no longer adequately capture communication needs and flows in most modern organizations as most employees are geographically dispersed (Baker, p. 8); therefore organizations may need to focus more on lateral or diagonal communications.

Internal communications should be addressed by organizations because if employees know what is going on in the organization this information sharing has the potential to increase productivity. "Sharing information with employees is a critical means of engaging staff and deriving maximum productivity" (Kumar, 2012, p. 7). White et al. states when employees have access to information they will feel important and respected which will increase morale (2007, p. 16). As part of understanding internal communications, it is also important to understand the quantity of information to communicate. "Communicating too little creates a vacuum that causes distrust and speculation. However, too much information can result in information overload or the paradox of plenty in which an overabundance of information is ignored" (White et al., 2010, p. 7).

Organizations feel communicating to the customers is important and they typically develop external communication strategies which are usually included as part of the business strategic planning. Yet, organizations do not prioritize internal communications in the same way.

Internal communication "planning" is a typically a reactive response and is considered a priority if it is around upheavals like major corporate or organization change, layoffs and downsizing, or technological change.

> Determining what should be communicated to staff, when it should be communicated, and how it should be communicated is often left up to the decisions of individuals made when there seems to be a need. Internal communication strategies are developed, reactively, when there is a crisis or major event that clearly requires addressing communication issues. (Bacal, 2012)

Organizations need to be proactive and develop internal communication strategies. Developing a communication strategy for hard-to-reach teams follows the same process as with any other employee segment. "It requires careful planning and channel and resource analysis" (Richmond, 2011, p. 10). The key parts of developing an internal communications strategy for any employee segment are:

1. Know your demographics.
2. Understand how people spend their working day.
3. Identify how people prefer to interact.
4. Establish when and where you can communicate face-to-face.
5. Understand what people are interested in.
6. Learn who people trust. (Richmond, 2011, p. 10)

Organizations choosing not to address internal communications as part of their corporate strategy could have many negative implications. A study by Tariszka-Semegine revealed that the complete or partial lack of internal communication presupposes the following negative effects:

- losing confidence towards managers

- low level of identification
- high level of fluctuation
- spread of informal communication (gossip). (p.94)

Internal communications strategies are beneficial to organizations. If organizations are proactive about addressing internal communications organizations may see an increase in productivity due to the employee feeling valued which leads to employee being engaged in their job duty and/or project. One simple way to make employees feel valued is to share information and allow employees to provide feedback.

Internal Communication Tools

Most sources that conducted research on preferred communication tools rated face-to-face communications at the top. “While email is efficient for information exchange, the preference for communication among all groups of employees is still face-to-face interaction (White et al., 2010, p. 17). Employees ranked face-to-face communication as the best tool for all three levels of an organization (Stein, 2006, p. 252). “Most employees appreciate face-to-face communications…it helps people (especially front-line staff) feel recognized, valued and connected to the organization” (Crescenzo, 2012). Dennis and Valacich argue that “face-to-face communication is not always the "richest" medium for communication. The "best" medium or set of media depends…on a given situation” (Dennis & Valacich, 1999, p. 8).

Additionally, employees want to hear the messages face-to-face from managers. “Meetings, despite being acknowledged as time-consuming, were surprisingly valued as a channel for feedback and providing face time with top managers” (White et al., 2010, p. 2). “Research conducted with Government of Alberta employees showed that the majority of

employees want to hear about new developments from their manager/supervisor" (Government of Alberta, 2008, p. 4).

The second communication tool that people preferred was email. A comparison of effectiveness reveals that four communication tools – face-to face meetings, email, written publications, and telephone – all ranked highest at the department level followed by the regional level, and then by the organization level (Stein, 2006, p. 260). "Electronic channels, if used thoughtfully, can flatten the traditional, hierarchical structure of internal communication and can give employees at all levels of the organization the sense of hearing things first-hand, from the top" (White et al., 2010, p. 22). While email is highly convenient for both sender and receiver, it is an impersonal medium and lacks the richness of other information sources (Markus, 1994). Kelleher describes that print is effective for one-way messages because they do not require feedback (2001). He goes on to state for two-way communication that the Internet is effective as the sender can monitor the environment and interpret feedback (2001). Calder Bateman Communications Ltd. report states that even though ETS set up intranet kiosks in the garages to try to "connect" the operators to the organization, "there was overwhelming negative sentiment around the intranet kiosk" (2005, p. 35). While the use of the intranet was not the highest-ranking communication tool, Stein discovered its use to build community is most effective at the organizational level with the departmental level being the lowest (2006, p. 260).

When organizations are dispersed there are difficulties with communicating to employees therefore the choice of communication tool is important. Crampton argues that when dealing with certain information in a dispersed organization, face-to-face conversation makes it possible to sort out any kind of confusion but when using electronic means it is difficult to resolve misunderstandings quickly (2002). Crampton's research suggests working from different

locations “increases the likelihood that people will have different information and not know it” (2002, p. 357).

Communication tools effectiveness is dependent on understanding the use for which they are intended. According to Goldhaber, the key to determining which communication tools to use is to understand your organization, especially your employees. Goldhaber “found that an employee’s primary needs include, first, more information about personal, job-related matters, and then, information about organizational decision making and a greater opportunity to voice complaints and evaluate superiors” (Ruck & Welch, 2011, p. 3). “Research into employee preferences for channel and content of internal corporate communication is required to ensure it meets employees’ needs” (Welch & Jackson, 2007, p. 187). This is reinforced by Uusi-Rauva and Nurkka who state that “little research has focused on finding out what employees consider important in the internal expert communication process” (2010, p. 303). Bacal argues that the “behavior of managers and the decisions that are made are the real communication tools” (2012). Bacal proceeds to explain that “formal” communications relay the message to employees while decision-making and actions send a conflicting message. Bacal recommends communication tools need to be matched to the goals of the organization and to develop a description of how each tools will be used (2012).

Getting feedback from employees is another key communication tool. Carole Matthews, representing Inc.com magazine, interviewed Steve Lassig who is the cofounder of Technology Professionals Corporation. Lassig was frustrated by companies “that didn’t factor employees’ opinions into business decisions” (2003, p. 1). Lassig asked for feedback from employees by implementing a voting system. Voting makes employees feel involved and “even people who don’t agree with the final decision, the fact that they were able to participate in the process is

good" (Matthews, 2003, p. 2). Lassig attributes the success of this to "taking the time to ensure employees are fully educated about the decisions they're asked to make" and ensure they have an "opportunity to discuss the information with their colleagues (Matthews, 2003, p. 2).

Donald Pelz found that most effective supervisors had power which was gained by communicating directly with employees and asking for feedback. This is commonly referred to as the Pelz effect which is about ensuring that supervisors are informed about organizational issues/changes before employees in general, and then communicating these issues/changes to their employees, which reinforces their position of power (Tariszka-Semegine, 2012). "When the supervisor is perceived as having power, employees have greater trust in the supervisor, greater desire for communication with the supervisor, and are more likely to believe that the information coming from the supervisor is accurate" (Tariszka-Semegine, 2012, p. 90). Foehrenbach and Rosenberg (1982) conducted a survey of 32,000 employees and found quite a high level of satisfaction with downward communication. Seventy-one percent stated that his/her organization informs its staff well; 65% agreed that (s)he gets enough information for his/her work; and 51% agreed that downward communication was accurate and honest.

Use of communication technologies has increased dramatically over the past decade, which has lead to communication overload. It is a common assumption that because communication is generally seen as a good thing, the more communication the better. But communication overload is a real problem – and the research literature concludes that what is needed is better, not more, communication (Richmond & McCroskey, 1992; Conrad, 1994).

Communication Issues of Non-Wired Employees in a Large Diverse Workplace

Non-wired employees are mobile and do not usually have a work space. A research study by Calder Bateman Communications Ltd. concluded that a very large part of ETS operators spend less than fifteen minutes per day at their work site (2005, p. 10). Non-wired employees are hard to reach and their behaviours are harder to influence. According to Calder Bateman Communications Ltd. ETS identified the following barriers:

1. The outdated facilities and floor plans are often a barrier to effective visual communications in a growing workforce.
2. ETS, including Disabled Adult Transit System (DATS) and Light Rail Transit (LRT), is comprised of five facilities [as of 2005] that are located throughout the city. This makes it difficult to monitor the flow and response of communication tools at each site.
3. There is a high volume of text-based information and as a result, distinguishing between old and new information is difficult.
4. ETS estimates that 4% of operators do not ever enter their work place. (2005, p. 26)

Organizations need to know their employees. This "is relevant any time but it's especially true for non-wired employees. The nature of their jobs demands them to pay attention to the customer...We can't waste their time sending them everything we create" (Crescenzo, 2012). For example in the case study of Washington Metropolitan Area Transit Authority (WMATA), Redshaw and Mandable realized that one size did not fit all. They discovered that to effectively communicate, the organization needed to ensure that the "mechanics, technicians and bus and rail operators [were receiving] more of the tactical key messages" rather than the strategic goals of the organization (2007). The other key element to communications is to ensure the messaging is appropriate to your demographics. "According to a 2006 study in the United

Kingdom, managers' reliance on buzzwords is the number one gripe employees have about their bosses. The report shows 97 percent of them would like their managers to communicate more clearly" (Government of Alberta, 2008, p. 4).

When organizations are diverse, it is more difficult to ensure that the right information gets to the right employee. Government of Alberta research indicates that employees want to "know what the information means to them and their work" (2008, p. 4).

> Effective communication in the workplace…hinges on establishing what communication experts call "mutual knowledge". Mutual knowledge is knowledge that the parties to a communication share in common and know they share in common…when there is mutual knowledge [common ground] communication is understood as intended. (Crampton, 2002, p. 356)

Working in a dispersed workplace hinders the ability to create this "common ground". Yet this knowledge is crucial in successful communicating to all employees.

The literature reviewed for this study was limited as it relates to the issues of two-way communications with "non-wired" employees but the research available indicated some issues as that there are too many communication tools (information overload), messages are not written for the audience receiving it, and mobile/non-wired employees do not have time to read messages due to the mobile nature of their work.

Literature Review Summary

Media richness theory states that all communication channels possess certain characteristics that make them more or less rich, and one main purpose of choosing a communication medium is to reduce the equivocality of a message. In order to reduce equivocal

messages, organizations need to understand what employee communication needs are, especially for mobile workers. Figure 1 illustrates the six-step model that defines what the six common questions are that employees need to have answered in order to be productive and engaged.

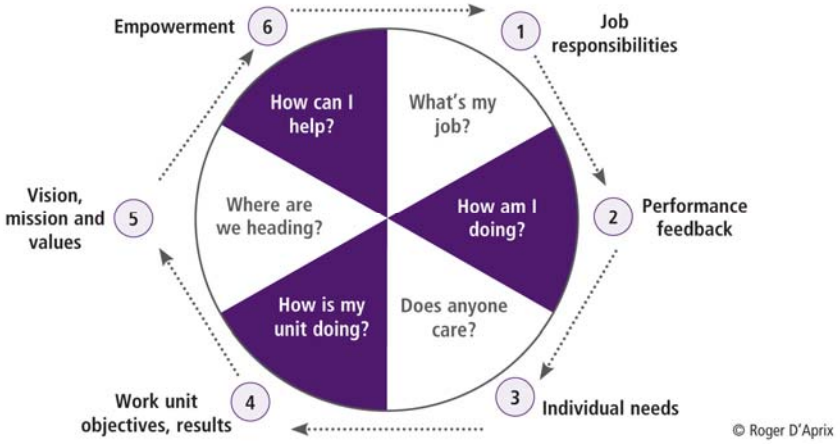


Figure 1 Diagram showing hierarchy of employees' communication needs. From "The face to face communication toolkit: Creating an engaged workforce" by R. D'Aprix, 1996, *IABC*

The literature has indicated that internal communication has been recognized as a strategic focus for business communication, second only to leadership concerns (White et al., 2007, p. 3). Organizations have changed over the years and have been emphasizing greater teamwork. "Lateral communications between workers in different functional areas is becoming a bigger concern" (Baker, 2002, p. 9). The literature reviewed appears to indicate that internal communication is significant to the success of organizations yet there seems to be a limited amount of research literature of how to communicate laterally among peers.

Communications experts (i.e. professors) argue that internal communications is important; yet there was little found in the relevant communications literature about the role of communication tools that can be implemented in large diverse organization in order to ensure non-wired employees are able to direct and receive communications from wired staff. There

were several sources which gave specifics, but they addressed “wired”, not “non-wired” employees. There appears to be a limited amount of literature on internal communication processes between wired employees (administrative/management) and non-wired staff (front line employees) and how management should communicate with non-wired employees. Calder Bateman Communications Ltd. report did give specifics of how to communicate to operators but the research was conducted in 2004 before the proliferation of many new communication media and devices. The research, key recommendations, and findings are outdated because of employee turnover (new culture) and new communication technologies (i.e. mobile data terminals, smart phones and social media sites). Additionally, ETS management and the internal communications officer were unable to find the final copy draft of the report. Calder Bateman Communications Ltd. report provides good background and a starting point of how to continue the research. Even though the research is outdated, there is a wealth of background information that can be used for continued research.

According to all the major studies in this area of communications, face-to-face communications by managers and email communications are ranked the top two preferred communication tools. However, the research literature revealed a lack of study on how to use face-to-face communications in a large, diverse organization with “non-wired” employees working shift work. Additionally, non-wired employees typically do not have access to work computers so even if they were provided a work email address, the issue is when would non-wired employees check their emails.

The literature review shows that organizations need to understand employees, especially in diverse organizations. However the sources that conducted research failed to ask specific questions to fully understand employee’s communication habits (i.e. cultural background).

Understanding the diversity of the organization will help to understand which communication tools will be the best suited. Additionally, the research generally found that in order to effectively communicate to employees, they need to feel valued in the organization (i.e. through feedback channels), messages need to be delivered through the right tool, and a greater emphasis needs to be put on having face-to-face conversations with the operators.

3.0 Research Design/Methodology

The research design consisted of conducting structured observations in the bus garages and distributing a questionnaire. This research approach fits within the discovery paradigm. The research goals involve descriptive claims about the ETS operators' communication processes that describe, explain, and predict effective communication tools between operators and administrative staff. The design is a case study and will attempt to determine aspects of transit operators' connectivity to the organization and will provide recommendations regarding communication tools that will enhance two-way internal communications between operators and administrative staff.

3.1 Participants

The study population was defined as active (not on short or long term disability) ETS operators who had to report to any of the four bus garages (Centennial, Ferrier, Mitchell, or Westwood) LRT garage (D.L. McDonald), ETS transit centre or an ETS bus stop. DATS operators were excluded from the sample due to time constraints on the researcher. No other

restrictions on other demographics (age, gender, language, experience etc.) were implemented regarding participation in the study.

Operators were randomly selected by visiting each garage at the same time in the morning and afternoon so only those operators working those particular shifts were able to participate. Questionnaires were distributed to operators who wanted to participate. Questionnaires were also left on the counter at the Dispatch desk so if researcher or peer was not around to distribute questionnaires, operators were still able to participate.

ETS operators were easily spotted during the structured observation research. Operators wear unique uniforms which distinguishes them from ETS inspectors or ETS Dispatchers.

3.2 Data Collection Techniques

3.2.1 Structured Observation

To gain insight regarding the daily communication interactions within the garages, unobtrusive testing was conducted at four (Centennial, Ferrier, Mitchell, and Westwood) out of the six garages to observe operators' processes for reporting in and reporting out for their shift. As noted earlier, DATS operators (report to Percy Wickman garage) are not part of the sample group; therefore, this garage was omitted. D.L.MacDonald (LRT motormen) have 33 active operators resulting in a sample size that would be too small to observe, and consequently, was not included in the unobtrusive testing.

The objective of the observation was to provide an accurate picture of what the operators' processes are when they walk into the garage. It is acknowledged that operators may have altered their "normal" behaviors/processes once they knew they were being observed, but this

was not anticipated to be the case as the behaviour routines observed were their normal daily reporting tasks. “Normal behaviour” was defined by the processes listed on the structured observation form (Appendix A).

Supervisors at each garage were notified with a letter of intent (Appendix B) in order to address any potential concerns. Supervisors were provided dates and times of the observation period and they communicated this information to operators. During the observation, there were no concerns noted, such as operators not wanting to be observed. If any operators wanted to be excluded for observation, they were advised that he/she could approach the researcher and notify them of their "non-participation" status. In the event this occurred, any information gathered prior to being notified would have been deleted from the recorded observation and the researcher would discontinue observing the subject. A checklist for the structured observation (Appendix B) was used to record the processes and to minimize bias. The observation was conducted at the same time each day to further minimize bias.

3.2.2 Questionnaire

To further understand communication processes, a questionnaire (Appendix C) was distributed by the researcher, peers or supervisors to ETS operators who wanted to participate. Questionnaires had to be personally distributed to operators as the researcher felt the response rate would be higher with the active involvement of the researcher, supervisor or peer. Many of the operators filled out the survey prior to starting their shift. The researcher went to each of the four transit garages (Centennial, Ferrier, Mitchell and Westwood) from 4:00 a.m. to 9:30 a.m. and again to all four of the transit garages from 1:30 p.m. to 3:30 p.m. to distribute the questionnaires. These times were picked as this is when the majority of the operators start their

shift. Once the researcher left the garage, additional questionnaires and a secure box (to place completed questionnaires) were placed on the Dispatch counter in each of the four bus garages to provide operators, who missed the distribution, an opportunity to participate in the research study. The Dispatch counter is the Dispatchers' work area. Dispatchers' are located behind the counter and the counter has the digital sign in machine where all operators sign in prior to the start of their shift. D.L. MacDonald garage was not included in the unobtrusive testing but they were included in the questionnaire process. Questionnaires were distributed to the LRT motormen directly as there are only 33 employees that report to D.L. MacDonald garage so it was simple to reach all motormen. The questionnaire was designed to determine the communication tools the operators use personally and professionally, as well as their communication preferences.

At the time the questionnaire was distributed, ETS had 1,483 active full-time operators and 31 active part-time operators for a total of 1,514 operators. These numbers do not include DATS operators as they were not part of the sample group. The average age of operators is 53.25 and the average years of service are 17.45. To ensure reliability and validity, 307 questionnaires had to be completed. There were 335 questionnaires returned and four out of these were invalid. Two respondents were DATS operators, which did not fit within the sample group, and the other two did not provide enough demographic information to conduct further analysis. Based on a population of 1,514 and a sample of 331, the margin of error is 4.76%; therefore, giving a confidence rate of 95.24%.

A questionnaire was chosen to reduce bias and ease of distribution due to the size and geographic distribution of the organization. Respondents put the completed questionnaire in a secured box at the Dispatch counter, a central location where operators sign in for their shift.

This area is monitored 24 hours a day. Some respondents gave their completed questionnaire to the researcher, supervisor or peer to put in the box. Additionally, a couple of the garages provided envelopes to operators to provide additional confidentiality.

Even though the questionnaire was piloted by four operators and three supervisors, there were still a few problems in the questionnaire design. The questionnaire consisted of four pages, and considering the work environment there were too many questions. Some of the demographic questions could have been omitted. The feedback question Q4iii. was not numbered correctly and there were some respondents who did not answer. There were a few questions that were consistently not answered so it can be assumed that respondents were confused as to what was being asked. In Q2i: sub questions - q,r,s were not answered due to possibly not understanding the context of the tool. Another fault was related to time. The cover page indicated that the questionnaire would take about 20 minutes but it was observed that it was taking operators about 10 minutes to complete the survey. The over-estimation in time could have deterred some operators from filling it out as they may have felt that 20 minutes was too long (i.e. could not be completed before/after their shift, or unwillingness to commit to that estimated time).

3.2.3 Informal Discussions

Throughout the course of this research projects there were many informal discussions that took place which provided rich information. Once the research was completed and analyzed, the researcher felt it was important to validate information in the recommendations area with the divisional supervisors to ensure that the recommendations were not currently being implemented in the garages and to validate some of the key ETS information as it related to the supervisors. The divisional supervisors each manage one of the four bus garages and they are in direct contact

(along with the general supervisors) the most with the operators. The researcher had a two hour informal interview with two of the four divisional supervisors. The conversations were informal (casual) therefore the information will be used to supplement the questionnaires and the structured observation data.

3.3 Data Collection Procedures

Once questionnaires were collected from the garages, the raw data was entered manually into an Excel spreadsheet. Open ended questions were coded into general categories. The data was cleaned and then imported into Statistical Product and Service Solutions (SPSS), which is a data collection software program, for analysis. The research results could not be triangulated because of time limitations but if a third research method were to be completed, it would be in-depth interviews with operators and divisional supervisors (bus garage supervisors) to further look at enhancing two way communications.

3.4 Method of Analysis/Model

Percentages were calculated to give a broad overview of the data findings. To find correlations between covariates it was determined that finding p values was the appropriate method for the type of data collected. The questions that were chosen to analyze were based on the research objectives stated at beginning of this paper.

The following model was chosen for analysis of the data. Let l be the number of the question in the survey, j be the importance assigned to an answer, and k be the number of the answer to the question. Then for answer k to question i we define p_{ijk} to be the cumulative

probability the index of how often the tool is used or (how effective it is found to be), assigned to this question by randomly chosen respondent, to be less or equal to *j*. This is also applied to the questions of the importance of information, satisfaction level of information provided, what personal tools are being used and which social media sites are being used. We then model this probability in the following way:

$$ln(\frac{p_{ijk}}{1-p_{ijk}}) = \alpha_{ijk} + \beta_{ik}x.$$

Here *αijk* are the intercepts for particular answers. The covariates *x* are in binary form (gender, English as first language) or continuous (age, experience as ETS employee).

The coefficients of the model are estimated by maximum likelihood method, and the standard errors of the coefficients are obtained from Fisher information matrix. Then for each answer can be computed a p-value for the significance of the corresponding coefficient *βik*.

The model was chosen according to the following criteria:

1. The p-values to be significant.
2. To include as many variables as possible (but satisfying p. 1)
3. When models with equal number of parameters both satisfy p.1 and p.2, Akaike information criterion (AIC) was used to determine the best model. AIC is a measurement that indicates the fit of proposed model against the number of parameters being fitted and the small values are desirable.

p-Value

The p-values are computed for each coefficient. The significance is determined as follows:

p-value higher than 0.1– no significance (N);

p-value between 0.1 and 0.05 – low significance (L);

p-value between 0.05 and 0.01 – significant (S);

p-value between 0.01 and 0.001 – highly significant (H);

p-value less than 0.001 – very high significance (VH)

Coefficients

Age: Positive coefficients on age means that older employees prefer the tool/more effective. Negative coefficient on age means younger employees prefer the tool/more effective.

Gender: Positive coefficients on gender means that on average the male respondents consider the tool as more often used by them (or more effective) than the female respondents. Negative coefficient on gender means the opposite – that the female respondents find the tool to be more used by them (or more effective).

Language: Positive coefficient on English means that respondents with English as first language use the tool more often (or find it more effective). Negative coefficient on English means that those with English not their first language find the tool more used (or more effective).

Experience: Positive coefficient on experience means that more experienced respondents use the tool more often (or find it more effective). The experience is measured not in years but as the clusters in the survey answers, e.g. Exp=3 means experience between 3 and 5 years. This is relevant here despite the time intervals for different levels are not of equal length. We should expect much bigger differences between the operators with 1 and 3 years of experience than

between operators with 20 and 22 years of experience. Operators learning curve of understanding the communication tools would be quite different from working one year compared to three years. Operators with 20 to 22 years will not be learning anything new and it they do it would be very limited due to the experience they have with the communication tools.

Report Location: Centennial Garage was used as the base location in order for the comparison analysis. A base location was needed in order to determine the significance when compared to other garages. Centennial Garage was chosen as the base due to the fact that it is the newest garage so communication tools are displayed in an organized fashion. Positive coefficients on location means when compared to Centennial Garage, the tool is used more/more effective. Negative coefficient on location when compared to Centennial Garage means it is used less/less effective.

Interactions are sometimes not easy to interpret but here the situation is simplified by the fact that English as first language does not change with time, and Gender usually also does not change. So their interactions with experience can be interpreted as additional Gender (or English) effect on the change of frequency of use of the tool (or opinion about its effectiveness) with time.

4.0 Findings

4.1 Structured Observation Results

Each of the four garages produced similar results in regards to what communication tools the operators used when they start their shift. About 60% of the operators sign in at the Dispatch

desk and then head to their bus. The other 40% sit in the operators' lounge and visit with their peers until they have to sign in at Dispatch. A difference between the garages is Mitchell and Centennial have a large area by the Dispatch area where several operators can communicate instead of going into the operators lounge. Ferrier and Westwood operators go into the operators' lounge as the space is limited by the Dispatch area.

The structured observation results do not require further analysis due to the low numbers of operators using the communication tools before their shifts. The researcher ended up receiving richer information by speaking "informally" to the operators. One of the key observations happened at Westwood Garage. The day the researcher went to observe the operators at the garage was the first day of the ETS fare increases for 2013. Operators did not know about the fare increase and there was a lot of informal discussion of how they found out through the media. There was a letter size poster on the bulletin board that indicated the fare changes. During the researcher's visit, it was observed that only one operator looked at the poster over the two hour period. This experience was observed in one of the four garages; therefore, it would be difficult to predict if this would be the same experience in the other garages.

While observing, the researcher noticed other things that are important to the research even though it did not fit within the structured observation checklist. Some of these observations were either observed by the researcher or verbally stated to the researcher by the operators:

- Most operators communicate while they are in the lounge, a few have newspapers but will put the paper away once someone starts talking to them.
- ETS TV messages are old and they are difficult to read due to their placement (messages should be limited to a maximum number of characters).

- Garages have mailboxes but they are slotted according to A-Z not individual names.
- Bulletin boards have outdated information and they are not organized in a visually appealing way.
- Operators were not aware of a fare change which is important for their day-to-day job. There was a letter size poster up in the fare product display but only one operator looked at it during researcher's 2 hours of observation. This was observed in only one of the garages and as it was the last garage, the other garages were not observed.
- Operators are supposed to do a pre-trip inspection on their bus. There is information posted on the back of their seating area so they should be able to see the message posted which is usually service related changes or fare changes. The only way to monitor this is if someone follows them out to the bus to see if this task is being done.

4.2 Questionnaire Results

Demographics

Table 4.2.1 summaries the demographic breakdown of the respondents. Age, gender, language, years of experience and report location are the key demographic information that was collected in the questionnaire. Thirty-three percent of operators are between 45-54 years of age with 44% of operators with 3-10 years of experience. The majority of the operators are male (73%) and 79% of the operators surveyed indicated that English is their first language. The largest group of respondents report to Westwood Garage (30%) while the lowest percentage of respondents (18%) report to Mitchell Garage.

Table 4.2.1 Respondent Demographics, n=331

Age		
	Respondent	Percentage
<34	46	14%
35-44	71	22%
45-54	107	33%
55-64	88	27%
>65	13	4%
Gender		
Male	232	73%
Female	87	27%
English is First Language?		
Yes	258	79%
No	69	21%
Years of Experience		
	Respondent	**Percentage**
<1	31	10%
1-2	37	11%
3-5	74	23%
6-10	68	21%
11-15	32	10%
16-20	16	5%
21-25	11	3%
>26	55	17%
Report Location		
Centennial	74	22%
Ferrier	80	24%
Mitchell	60	18%
Westwood	94	30%
Other*	21	6%

*Operators reporting to more than one garage, D.L.MacDonald, on the road, or at a transit centre

Communication Tools Definitions

Below are definitions of various communication tools used in the garages as it pertains to how ETS uses the tools to communicate to the operators. The other communication tools are defined in Appendix D.

Digital Sign In Slip Message: Operators sign in at Dispatch, scan their ID card and a slip will print out which tells them their shift and route for the day. There is space at the beginning of this print out for messages.

ETS TV: Digital TV that is located in all operator lounges in the garages and in the ETS downtown offices. Messages are geared towards operators.

In Transit: External newsletter which provides general public information on what is happening in ETS, service change information, and what is upcoming. The newsletters are displayed near the front of the bus, in transit centres, and at select libraries. Each garage receives about 50 copies.

Operator Focus Group: Monthly meetings per garage where items are brought forward advise operators' of new projects or to seek operators' feedback. Every quarter a joint focus group is held that brings together operators from all the garages including DL MacDonald and Percy Wickman (DATS).

Running Board Message: Each operator takes a running board at the start of their shift which is specific to their route they are driving for the day. The route information is attached to a clip board and there is space at the end of the route information to add a message.

Table Top Display: Poster which is posted on a 3-panel display board. This display sits on top of a table typically in the operators lounge or near the Dispatch area.

Transit News: Internal newsletter which provides ETS employees information on what is happening within ETS/COE and what is upcoming. Copies are made available in each garage.

White Board Message: Movable white board where supervisors either write the message on the board or tape operation notices. The board is displayed in various areas of the garage.

Communication Tools Use and Effectiveness

Operators were asked to rate how often they used various communication tools in the garage to find or seek information. Operators were also asked to rate these tools in terms of how effective these tools were at conveying information to them. Between 316 and 328 respondents rated the use and effectiveness of each tool. The message on digital slip was identified as the most frequently used communication tool (79%). It has also been rated as the most effective communication tool amongst all others (80%). The other tools that were rated high for use and effectiveness were bulletin boards, Dispatcher, peers, running board and white board**.** The tools rated the lowest were intranet kiosk and Operator Focus Group (both at 42%). Table 4.2.2 shows the details of the use and effectiveness of the other tools.

Table 4.2.2 Communication Tools* Use and Effectiveness, n=316-328

	Use more than once per week	Very effective/ Somewhat effective	Not very/Not at all effective	Not aware of tool
Bulletin Boards	54%	79%	9%	0%
Immediate Supervisor	7%	48%	25%	1%
Other Supervisor	6%	31%	29%	5%
Dispatcher	55%	73%	11%	1%
Inspector	9%	48%	23%	2%
Peers	58%	73%	10%	2%
Focus Group	4% / 32%**	25%	42%	11%
City/ETS Website	12%	32%	33%	5%
Intranet Kiosk	7%	22%	42%	18%
ETS TV	26%	45%	27%	4%
Table Top Display	36%	60%	17%	8%
Running Board Message	79%	76%	7%	6%
Digital Sign in Slip Message	79%	80%	7%	3%
White Board Message	52%	70%	12%	9%
Transit News	11% / 74%**	46%	29%	6%
In Transit	10% / 66%**	41%	28%	6%
Amalgamated Transit Union (ATU)	4%	33%	32%	0%

* See Appendix D for all communication tool definitions.

**Monthly meeting or newsletter so rating once per month and higher were combined.

Further analysis regarding the frequency of usage for each communication tool, their effectiveness, and the level of access to each tool at home will be discussed in the following sections. The level of significance will be investigated for each covariate used in the model including Experience, Language, Report Location, and Age. Tables including candidate models, estimated coefficients, p-values, and the level of significance for each model are shown in Appendix E. Table 4.2.3 provides a summary of the significant, highly significant and very significant relationships of the use and effectiveness of the tools.

Table 4.2.3 Significant Relationships Between Use and Effectiveness of Tools

	Used the Most	More Effective	Interaction Coefficients
Immediate Supervisor	More Experienced	Less Experienced English as 2nd Language Centennial Garage Westwood Garage	N/A
Dispatcher	N/A	Less Experienced English as 2nd Language	N/A
ETS TV	Less Experienced	Less Experienced English as 2nd Language Mitchell Garage	As operators experience increases and if English is 2nd language, the effectiveness of ETS TV decreases
Table Top Display	Male	Less Experienced English as 2nd Language	As operators experience increases and if English is 2nd language, the effectiveness of table top decreases
Running Board	Less Experienced	Less Experienced English as 2nd Language	N/A
Digital Sign in Slip	Less Experienced	Less Experienced English as 1st Language Female	N/A
White Board	Women	Female Ferrier Garage Westwood Garage	N/A
In Transit	English as 2nd Language	Male	N/A

Immediate Supervisor: Operators that have more experience are more likely to use their supervisor (p-value 0.039), yet newer employees are likely to find the supervisor more effective (p-value 0.009175). Operators with English as a second language are more likely to rate the supervisor as an effective tool (p-value 0.004479). The interaction coefficient between

experience and language is positive (p-value 0.008564) which means as operators gain more experience, those whose English is their second language start to find the supervisor increasingly less effective more quickly than those with English as their first language. Ferrier Garage and Westwood Garage had negative coefficients with a very high significance (p-value-0.000134 and p-value-0.000125 respectively) so operators at both these garages rated their immediate supervisors lower when compared to Centennial Garage.

Dispatcher: More experienced operators find the Dispatcher to be less effective (p-value 0.000108). Those whose first language is not English find the Dispatcher to be more effective (p-value.0115) so if the experience is zero, those with English not their first language find the Dispatcher to be more effective. With increasing of experience the ETS operators find the Dispatcher increasingly less effective. However, from the positive interaction operators with English being their first language find the Dispatcher not as effective as they gain experience compared with operators with English not their first language (p-value 0.0159). Operators reporting at Ferrier, Mitchell and Westwood Garages found that the Dispatcher is more effective than at Centennial garage (p-values .000153, 0.0339, 0.0143 respectively).

ETS TV: Newer employees use the ETS TV more often (p-value 4.86e-5) and they find it more effective (p-value 3.21e-7)) than the more experienced operators. Operators with English as a 2nd language are more likely to find the ETS TV more effective (p-value 6.69e-7). The interaction coefficient between experience and language is positive (p-value 5.37e-6) which means as operators gain more experience, those whose English is a second language start to find the ETS TV as a communication tool increasingly less effective more quickly than those with English as

their first language. Mitchell operators found the ETS TV more effective than Centennial Garage operators (p-value 8.73e-5). This result is not surprising, as when visiting Centennial Garage, the ETS TV was off and a few informal comments were made that the TV is usually off.

Table Top Display: Male operators are more likely than female operators to use the table top display (p-value 0.0200). Operators with English not a first language are likely to find it more effective (p-value 2.89e-5) and the newer employees find it more effective (p-value 7.20-5). The interaction coefficient between experience and language is positive (p-value 0.000572) which means as operators gain more experience, those whose English is their second language start to find the table top display increasingly less effective more quickly than those with English as their first language.

Running Board: Newer operators will use this tool more than the operators who have more years of experience (p-value 0.0187). Operators who have less experience are more likely to find the running board more effective (p-value 0.000104). Operators that do not have English as their first language find the tool more effective (p-value 0.000694). The interaction coefficient between experience and language is positive (p-value 0.00738) which means as operators gain more experience and if English is the operators second language then they more likely to find the running board less effective more quickly than those with English as their first language.

Digital Sign In Slip Message: Newer operators will use the tool more than experienced operators (p-value 0.00015). If English is their first language, then operators are more likely to use the tool

(p-value 0.019). The newer operators find the tool more effective (p-value 0.000187). Females are more likely to find the tool more effective than males (p-value 0.0349).

White Board Message: Women prefer to use the White Board as a communication tool more frequently than men (p-value 0.00328) and they also find it to be more effective (p-value 0.0274). Ferrier Garage and Westwood Garage operators find this tool more effective than Centennial Garage operators (p-value 0.00314 and 3.17e-14).

In Transit News: Operators who do not have English as their first language are more likely to use the tool (p-value 0.00898). Male operators are more likely to find the tool more effective than the female operators (p-value 0.0155).

Importance and Satisfaction of Information

Table 4.2.4 indicates how the operators judged the importance of receiving various types of information and Table 4.2.5 indicates the satisfaction level with the types of information received. Four types of information that are important to communicate have been pre-defined in this analysis as high level (ex. strategic goals from ETS Business Plan), day-to-day (i.e. information on fare increases), general information (i.e. businesses that ETS riders can receive a discount at), and personal (i.e. ETS employee overtime and volunteer opportunities) information. All four categories of information were rated as being important to communicate to operators, but the emphasis was on the day to day information (81% of respondents rated as very important and 15% rated as important). The satisfaction rates regarding how satisfied operators were with how well the various types of information were being communicated to them ranged between

very satisfied and very dissatisfied. No more than 60% of the respondents expressed satisfaction (very satisfied or somewhat satisfied) with being kept "in the loop" with any of the categories of information. The neutral category was combined with the dissatisfied categories as it can be assumed that neutral respondents are not satisfied and that operators would like to be at least "somewhat satisfied" with information received, especially as 81% to 96% of respondent rated all the categories of information as either very important or important.

Table 4.2.4 How Important is it to Operators to Have the Four Types of Information Communicated to Them? n=327-328

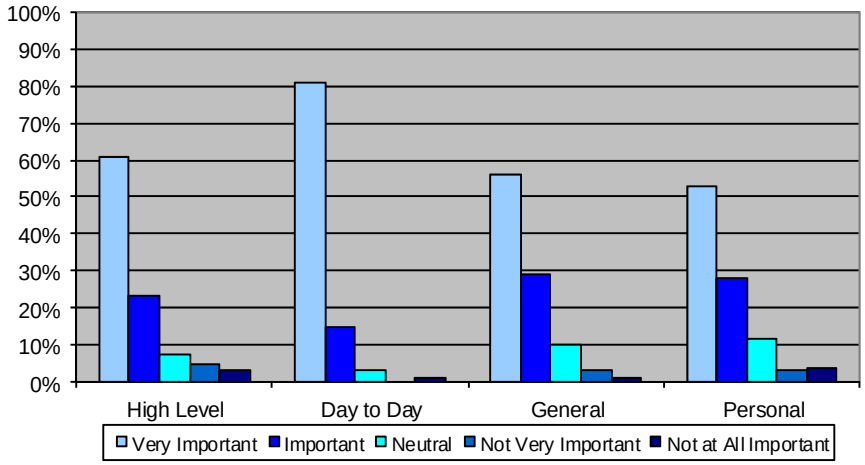
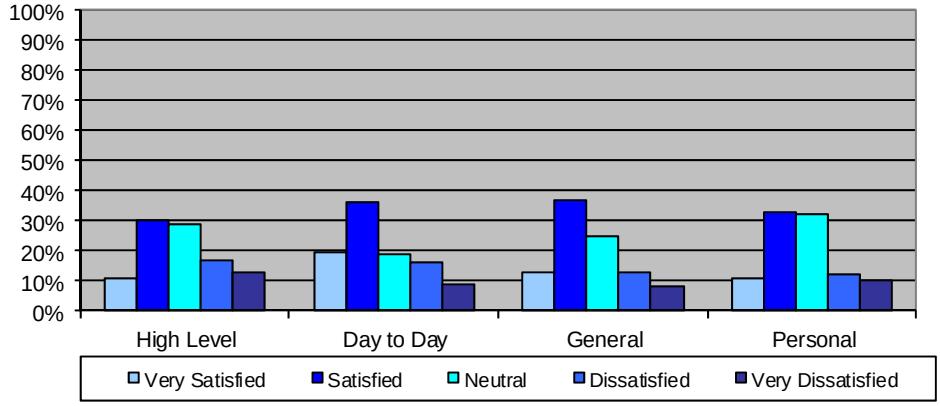


Table 4.2.5 How Satisfied Are Operators With Being "Kept in the Loop" Regarding the Four Types of Information? n=327-328



High Level Information: Newer employees rated the importance of receiving all levels of information the highest. In other words, as experience increased, the importance and/or need for information decreased (p-value 6.87e-6). The female operators rated the importance of all levels of information to be communicated to them higher than male operators (p-value0.0249). Newer employees were also dissatisfied with how well the high level information was being communicated to them, however, the statistical evidence to support this finding is not very strong (p-value=0.0152).

Day-to-Day Information: Newer employees are more likely to feel that receiving day-to-day information is important when compared to operators who have been employed longer (p-value 1.63e-5).

General Information: Newer employees gave General Information a higher importance rating than did experienced employees, indicating that it was very important this information be communicated to them (p-value 8.87e-7). Operators whose first language is other than English rated the importance of General Information more highly than did native English speakers (p-value 0.0210), and female operators found this information more important than the males (p-value 0.0252). The interaction coefficient between experience and language is positive (p-value 0.0013) which means as operators gain more experience, those whose English is their second language feel that the importance of general information to be communicated to them becomes less and less important more quickly than those with English as their first language.

Personal Information: Newer employees gave Personal Information a higher importance rating than did the experienced employees, indicating that it was very important this information be communicated to them (p-value 0.00179). Females rated the importance of Personal Information higher (p-value 0.00400) and were more satisfied than the males with being kept in the loop (p-value 0.0181).

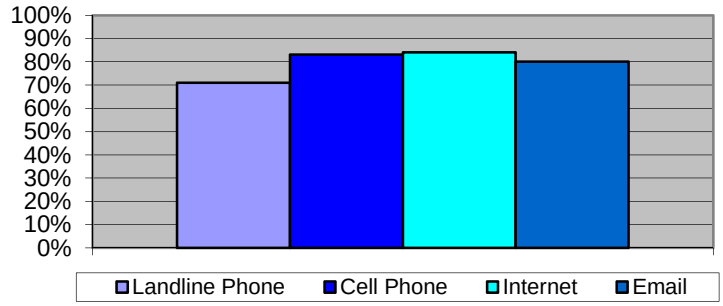
Table 4.2.6 Significance of Information Importance and Satisfaction

Information	More Important	More Satisfied	Interaction Coefficients
High Level	Less Experienced Female	More experienced	N/A
Day to Day	Less Experienced Female	N/A	N/A
General	Less Experienced English as 2nd Language Female	N/A	As operators experience increases and if English is 2nd language, the satisfaction decreased
Personal	Male Less Experienced Female	Female	N/A

Personal Communication Tools at Home

All operators have access to at least one or more communication tools at home as shown in Table 4.2.7. Eighty-three percent of operators own a personal cell phone, 84% have access to internet, and 80% have access to a personal email.

Table 4.2.7 Personal Communication Tools at Home, n=331



Landline Phone: As the operators age increases the more likely they will have access to a landline phone (0.000161).

Cell Phone: The results of this study indicate that the likelihood of having a personal cell phone increases as the operators are less experienced (p-value 0.000123) and for those whose English is their first language (p-value 0.00015).

Internet: Operators with less experience are more likely to have access to the internet (p-value 2.08e-6). If English is their first language, they are more likely to have internet (p-value 0.000484).

Email: The less experience operators have, the more likely they will have access to email at home (p-value 0.00751). If English is not the operators' first language, they are more likely to have email (p-value 0.00607).

Social Media Site Usage

Thirty percent of operators do not use any social media sites, 59% of operators use Facebook and 28% of operators use Google+.

Facebook: The usage of the Facebook as a social media site was modeled with respect to the operators' age and gender. The result, not surprisingly, showed that the younger operators are more likely to use Facebook as their favorite type of social media (p-value 1.08e-5). It also reveals the fact that female operators prefer Facebook more compared to male operators (p-value 0.0117).

Operators That Do Not Use Any Social Media Sites: The more experience the operators have, the less likely that they would use any social media sites (p-value 2.13e-6). The model used experience as the covariate but the assumption can be made that as operators' age increases the less likely they are to use social media sites.

Feedback

In Question4.iii, respondents were asked for their opinions on feedback – whether they ever contributed feedback on ETS issues and projects, and if so, did they feel that this feedback was valued. The responses to this questions reveal that 23% of respondents feel that they are listened to, 18% of respondents would like to provide feedback but feel there is little opportunity to, 53% of operators feel that they are never or rarely listened to when they provide feedback, and 6% do not feel that feedback is an important topic.

Respondents were asked which tools or communication avenues they use to provide feedback and or suggestions for ETS projects. They were asked to rate the frequency of use of their supervisor, Dispatcher, inspectors, peers, operator focus group members, suggestion box, Amalgamated Transit Union (ATU), and personal communication tools. Respondents rated the Dispatcher as the most used tool to which they submitted feedback or suggestions whereas the suggestion box was rated the lowest at 38% (see Table 4.2.8).

Table 4.2.8 Methods that Operators Use to Provide Feedback or Suggestions*

	Use**	Never Use
Immediate Supervisor	65%	35%
Dispatcher	69%	31%
Inspector	55%	45%
Operator Focus Group	39%	61%
Suggestion Box	38%	68%

* n=320-331

** Categories once per week, once every two weeks, once per month and less than once per month were combined in one category.

Open-Ended Questions

The first question asked respondents to suggest one communication tool that they would like to be implemented in the garage. Ninety out of the 189 (47.6%) responses suggested work e-mail addresses. The rest of the responses were divided equally between face-to-face, text, webpage, and social media sites.

One-hundred and eighty-seven responded to the open-ended question regarding providing suggestions of how operators could provide feedback to project managers about specific projects. Twenty-five percent commented that they want to be acknowledged that their idea was heard and as to why or why not their idea would be implemented or why it could not be implemented, 21% of the responses were related to digital/internet such as creating an interactive webpage which

operators could provide suggestions, and 7% were related to face-to-face communications such as having someone in each garage that operators could provide feedback to.

Two-hundred and sixty-one responded to the open-ended question “in the future, work e-mail addresses may be provided to all operators. What are your thoughts regarding this?” At the time the questionnaire was distributed, the City of Edmonton was in discussion regarding whether to provide mobile workers (including ETS operators) with e-mail addresses. Fifty-eight percent of the responses were positive, 20% responded neutrally, and 18% responded negatively towards the question.

The last open-ended question asked respondents if there were “any other comments regarding ETS' internal communication processes?” One-hundred and twenty-three respondents answered this question. Twenty-four percent commented on management communications, 7% commented that they were satisfied with the current communication system, 18% were not satisfied with the current system, 33% commented on various communication tools, and 13% commented on the current feedback system and current information received.

4.3 Summary of Findings

ETS operators are a diverse group, as shown in the demographic section, and the communications methods they use are equally diverse. The research indicated that operators have different preferences of how they would like to communicate, both when receiving messages from central management and when providing feedback to management. ETS has many communication tools and it is not necessarily a matter of adding to the mediums but rather using the existing ones in an effective manner. As was realized during the structured observation

section of this research project, operators have limited time in the garages, therefore the messages should catch their attention right away or the opportunity to reach them is gone.

One overall conclusion that arises from the data is that new employees, especially those whose first language is not English, appear to have the greatest need for information (and are the most interested in it) but have the least ability (due to lack of experience and limited skills in English) to evaluate its importance. Because of this, over time, they gradually may become somewhat disillusioned with the usefulness of the information. This process may be reinforced by less than satisfactory experiences in trying to communicate with supervisors and others, again because of English skills that may be somewhat limited.

When the results from all the questions are viewed as a whole, the data shows that there are differences between garages as to how they view communication tools. During observations in the garages, the process seemed to be similar with operators either sitting in the operators' lounge and visit with peers, or when they sign in at Dispatch and pick up their running board before heading to their bus to start their shift. Yet the questionnaire responses indicated many tools were used more than once per week. This raises a question as to if the researcher did not observe the operators using the tools, then when do the operators use the tools as indicated in the questionnaire?

Use and Effectiveness of Current Tools

One of the main concerns that was discovered in the research when rating the effectiveness and use of the tools is that as operators gain more experience, the use and effectiveness rating of the communication tool decreases. As of January 2013, the average age of the operators is 53.25 years and the average number of years of service is 17.45. If operators are

using the tools less as they become more experienced and the current years of experience is high then it can be assumed that there is a high percentage of operators that are not using the communication tools. As one respondent wrote: “It isn't easy to get the message out and have people listen so the method must be altered regularly or it loses its impact”.

Many tools were rated as “very effective” or “somewhat effective” but observations and this researcher’s experience with information campaigns seem to indicate that key information does not seem to be conveyed to operators. As previously noted, operators did not know about the fare increase change which is crucial information to perform their day-to-day job. The garage in which this was observed did have a poster on a bulletin board in the fare product display case. The bulletin boards are covered with notices and it is difficult for operators to distinguish between new information and outdated information so it is no surprise that operators would not be able to see this poster. Yet in this research study, 79% of operators rated the bulletin board as highly or somewhat effective tool to convey information to them.

Only 7% of the operators approached their immediate supervisors as sources of information more than once per week, yet 48% found their supervisor to be a very effective or somewhat effective resource when information was conveyed to them. The response was similar for inspectors as well of how often respondents approached the inspector and how effective the respondents felt the inspectors were at conveying information to them.

The majority of operators start during the week between 4:00 a.m. to 7:30 a.m. and the supervisors start anytime between 7:00 a.m. to 8:00 a.m. There are supervisors available for ten hours Monday to Friday and there is a supervisor and divisional supervisor on call outside the normal business hours. Each supervisor has between 150-200 operators (direct reports) to supervise. In addition to managing the operators, the supervisors are busy with the administrative

duties, projects, and various committee duties. This is an issue as these clerical duties prevent them from being "out from behind the desk" and talking to their employees. Depending on the operators work shift, this circumstance may provide a challenge for some of the operators to have access to their immediate supervisor other than for disciplinary concerns. One respondent stated that a tool to implement in the garage would be "dialog between immediate supervisors and operators on other [topics] than discipline issues".

The results of this study indicate that the frequency of use of a communication tool almost always depends on experience. Experience is related to how long operators have been employed and it appears that as operators increase their years of service, the less likely they are to use the communication tool with the exception of their direct supervisor. But the opinion about the effectiveness of the tool depends also on English competency. There were other differences in communication tool preferences, such as the fact that white board messages were preferred by females and they found the white boards more effective than males; and males preferred the table top display and they found In Transit News more effective.

It must be acknowledged that some of the communication tools are located in different locations in garages, and used for different messages. This could have had an impact on the research results. For example, the ETS TV is located in different spots in each garage so in some locations, the TV may not be easily visible. The white board message is used for different messages, placed in different areas of the garage, and the messages are posted differently. Some garages tape documents to the white board whereas some garages use a dry erase marker to write a simple, important message. One respondent suggested that the "white board should be more informative and what the news of the day is (eg. rate changes)".

Importance and Satisfaction Level of Information Received

All four levels of information (high-level, day-to-day, general, and personal) were rated by the operators as important types of information to receive, with day-to-day information being rated the highest in the "very important" to receive category (81%). Additionally all four levels of information were more important to receive for newer operators than for experienced operators.

The data revealed some trends regarding the satisfaction rate of information received. The only two models that were of significance were that females were more satisfied than males that they were being kept abreast of general information and newer employees were more satisfied that they were being kept abreast of high level information.

It appears that satisfaction levels with information channels might be one area that ETS should address, as operators expressed the view that it was very important that they receive all levels of information (high-level, day-to-day, general, and personal), but their satisfaction with the channels that relay that information received only a 50% approval rating.

Satisfaction with the Feedback Process

The majority of respondents (53%) checked either "I provide feedback but feel I am not listened to" or "I do not provide feedback as I am never listened to" in Question 4.iii, which asked respondents to choose the statement on feedback that most reflected their opinion. With 53% of the respondents being dissatisfied, this is an area which requires development. In the open ended questions, the most common response (25%) was related to the fact that operators wanted to be listened to and have their suggestion acknowledged. As one respondent wrote: "For most of my career communications have been one sided. We can be a valuable asset for

providing our views on equipment purchaser new initiatives and new services". Feedback is an important process in two- way communication and this study indicates that ETS two-way communication requires development. One tool already utilized by ETS to provide feedback is the suggestion box, yet it is the least used. In the open ended comments, several respondents stated that the paper (to write the suggestions on) is always out or they stopped providing suggestions as no one responds to them.

Personal/New Tools

In the open ended questions, email was the most recommended "new" tool for operators. As well, it was rated positively when operators were asked what their reaction would be if they were to receive a work e-mail. The newer employees already have home connectivity as they are more likely to have access to the internet.

Most operators have access to internet (84%), and use Facebook (59%) and cell phones (83%) so these could be potential "new" tools to reach the operators. Thirty percent of the respondents do not use social media sites and because those operators with the most years of experience are least likely to access social media, other media will need to be used to reach these older drivers. Females are more likely to use Facebook than males. Additionally younger employees are likely to use Facebook.

Other Information

The divisional supervisors indicated that it is hard to communicate face-to-face with employees when they will not be compensated for it. When operators are in the garage (not on the road) the only other time they get compensated for is if it is for their annual performance

evaluation. The supervisors indicated that even though in the operators' performance expectation guidelines they are required to read the operators notice on a daily basis, the time is not compensated for, so how can this be a reasonable expectation.

Summary

The following statement from one of the respondents summarizes what some of the older, more experienced operators may be feeling as it pertains to communications and engagement in the garages:

> "Once was a time that we could sit in the lunch room, eat lunch, play cards or pool with supervisors, [there] was much more communication [and we] could bounce ideas off of each other. I believe that in curtailing these forms of ideas sharing, ETS has effectively lost contact with its patrons and its employees. I am currently trying to work under a 7th GS [General Supervisor]. This one at least knows of me. I have worked 31 years building a reputation from the work I have put in. We are unable to communicate because we are not able to get to know one another. Since 1982 I have never felt so out of touch nor seen moral so low. If you wish ideas to flow you need to understand "who" they are coming from".

4.4 Key Recommendations

The following key recommendations will address the research question of what communication tools can be implemented in the ETS garages in order to enhance two-way communications between operators and administrative/management. The findings of this research study showed that some of the current tools need to be improved, the four categories of

information need to be communicated more effectively to increase satisfaction levels, and the feedback process could be improved. These recommendations propose actions that may improve feedback processes, improve satisfaction levels of information received, introduce new tools and assist with improving the utilization of current tools, all of which will lead to enhancing two-way communications between mobile (operators) and non-mobile (administrative/management) employees. Hopefully, these recommended actions will also assist in helping "connect" the operators to the organization as there appears to be a disconnection between operators and the rest of ETS employees (administrative/management).

Most of the recommendations below require "buy in" from all sections of ETS. All sections need to be conscious of the role that information, particularly technologically mediated information, plays in the work day of ETS operators, and also what information is crucial to both operators and the citizens of Edmonton relying on those operators. It is crucial that all ETS sections work together to ensure that communication is as effective and efficient as possible.

Enhance Two-Way Communication

ETS Operator Communications Liaison Coordinator

Each garage is responsible for ensuring information gets to operators and removing any outdated information. The research results show that each garage is not doing this. The City of Edmonton Corporate Communications has assigned one employee to look after ETS internal communications and one employee to look after ETS external communications. ETS partially funds these two positions. The issue is that the internal communication officer is responsible for all internal communications across ETS (operators, administration/management communications) and is inundated with day-to-day responsibilities. Speaking personally to the

operators or ensuring that the communication mediums (e.g. TV, white board) are being displayed effectively in each garage is not in the officer's job scope and even if it was, the officer would not be able to do these tasks effectively due to time constraints. It would be a benefit to operators if one employee is assigned specifically to operator communications. This employee would be the liaison between the internal and external communication officers and the divisional supervisor. This would also support one of the priorities determined by the City of Edmonton Manager. In the 2012 City of Edmonton Employee Engagement and Diversity Survey 51.1% of respondents rated the communication received in the City as favorable. The action is that "communication needs to be a priority – in frequency, appropriateness, and depth" (p. 2).

If someone is in the garage talking to the operators this could help employees feel recognized, valued and connected to the organization. One respondent suggested: "A social hour which rotates in times and days so everyone can attend to share ideas, stories, etc." This is crucial, especially for the more experienced operators, as it appears that they lose interest and their motivation to learn decreases about what is going on in the organization.

Calder Bateman Communications Ltd. found that "while many staff spoke enthusiastically about the value of e-mail technology, numerous operators indicated they preferred to receive corporate information verbally" (2005, p.14). In the Calder Bateman Communications Ltd. study (2005), operators noted with concern the irony of ETS's growing reliance on new communication technologies to facilitate internal communication at the expense of face-to-face communications. "Paradoxically while the nature of the work precludes them from using computers, specifically email and intranet, the reliance upon these tools has grown considerably" (Calder Bateman Communications Ltd., 2005, p.14).

One potential issue is it would be difficult for the new ETS Operator Communications Liaison Coordinator to speak “personally” with 1,500 operators working in different garages and different shifts. However, the communications coordinator could visit the garages during the times when most operators start or end their shift (as did this researcher in order to gather data). Visits would occasionally have to be done during the evenings and on weekends to reach operators working these shifts. Another suggestion is that the individual could evaluate the effectiveness of the current tools, or could coordinate with the garage supervisors and the administrative staff located in the garages. Operators are required to sign in at Dispatch which indicates that operators are in contact with Dispatchers at the start of their shifts. It could be recommended that the Dispatcher would be able to be one of the main communication tools but one respondent wrote: “Dispatchers are busy or on the phone, no one wants to bother them with "newbie" questions so [it would be beneficial if there was] someone to deal with minor issues and general help”.

Change Communication Focus

New operators whose second language is English prefer face-to-face communication. If this is a major demographic for new hires, then ETS needs to alter their communication focus. Some issues with increasing face-to-face time with supervisors are the number of operators reporting to supervisors, their shift work (i.e. days and hours of work), and the complication that arises because all operator paid hours are “out in the field” hours. An in-office meeting would require that the supervisor replace the operator in order to ensure service coverage, or pay the operator overtime. As noted earlier, operators do not get paid outside their day-to-day duty of operating a bus other than the ½ hour for their annual performance evaluation.

New employees, especially those whose first language is not English, should be targeted for intensive orientation sessions with the trainers demonstrating the communication tools available, how to use them, and means for providing suggestions of tools that may not currently being used in the garages . Such an experience in person-to-person orientation sessions would make the new employee feel more valued, would help decrease disillusionment, would improve satisfaction with the job, and perhaps result in increased employment retention rates. High turnover is one of the most high-cost items in running a business and this is a concern for ETS as the cost to train a new employee is $12,000 per employee (Personal Communication, July 2013). Providing English lessons for new employees, especially those who are young and may be recent immigrants, might also be worth the effort and cost. Such lessons would focus on the type of English vocabulary and concepts needed to understand communication content from supervisors. An issue with this is the funding currently approved for operator training is limited to their (operators') initial training orientation when they are hired by ETS. Even if funding were available, the class would have to be taken outside their normal shift and they would not be compensated for their time.

Most road accidents that occur while an ETS operator is driving an ETS vehicle happen within the first five years of service and this group has the highest employment turnover rate. Currently there are 400 operators who have been with ETS five years or less. ETS's turnover in 2012 was close to 143 operators or 10% (Personal Communication, July 2013). According to The Conference Board of Canada, in 2011-2012 the voluntary turnover rate for Canadian organizations was 7.2% and the average cost of training an employee in 2010 was $690.00 per employee (2012). ETS's investment in training one operator is $12,000. ETS provides no further training sessions after this initial training, and there is no recertification program.

In order to change the communication focus, the tools that are not effective for the operators need to be eliminated or significantly modified, and more time should be spent creating content and tools that are relevant and accessible (see New Tools section below). “It may take more time and effort to communicate to these audiences, but once you’ve mastered the process, you’ll have a much better chance of engaging, informing and motivating them” (Crescenzo, 2012).

Senior Management Needs to Be More Connected to Front Line Employees

Operators want to see the senior staff “on their turf” more often (Calder Bateman Communications Ltd., 2005, p.15). Operators feel that if management were on their “turf” there would be a better understanding of what issues they encounter on a daily basis. This is important as it develops a respect between both parties so when management makes a decision, operators may not agree with the decision but they understand why it was made.

It is important that management approaches operators in an informal, casual manner (i.e. mingling with operators in the morning, hopping on the bus) versus a formal manner (i.e. presentation or standing at a table).

Senior management also needs to support the divisional and general supervisors by employing more general supervisors. When one supervisor has approximately 200 employees to supervise, they do not have a lot of time to do the positive reinforcement which contributes towards motivating employees. General supervisors need to have fewer clerical duties, and processes need to be streamlined so they can get from behind the desk and talk to their employees. One respondent wrote: “Having the [general supervisors] visit and manage by walking around more would make them more available. By the nature of our jobs we [operators]

can be very insulated from what is going on or coming up at transit, so running into them [supervisors] in more of an open "non-office" environment would facilitate frank open communication." In one of the informal interviews one of the supervisors stated that "operators are motivated to do a good job but they are not currently supported by direct supervisors due to too many direct reports and other processes" (Personal Communication, July 2013). The informal discussions are also important in the feedback process.

> Trainings and workshops can create space for people to be open to new ideas and experiment with new ways of communicating, but the next day everyone goes back to the real world. You have to integrate the behaviors you want into your team's daily routines in order to normalize those behaviors within the organization's culture. If "feedback" is something out of the ordinary that only happens at unusual times (such as a performance review, or when something's gone wrong), it'll never really be an organic part of the organizational culture. (Batista, 2013)

New Tools

The more tools you have, the greater the challenge in coordinating consistent and timely messages. Also, the more customization for various demographics there are, the more time is required in modifying messages to target specific demographic sectors. There can be too many tools/devices in a communications strategy, so ETS needs to consider simplifying with the aim of then being in a better position to fully support a new tool/device. Rehling identifies a few principles to consider when moving from print to online communications including "evolution is not necessarily progressive" and "success in one medium is relative to what could have been achieved with another" (1999, p.78).

This research study indicated that operators' opinions vary with the tools so it is important to have as many tools as needed to communicate effectively to all the demographics. The goal is to provide as many tools as needed without risking information overload.

Social Media Sites: Use external social media sites to reach the younger operators. This will provide a timely and easy way to communicate with operators. The risk of this, as with any social media site, is control of information and ensuring the information shared and/or discussions conducted are kept to a professional context. The communications coordinator (new position suggested earlier) would be responsible for the site and engaging the operators. They would be responsible for posting the information and encouraging two-way conversation. One respondent suggested: "Centralize all info onto a twitter account or Facebook account with posts beginning with 'from OH&S'or 'From mgmt.' etc."

Mobile App: A mobile application could be created which would be linked to COE's intranet through operators' smart phones or other devices (i.e. I-pad). This would provide operators with a sense of being connected to the organization and would offer access to company information easily. Additionally Quick Response Codes (QR code) could be placed on operators' running boards, digital sign in slips and other communication mediums that would take them directly to a website of information that peers would like to communicate to operators. Operators would have to own a smart phone in order to scan the QR code shown in Figure 2.

Figure 2 QR Code

Digital Sign: A digital sign could be placed at the Dispatch area in every garage. The digital signs could have video and audio. This would be simple to administer as content can be fed right from a computer. The group that would be responsible for content would be the ETS interactive team as they are currently responsible for updating the internal ETS TV's and the external LRT TV's. This communication medium would have a good reach as operators have to sign in at Dispatch so this tool could reach the majority of them, even the operators who do not go into the operators' lounge. One respondent wrote: "[Install] a very bright flashing digital display (a one-Liner) at the dispatch counter that would alert us of pending notifications of any sort (i.e. check the TV for a new message or running board or new notice board etc.)".

E mail: At the time this report was written, work email addresses were starting to be assigned to operators. The one important suggestion that arises from the results of this research study is to ensure the email communication is written for the operators. The message needs to be concise and written to reflect the impact on the operators and how an action may or may not affect the operators' work. Supervisors have expressed concern, however, that they cannot they cannot meet the demands of their current daily duties and as such, they are apprehensive about being able to effectively answer the operators' emails as well. As one respondent wrote: "Relying on email may help to a degree but it may decrease the communication channels as well due to operators not having a computer. Personal support is more essential for operators to increase the moral[e]."

<u>Improve Existing Tools</u>

The existing tools need to be placed in visually accessible places where the operators can view the message in a few seconds. As operators are only in the garage for a maximum of 15

minutes, the tools need to be placed where the operators will be, which is either at Dispatch area, in the operators lounge or walking out to the bus garage. As one respondent wrote:

> "Using email is good but there should be a way to know that any suggestions are being acted upon. Placing any info has to be placed in ones face. Any lengthy info can be placed on website or bulletin boards. I think print media will still need to be used as not all ages use the electronic/internet/social media systems."

Bulletin Boards: The bus garages have several bulletin boards displayed near the Dispatch area and in the operators lounge. The main issues as noted by the respondents to this questionnaire are that information is posted sporadically, information is outdated, notices (i.e. operation notices) are too wordy and the font is too small to read. One respondent wrote: "I find the current means of communicating frustrating. When I check for new bulletins and memos, I am bombarded with info[rmation] not pertinent to me or [I am] rereading a memo." The bulletin boards should be organized into specific areas of interest so the boards are more visually appealing. Currently each garage has assigned one person to look after the information posted but during the structured observation it was apparent that the boards had not been updated in a while. Supervisors should ensure that this is being done at minimum on a monthly basis.

White Board Message: Some garages use the white board to post notices that are on letter sized paper (8.5 by 11 inches). The issue with this communication method is that operators will not look at notices that are too wordy or hard to read due to the small font size. This tool has a lot of potential as it can be located by Dispatch, which is where all operators reporting to a garage have to sign in for their shift. The white board should be used to display a simple message and it

should be written in large letters. Additionally the messages should be reserved for time-sensitive important notices/messages.

ETS TV: This is a good visual but requires improvement. Operators indicated that the messages are difficult to read and many of the ads are text heavy. Additionally some of the ads have been displayed for several months which decreases the ad's appeal to viewers. Guidelines need to be adhered to through ETS' creative team to ensure that ads are clear and have a limited amount of text on them. Centennial Garage needs to keep the TV on and ensure that it is put in a different location as currently it is sitting in the back of the room where it is difficult to see.

In Transit: In each edition of In Transit an insert could be printed to communicate information specific to operators. One respondent suggested: "An [information sheet specific to] drivers [that would indicate] changes to routes/ runs/ detours /construction /shifts/holiday services or anything coming up." Operators would be able to take one prior to their shift and could read it on the bus during their scheduled stops. Currently only 50 printed copies of In Transit are sent to each garage therefore, more of these "driver sheets" would have to be printed in order for the majority of the 1,500 operators to receive a copy.

<u>Improve Level of Information Received</u>

Adapt Messages and Tools to Operators

Currently when messages are sent out to employees within the organization, the same message is communicated to everyone. "Sharing information with employees is a critical means of engaging staff and deriving maximum productivity" (Kumar, 2012, p.7). Each tool needs to

be evaluated to find out which tools are good for which messages. The results from this research indicate that operators need messages that are written specifically for them. The messages need to be simple and concise in order to be received in a manner that it is relevant to the intended audience (operators). Operators have a limited time in the garage so if the message is too wordy and does not catch their attention and answer the "why should I care" question, the message will not be received by the operators. This applies to any communication mediums used and is a crucial element to consider especially when trying to communicate with operators who do not have English as their first language.

The findings from this research project could be used to tailor the messages to specific demographics. If operators are required for volunteer opportunities and both males and females are needed then use the white board to reach the females and the table top display to reach the male operators. The message would be the same but the tool would be different depending on the demographics.

Improve Feedback Process

Suggestion Box: Ensure that the box is checked regularly to see if there is paper and if there are comments in the box. All constructive suggestions should be answered in a professional and timely manner. A space could be dedicated on the bulletin board to post operators' suggestions and an explanation as to as to whether a suggestion will be considered and pursued further. This attention to operator feedback could potentially increase engagement as operators will feel listened to and valued. This would occur regardless of the response as they will feel they are being taken seriously and will be encouraged to continue to make suggestions. As one respondent wrote: "Written responses [should be provided to operators], when employees make a

suggestion even when employee just posed a question to supervisor. It gives employees a sense of being taken seriously and provides opportunity for ETS to give background info".

Intranet/Social Media Sites: ETS operators have several intranet sites: a union page, social events page and a trading shifts Facebook page. Therefore it may be effective to add an intranet suggestion and feedback page which project managers would have access to. Project managers would be any ETS employee who is leading projects that would impact operators. To receive "honest" feedback, management should be kept off this page as it may hinder some operators from participating. An intranet page specifically for ETS operators could also be created.

Recommendations Summary

It is acknowledged that some of the recommendations above may have potential issues. Current labour agreements now in place would necessitate that operators would have to access most of the technologically mediated communication – email, intranet, Facebook - while they were not on shift, that is, outside their daily work hours. In addition, the suggestion box requires resources to maintain it as an effective communication and feedback tool, whether the maintenance is carried out by a supervisor or another employee. Either way the process requires someone researching the suggestion to provide a response, which is a time commitment.

While these recommendations provide a guideline of how to potentially engage the operators, it is also important that the operators take some responsibility for their own communication needs, and are accountable for their actions too.

5.0 Conclusion

In any organization, two-way communication is important. When an organization is large and diverse with many different levels and sections, it is more difficult to ensure that the message is reaching everyone. In organizations where there are both mobile and stationary employees this creates an additional challenge. ETS has a particularly complex challenge as the mobile workers (operators) are the front line staff and they are dealing with customers on a daily basis. ETS uses an inverted organizational chart which puts the customer first. The ETS Employee Orientation Handbook states that "all employees have a responsibility and commitment to look after, to listen to, and to provide high quality products and services to all their customers" (Edmonton Transit System, 2008). In order to provide this intense level of customer care, ETS operators need to be well-informed about what is "going on" within the organization. This information knowledge, which must be both current and comprehensive, is essential for effective and efficient navigation of Edmonton's sometimes icy streets and for the multiple public interactions each day that are part of the operators' duties. Regardless of the infrastructure and systems in place to support Edmonton's public transit service, the public's view of ETS is largely shaped by operators and their day-to-day contact with riders (Calder Bateman Communications Ltd., 2005, p. 10). A crucial problem however is that the majority of the projects/decisions that impact the operator interactions with riders, such as marketing campaigns, promotional campaigns, events, fare change decisions etc. are led from other areas of ETS (not the operators area). It is crucial that all of ETS sections work together to accomplish the two-way communication necessary to ensure that ETS operators are connected, not disconnected employees. The Employee Orientation Handbook states that "success in our organization depends upon all levels working together" (Edmonton Transit System, 2008).

5.1 Limitations of the Study

The research had a few limitations. A significant limitation within the data gathering occurred with the structured observation. A behavior checklist form was created but once the researcher was in the garages the observing was difficult as the researcher found that speaking to the operators was richer than observing the processes. This was due to the fact that the majority of the operators were not using the communications tools so data collection consisted mostly checking off two options, which were signing in at Dispatch and/or sitting in operators lounge.

Another limitation was that the questionnaire did not allow for sufficient evaluation of some communication tools. For example, a few informal comments during the structured observation were heard that the suggestion box is usually out of paper which could have impacted the results of the usage. There were also a few communication tools that could have been deleted from the questionnaire and others added instead. One key tool that should have been included within the questionnaire is the news media. Even though this is an “external” tool it was informally observed that operators also get some of their information from the news media. One respondent commented that they received a lot of ETS information from the media.

Even though enough questionnaires were returned for a 95% confidence rate the response rate could have been higher. Some operators did not want to fill out the survey as they felt management might see what they are saying and then they would be “reprimanded”. Operators were told that the research was on behalf of a University of Alberta student yet there were several operators in each garage who were still hesitant about filling out the questionnaire.

The study would also have gathered richer and more nuanced data had an interview component been part of the research design. Operators from each demographic group could have been interviewed in order to finish triangulating the research which would increase the accuracy

of the findings. However, the time period available for data gathering did not allow for inclusion of an interview component.

5.2 Future Research

One conclusion that can be drawn from these research results is that ETS employees could potentially be disengaged as analysis showed that as operators are employed with the organization longer they do not use the communication tools as much as newer employees. In the 2010 City of Edmonton Employee Diversity and Engagement Survey it was discovered that there is a

> significant inverse relationship between department size and engagement scores. In general, the larger the department the lower the engagement score. This reinforces comments made earlier about the challenge of engaging employees in large organizations. All things being equal, smaller organizations can communicate, change direction, collaborate, plan and create a strong sense of interdependence and teamwork more easily than large organizations. (p. 14)

To change the culture it will require someone to ask the operators how much they know about the organization and if they know what the current activities are. ETS needs to identify the common culture needed and what operators need in order to increase their engagement. As one of the respondents wrote: “ETS is more concerned about appearance of listening than it is about hearing anything. The question here is less about communicating better than it is about honestly sharing ideas. The culture needs to change.”

Another conclusion that could be drawn is that operators do not need to use the tools as often because some of the messages repeat themselves over the course of the year. To address

this further investigation would be required to determine which communication mediums operators prefer for each type of information.

Due to the number of tools that are dispersed throughout the garage, it would have been beneficial to know the respondent's awareness of where and how to access these tools. Additionally, each divisional supervisor has their own preference of which communication tools to use and how to use it in each garage. In June 2013, Centennial, Ferrier and Mitchell divisional supervisors were assigned a different garage to manage. It would be beneficial to administer a similar questionnaire in a year to see what type of impact the divisional supervisor has on the use and effectiveness of the communication tools.

Finally, further research is required as to how best to use the new communication technologies to connect mobile workers without a "desk" who also do not have the work time to access the technologies. The literature review gathered for this study had limited information about how to connect mobile workers. This research study provided a small case study contribution to the data available but further research is required.

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Appendices

Appendix A Structured Observation Recording Sheet

The researcher will observe each area during specified time to minimize bias results.

Division:_____ Date:_____

*A “tick mark” indicates that the activity occurred

CIRCLE TIME OBSERVING	0445 -0505 1335-1355	0505-0525 1355-1415	0525-0545 1415-1435	0545-0605 1435-1455
Sign-in at Dispatch				
Communicates with Dispatch (other than a greeting)				
Reads Digital Sign-in Sheet				
Communicates with Supervisory staff				
Communicates with staff in Admin Office				
Reads Bulletin Board				
Reads Running Board				
Sits in Operators Lounge				
Communicates with Other Operators				
Reads paper				
Looks at ETS TV				
Reads Whiteboard				
Uses Computer Terminal Kiosk				
Other:				

Appendix B Letter of Intent

Letter of Intent
Research Approval in Divisional Garages

January 19, 2013

Edmonton Transit System
Attention: _____
Divisional Supervisor, Centennial Garage

Re: Seeking approval to conduct communications research in Edmonton Transit Divisional Garages

Dear _____,

I submit this letter of intent to notify ETS Divisional Supervisors of my proposal to conduct research at Centennial, Ferrier, Mitchell, and Westwood garages. The research will include observing the ETS operators, as well as providing a questionnaire (attached) to a random sample of ETS operators.

The project objective is to analyze and understand the internal communication processes between ETS operators (non-wired: no access to work phones or work computer) and management/ and administrative staff (wired). I will be using this research to provide recommendations of how administrative staff and management can communicate non-emergency messages to operators and how operators can communicate feedback to administrative staff and management.

I am seeking the support of the divisional supervisors to:

- Grant me access to the garages to observe communication processes of operators during routine report in and report out activities between January 28, 2013 to February 12, 2013.
- Provide a supervisor at each garage to distribute questionnaires from February 4 to February 8, 2013.
- Permission to place a secured box at Dispatch to collect the completed questionnaires.

I am currently enrolled in the Master of Arts in Communication and Technology (M.A.C.T.) graduate program at the University of Alberta. Although I am an ETS employee, the research is for my final capping research project, which fulfills the requirement for the M.A.C.T. graduate program. Due to time constraints and the scope of the project, Percy Wickman Garage will be excluded from this research.

Associated risk with conducting this research may include operators who wish not to be observed. In order to mitigate this risk I will be providing specific dates and times when I will be at each garage. I ask that each divisional supervisor will communicate with operators that they will be observed on the date and time as determined by me and the divisional supervisor. In the event an operator does not want to be observed, the subject has the option of informing me while I am at their garage that they do not wish to participate in the project. At that point the subject will not be observed and the results will be omitted from the final results.

Please feel free to call me at 780-944-5379 or email me at denise.kirkpatrick@edmonton.ca with questions or to discuss any concerns. Please note your approval decision at the bottom of this letter and send to me via:
1. Interoffice mail at Suite 850-Scotia Place, Tower 1 or
2. Scan signed copy and email me at denise.kirkpatrick@edmonton.ca

Sincerely,

Denise Kirkpatrick
M.A.C.T. Student

☐ Request Approved (no conditions)

☐ Request Approved with conditions: *(list conditions)*

_____
_____

☐ Request Denied

Name *(please print):* _____

Signature: _____

Date: _____

Cc:

Encl: Participation Consent, Questionnaire, and Structured Observation sheet.

Appendix C Participant Consent Form/Questionnaire

QUESTIONNAIRE INFORMATION SHEET

Connectivity: A Case Study of Internal Communication Processes Between Transit Operators and Administrative Staff at a Municipal Transit System

You are asked to participate in a research study conducted by Denise Kirkpatrick, Masters of Arts in Communications and Technology student at Faculty of Extension, University of Alberta. The results of this research will be used for my capping project, which will fulfill the requirements to earn my graduate degree. Your individual responses will be held in confidence and destroyed once all questionnaire results have been tabulated.

If you have any questions or concerns about the research, please feel free to contact

Researcher Investigator
Denise Kirkpatrick, Student
Faculty of Extension, University of Alberta
9334-72 Avenue NW
Edmonton, AB, T6E 0Y2
Email: denisekirkpatrick@shaw.ca
Phone: (780) 720-3057

Supervisor
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Faculty of Extension, University of Alberta
2-365 Enterprise Square, 10230 Jasper Ave.
Edmonton, AB, T5J 4F6
Email: ann.curry@ualberta.ca
Phone: (780) 248-1110

PURPOSE OF THE STUDY

It is difficult for ETS administrative staff to communicate messages and seek feedback from you, the Operator. As frontline staff, your input is crucial in the development and implementation of many ETS projects. This research will attempt to uncover communication tools that you prefer in order to keep you more informed and engaged about your workplace. The questionnaire will be distributed to ETS bus operators at Mitchell, Ferrier, Westwood, and Centennial garages.

This questionnaire is the second stage of the research. The first stage consisted of observing communication processes in each garage to determine if operators were using similar communication processes and tools and which were most widely used.

PROCEDURES

If you volunteer to participate in this study, I would ask you to do the following things

Complete the attached questionnaire. Completing the questionnaire will be considered as consent to participate in this project.

1. The questionnaire will be self-guided and will take approximately **20 minutes** to complete.
2. Remove this information sheet and place questionnaire in secured box located at Dispatch. It will be labelled “Completed Communication risks Questionnaires for ETS Operators”.

3. If you would like a copy of the research findings please contact me, Denise Kirkpatrick by email at denise.kirkpatrick@shaw.ca or by mobile 780-720-3057.

POTENTIAL RISKS AND DISCOMFORTS
There are no unforeseeable risks associated with this questionnaire. The information will be confidential and individual questionnaire responses destroyed once results have been tabulated.

POTENTIAL BENEFITS TO PARTICIPANTS
Your participation in this questionnaire will contribute towards making recommendations of key two-way communication tools that will enable you to provide feedback and recommendations for ETS projects, events, etc and vice versa. Information that you provide will also be used to support statements and provide additional insights and/or comments. Key findings and recommendations will be presented to ETS Divisional Supervisors and to ETS Management Team (ETMT).

PAYMENT FOR PARTICIPATION
Participation is voluntary. There is no payment for participation in this research.

CONFIDENTIALITY
Every effort will be made to ensure confidentiality of any identifying information that is collected in connection with this study. The questionnaire does not ask for your name, badge number or any other identifying information, so I will not be able to identify you. All research data will be stored in a hardcopy and digitally. All hardcopy and digital data (on flash drive) will be stored in a locked filing cabinet in my supervisor's locked office on the University of Alberta Enterprise Square Campus. While conducting the research, digital files will be stored on personal, password-protected computer accessible only by the researcher. Data (including questionnaires) will be saved for five years. After five years the data will be shredded in a secure way. **While the results of the study may be presented and/or published, the identities of the participants will remain protected**

PARTICIPATION AND WITHDRAWAL
Participation in this study is completely voluntary. Completing the questionnaire will be considered your consent to participate. You have the right to refuse to answer any questions you do not want to answer and still remain in the study. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. Once submitted, your questionnaire will not be available for withdrawal as no identifying information is being collected on the form. **If you start the questionnaire and decide you no longer wish to take part in the questionnaire do not place in the secure box at the Dispatch desk.**

RIGHTS OF RESEARCH PARTICIPANTS
You may withdraw your consent at any time prior to submitting the questionnaire which will discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study. The plan for this study has been reviewed for its adherence to ethical guidelines by a Research Ethics Board at the University of

Alberta. For questions or concerns regarding participant rights and ethical conduct of research, contact the Research Ethics Office at (780) 492-2615. If you have concerns about this study, you may contact the Research Ethics Office. This office has no direct involvement with this project.

Questionnaire for ETS Operators

Welcome! Thank you for taking the time to participate in the questionnaire on ETS internal communications on behalf of a Masters of Arts in Communications and Technology student.

Note: All data from questionnaires will be property of University of Alberta, not ETS.

Importance of this questionnaire:

- As front line staff, your input is crucial in the development of several ETS projects.
  - It is difficult for ETS wired employees (access to stationary work station) to communicate messages and seek feedback from you, the operator (mobile workers).
- **Your participation in this questionnaire** will contribute towards making recommendations of key two way communication tools that are important to you, the operator and to seek your feedback and recommendations for ETS key projects.

Details of questionnaire:

- This questionnaire will take approximately **20 minutes to complete**.
- Place completed questionnaire in secured box at Dispatch.

It is required that potential respondents are informed that not participating carries no consequences, and that completing the questionnaire will be considered as consent to participate.

Once again, thank you for taking the time to participate. Your participation is appreciated.

If you have any questions, or would like a copy of this report please contact:
Denise Kirkpatrick, MACT student researcher 780-720-3057.

Questionnaire for ETS Operators

1) **Demographic Questions** (CIRCLE CORRECT ANSWER):
   - i. **Age:** (18-24) (25-34) (35-44) (45-54) (55-64) (65+)
   - ii. **Gender:** (Male) (Female)
   - iii. **Is English your first language?** (Yes) or (No) **If No, first language is** _____
   - iv. **How long have you been operating an ETS bus?** (Under 1 year) (1-2 yrs) (3-5 yrs) (6-10 yrs) (11-15 yrs) (16-20 yrs) (21-25 yrs) (over 26 yrs)
   - v. **Are you on spare board?** (Yes) or (No).
   - vi. **Your standard daily shift or split shift is** (_____to_____) **&** (_____to_____)
   - vii. **What are your current days off?** _____
   - viii. **What is your "report in" location?** (Centennial) (Ferrier) (Mitchell) (Westwood) (D.L. MacDonald) (Transit Centre) (On Road) (Other:_____)

2) **Current ETS internal communication tools.**
   - i. **How often do you use the following existing tools to seek information? Check the appropriate column.**

	Once a week	Every two weeks	Once per month	Less than once /month	Never Use	Not aware of tool
a) Notices of bulletin boards						
b) Immediate supervisor						
c) Other supervisor						
d) Dispatcher						
e) Inspectors						
f) Peers (co-workers)						
h) Members of Operator Focus Groups						
i) OH & S Committee Meet and Greets						
j) City or ETS website						
k) Intranet kiosk						
l) ETS TV (operator lounge TV messages)						
m) Table Top Display Messages						
n) Message at end of running board						
o) Message on digital sign in slip						
p) White board message						
q) Personal email (for work)						
r) Personal social media sites (Facebook)						
s) Personal land/cell phone (for work)						
t) Transit News (employee newsletter)						
u) In Transit News (public newsletter)						
v) ATU						
w) Other (please specify)↓						

ii. How often do you use the tools to provide feedback or suggestions about ETS projects?

	At least once a week	Once every two weeks	Once per month	Less than once per month	Never Use
a) Immediate Supervisor					
b) Other Supervisor					
c) Dispatcher					
d) Inspectors					
e) Peers (co-workers)					
f) Operator Focus Group Members					
h) Suggestion Box					
i) ATU					
j) Personal social media sites (Facebook)					
k) Personal email (for work)					
l) Personal land/cell phone					
m) Other(Specify):					

3) Importance of communication messages.

i. How important is it to have the following messages communicated to you, the operator?

	Very Important	Somewhat Important	Neutral	Not Very Important	Not At All Important
a) High level information (policy changes, ETS business plan)					
b) Information that affects me day to day (fare changes, free service, OH &S)					
c) Information on events that public may ask me about (Stuff a Bus, Donate a Ride)					
d) Information that is of interest to me personally (volunteer and overtime opportunities)					
e) Other (please specify)↓					

4) Effectiveness of communication tools.

i. How satisfied are you with being kept "in the loop" of the following information?

	Very Satisfied	Somewhat Satisfied	Neutral	Somewhat Dissatisfied	Very Dissatisfied
a) High level information (policy changes, ETS business plan)					
b) Information that affects me day to day (fare changes, free service, OH &S)					
c) Information on events that public may ask me about (Stuff a Bus, Donate a Ride)					
d) Information that is of interest to me personally (volunteer and overtime opportunities)					
e) Other (please specify)↓					

ii. How effective are the tools below at conveying information to you? Check appropriate column.

	Highly Effective	Somewhat Effective	Neutral	Not Very Effective	Not at all Effective
a) Notices on Bulletin boards					
b) Immediate Supervisor					
c) Other Supervisor					
d) Dispatcher					
e) Inspectors					
f) Peers					
h) Members of Operator Focus Groups					
i) OH & S Committee Meet and Greets					
j) City or ETS website					
k) Intranet kiosk					
l) ETS TV (operator lounge TV messages)					
m) Table Top Display Messages					
n) Message at end of running board					
o) Message at end of digital sign in slip					
p) White board message					
q) Personal email (for work)					
r) Personal social media sites (Facebook)					
s) Personal land/cell phone (for work)					
t) Transit News (employee newsletter)					
u) In Transit News (public newsletter)					
v) ATU					
w) Other (please specify)↓					

iii. Choose the statement on feedback that most reflects your opinion.

_ When I give feedback on ETS issues and projects, I think I am listened to.
_ I like to give feedback but have little opportunity to do so.
_ When I give feedback, I feel that I am NOT listened to.
_ I never provide feedback because I feel I am not listened to.
_ Feedback is not an important issue to.
_ Other:_____

5) Personal Communication Tools Used at Home

i. What communication tools do you have access to at home? (CIRCLE all that apply)
(Landline Phone) (Cell Phone) (Internet) (Email) (Other_____)

ii. Which tools do you receive work messages through? (CIRCLE all that apply)

(Landline Phone) (Cell Phone) (Internet) (Email) (Other_____)

iii. If you use social media sites, which ones do you use? (CIRCLE all that apply)

(Facebook) (Twitter) (LinkedIn) (Pinterest) (Google +) (Other _____)

6) If you were in charge of communications for ETS and could implement **one NEW communication tool/technology**, what would it be? _____

_____

7) What suggestions do you have to ensure that operators could provide feedback and suggestions to project managers about ETS projects?_____

_____

_____

8) In the future, work e-mail addresses may be provided to all operators. What are your thoughts regarding this? _____

_____

9) **Any other comments** regarding ETS' internal communication processes?

_____

_____

_____

_____

_____

(if more space is needed, please write of back of this page)

Thank you for taking the time to complete this survey. Your feedback is very valuable in making decisions regarding internal communications.

Appendix D Communication Tools Definitions

Bulletin Boards: Contain information such as service changes, fare products display, various committee information etc. Each garage has several bulletin boards for information.

Digital Sign In Slip Message: Operators sign in at Dispatch, scan their ID card and a slip will print out which tells them their shift and route for the day. There is space at the beginning of this print out for messages.

Dispatcher: Responsible for dispatching the buses. Operators are required to sign in where the dispatcher sits.

ETS TV: Digital TV that is located in all operator lounges in the garages and in the ETS downtown offices. Messages are geared towards operators.

Immediate Supervisor: Who the operator directly reports too.

Inspector: Responsible for ensuring buses arrive and depart on time from the various timing points which could be at a transit centre or bus stop.

In Transit: External newsletter which provides general public information on what is happening in ETS, service change information, and what is upcoming. The newsletters are displayed near the front of the bus, in transit centres, and at select libraries. Each garage receives about 50 copies.

Operator Focus Group: Monthly meetings per garage where items are brought forward advise operators' of new projects or to seek operators' feedback. Every quarter a joint focus group is held that brings together operators from all the garages including DL MacDonald and Percy Wickman (DATS).

Running Board Message: Each operator takes a running board at the start of their shift which is specific to their route they are driving for the day. The route information is attached to a clip board and there is space at the end of the route information to add a message.

Table Top Display: Poster which is posted on a 3-panel display board. This display sits on top of a table typically in the operators lounge or near the Dispatch area.

Transit News: Internal newsletter which provides ETS employees information on what is happening within ETS/COE and what is upcoming. Copies are made available in each garage.

White Board Message: Movable white board where supervisors either write the message on the board or tape operation notices. The board is displayed in various areas of the garage.

Appendix E Analysis Model

Question 1. How often you use the tool?						
	Model	Covariate	Coefficient (SE)	p-value	More often	Significance
a	no					
b	Exp	Exp	0.0785 (0.0380)	0.039		S
d	Exp	Exp	-0.1141 (0.0373)	0.0023		H
j	Exp+Eng+G	Exp	-0.3170 (0.0387)	2.63e-16		E
		Eng	-0.5436 (0.1861)	0.0035	No	H
		G	+0.3668 (0.1729)	0.0339	Male	S
k	Exp	Exp	-0.2384 (0.0367)	7.81e-11		VH
l	Exp	Exp	-0.1249 (0.0307)	4.86e-5		VH
m	Eng+G	Eng	-0.3619 (0.1713)	0.0346	No	S
		G	0.3439 (0.1478)	0.0200	Male	S
n	Exp	Exp	-0.0813 (0.0346)	0.0187		S
o	Exp+Eng	Exp	-0.1515 (0.0400)	0.00015		VH
		Eng	0.4859 (0.2075)	0.019	Yes	S
p	G	G	-0.4653 (0.2143)	0.00328	Female	H
q	Exp*Eng+G	Exp	-0.2085 (0.0686)	0.00238		H
		Eng	-1.5126 (0.3438)	1.08e-5	No	VH
		G	+0.4586 (0.1785)	0.01019	Male	S
		Eng*Exp	0.1929 (0.0802)	0.01616		S
t	no					
u	Exp*Eng	Exp	-0.1003 (0.0700)	0.15		VL
		Eng	-0.9384 (0.3592)	0.00898	No	H
		Exp*Eng	+0.1868 (0.0797)	0.0191		S
v	Exp+Eng	Exp	0.0955 (0.0362)	0.0084		H
		Eng	0.3557 (0.1961)	0.0697	Yes	L
w	no					

Question ii) how effective are the tools…

Tool	Model	Covariate	Coefficient (SE)	p-value	Significance
b	Exp*Eng+L	Exp	-0.1682 (0.0646)	0.009175	H
		Eng	-0.9421 (0.3315)	0.004479	H
		Exp*Eng	0.1939 (0.0738)	0.008564	H
		L2	-0.7562 (0.1980)	0.000134	VH
		L3	-0.1339 (0.2164)	0.536	N
		L4	-0.7389 (0.1926)	0.000125	VH
		L5	-1.5895 (0.2996)	1.12e-7	VH

d	Exp*Eng+L	Exp	-0.2886 (0.0745)	0.000108	VH
		Eng	-1.0188 (0.4033)	0.0115	S
		Exp*Eng	0.2028 (0.0156)	0.0159	S
		L2	-0.8669 (0.2290)	0.000153	VH
		L3	-0.5268 (0.2483)	0.0339	S
		L4	-0.5495 (0.2244)	0.0143	S
		L5	-1.0031 (0.3221)	0.00185	H
l	Exp*Eng+L	Exp	-0.3606 (0.0706)	3.21e-7	VH
		Eng	-1.8118 (0.3645)	6.69e-7	VH
		Exp*Eng	0.3616 (0.0795)	5.37e-6	VH
		L2	0.3949 (0.2008)	0.0492	S
		L3	0.8676 (0.2211)	8.73e-5	VH
		L4	0.4984 (0.1943)	0.0104	S
		L5	0.3063 (0.3005)	0.3081	N
m	Exp*Eng+L	Exp	-0.2811 (0.0708)	7.20e-5	VH
		Eng	-1.5711 (0.3757)	2.89e-5	VH
		Exp*Eng	0.2755 (0.0800)	0.000572	VH
		L2	-0.3736 (0.2126)	0.0789	L
		L3	-0.2861 (0.2297)	0.213	N
		L4	-0.8655 (0.2053)	2.48e-5	VH
		L5	-0.8708 (0.3057)	0.004393	H
n	Exp*Eng+G+L	Exp	-0.3208 (0.0827)	0.000104	VH
		Eng	-1.4936 (0.4404)	0.000694	VH
		Exp*Eng	0.2474 (0.0923)	0.00738	H
		G	-0.4411 (0.1844)	0.0168	S
		L2	-0.5025 (0.2459)	0.0411	S
		L3	-0.5378 (0.2593)	0.0381	S
		L4	-0.7519 (0.2310)	0.001133	H
		L5	-0.4322 (0.3455)	0.211	N
o	Exp*G	Exp	-0.1484 (0.0397)	0.000187	VH
		G	-1.0050 (0.4764)	0.0349	S
		Exp*G	+0.2040 (0.0976)	0.0366	S
p	G+L	G	-0.3830 (0.1736)	0.0274	S
		L2	-0.7131 (0.2414)	0.00314	H
		L3	-0.4738 (0.2594)	0.0678	L
		L4	-1.7646 (0.2325)	3.17e-14	VH
		L5	-1.2691 (0.3346)	0.000149	VH
t	L	L2	-0.3228 (0.1959)	0.0993	L
		L3	0.0871 (0.2137)	0.684	N
		L4	0.0651 (0.1907)	0.733	N
		L5	-0.6973 (0.2970)	0.0189	S
u	G+L	G	0.3698 (0.1527)	0.0155	S
		L2	-0.3481 (0.2000)	0.0818	L
		L3	-0.0747 (0.2154)	0.729	N
		L4	-0.1396 (0.1938)	0.471	N
		L5	-0.7756 (0.3003)	0.00982	H
v	Eng+L	Eng	-0.3705 (0.1657)	0.0254	S
		L2	-0.3483 (0.1964)	0.0761	L
		L3	-0.0257 (0.2123)	0.904	N
		L4	-0.1972 (0.1891)	0.297	N

		L5	-1.1498 (0.3059)	0.000171	VH

Question 3. How important is to have the following messages communicated to you, the operator?						
	Model	Covariate	Coefficient (SE)	p-value	More important	Significance
a	Exp+G	Exp	-0.1669 (0.0371)	6.87e-6		VH
		G	-0.4488 (0.2001)	0.0249	female	S
b	Exp	Exp	-0.2370 (0.0550)	1.63e-5		VH
c	Exp*Eng+G	Exp	-0.4158 (0.0846)	8.87e-7		VH
		Eng	-1.1210 (0.4855)	0.0210	no	S
		G	-0.4778 (0.2134)	0.0252	female	S
		Exp*Eng	0.3090 (0.0961)	0.0013		H
d	Exp+Eng+G	Exp	-0.1153 (0.0369)	0.00179		H
		Eng	-0.5430 (0.2172)	0.01244	no	S
		G	-0.5616 (0.1951)	0.00400	female	H
e	no					

Question 4. How satisfied are you with being kept "in the loop" of the following information?					
Model	Covariate	Coefficient (SE)	p-value	More satisfied	Significance
a Exp	Exp	-0.0772 (0.0318)	0.0152		S
b no					
c no					
d Eng*G	Eng	-0.7255 (0.3801)	0.0857	no	L
	G	-0.6553 (0.3926)	0.0181	female	S
	Eng*G	1.0740 (0.4316)	0.0951		L
Exp	Exp	1.4111 (0.4867)	0.00374		H

Question 5i) Which tools do you have access to at home?

	Model	Covariate	Coefficient (SE)	p-value	Significance
i) Landline phone	Age	Age	0.4375 (0.1160)	0.000161	VH
i) Cell Phone	Exp+Eng	Exp	-0.2659 (0.0692)	0.000123	VH
		Eng	1.2971 (0.3422)	0.000150	VH
i) Internet	Exp+Eng	Exp	-0.3531 (0.0744)	2.08e-6	VH
		Eng	1.2813 (0.3672)	0.000484	VH
i) Email	Exp+Eng	Exp	-0.1730 (0.0647)	0.00751	H
		Eng	-0.8952 (0.3263)	0.00607	H

Question 5 iii) if you use social media sites, which ones do you use?

Soc. media	Model	Covariate	Coefficient (SE)	p-value	Significance
facebook	Age+G	Age	-0.5086 (0.1156)	1.08e-5	VH
		G	-0.7163 (0.2840)	0.0117	S

Soc. media	Model	Covariate	Coefficient (SE)	p-value	Significance
none	Exp	Exp	0.2709 (0.0572)	2.13e-6	VH

Exp = Experience Eng = English as first language G = Gender L = location, e.g L2 = garage 2.

Appendix F Informal Discussion Information

Key points that came out of the informal discussions with the supervisors:

- The divisional supervisors indicated that it is hard to communicate face-to-face with employees when they will not be compensated for it. When operators are in the garage the only time they get paid is if it is for their annual performance evaluation.
- One supervisor and one divisional are on call during evenings and weekends. Operators may not be aware that supervisors are on call during the evening and weekends. The risk of advising the operators is that the supervisors may get inundated with phone calls. Phone calls are currently being filled through control or Dispatch.
- Divisional supervisors feel that new employees are needier and they want face time with supervisors to talk work related issue or personal issues. The new generation of employees do not worry as much about monetary compensation as wanting to be engaged with their work duties.
- When candidates apply to be an ETS operator and if their first language is not English they go through a pre-screening test which includes an English test. The issue with the test is it is not tested for reading, the main outcome is to see if they can read maps. Therefore some of the operators do not understand English which raises a concern especially as most of the messages intended for the operators are in text format which is required to be read.
- In the operators performance expectation guidelines they are required to read the operators notice on a daily basis. This expectation is hard to monitor therefore it is difficult to know if operators are reading the notices are not.

- It was indicated that there is a “disconnect” between front line and senior management. Operators do not feel supported and do not know what is going on in the organization which creates a disengaged work force. Resources need to be channeled in order to create a more effective system to communicate with operators.
- The operators lounge is intended for employees to relax either before or after their shift. This should be a “safe place” where if a supervisor comes in, it is on an informal casual basis. Some supervisors will pull operators out of the lounge to talk about a customer complaint which creates a negative atmosphere in the lounge.