

2005

Governing at-a-distance: Outsourcing, network prudentialism and quality assurance standards.

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Governing at-a-distance:
Outsourcing, Network Prudentialism and
Quality Assurance Standards

By

Dale Spencer

A Thesis
Submitted to the Faculty of Graduate Studies and Research
Through the Department of Sociology and Anthropology
in Partial Fulfillment of the Requirements for
the Degree of Master of Arts at the
University of Windsor

Windsor, Ontario, Canada

2005

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ISBN: 0-494-09818-X

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ISBN: 0-494-09818-X

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Accounting and bureaucracy proceed by tracings: they can begin to burgeon nonetheless,
throwing out rhizome stems, as in a Kafka novel.

-Gilles Deleuze & Felix Guattari
A Thousand Plateaus

ABSTRACT

Organizational research has entered into a network paradigm (Borgatti & Foster, 2003). Despite the proliferation of literature on networks, very little emphasis has been placed upon elucidating the ways in which networks are governed. This thesis moves to understand network governance within the context of the North American automotive industry. Within this industry, lead firms, specifically General Motors, Ford and Daimler-Chrysler, have outsourced a substantial portion of parts production. This thesis argues that in an aim to govern their supplier relations, North American lead firms' imposition of QS 9000 and now ISO/TS 16949 quality assurance standards upon their suppliers, is a governmental programme of network standardization. Constitutive of this programme is failure. Nodes situated in the network are called upon to pre-emptively manage failures. Drawing upon the governmentality literature, particular attention is given to the centrality of probabilizing failure and the techniques used to manage failure. Utilizing the quality assurance standards themselves, and 15 in-depth interviews with quality assurance managers by the author at different Tier 1 part supplier plants, this article explores the moral rationalities and technologies of performance used to manage failures. This thesis focuses on the creation of part narratives, and particularly, on the quality audit and its role in governing the conduct of part suppliers at-a-distance. Lastly, this thesis focuses on the network prudential subject, who is called upon to pre-emptively manage failures on behalf of the network.

Keywords:

Automotive Industry, Outsourcing, Networks, Quality Assurance Standards, Failure, Risk, Governmentality, Audit

DEDICATION

In memory of Harold Spencer

ACKNOWLEDGEMENTS

Thank you first to my parents, Richard and Bonita Spencer, whose unfailing love and support has carried me through the tough times. To my sister, Blair; thanks for always making me laugh and for remaining my 'little' sister. To my grandparents, Mary and Richard Dunn and Mary Spencer; thank you for the support through the years. To Lisa Smylie, for without whose love, I would not have made it through the writing stage of this work. I have never met someone who as enriched my life to the extent you have. I also reserve deep gratitude to Dr. Anita Lacey and Kelly Greenfield for being the older sisters I never had and whose patience and love has made me a better person.

The late Michel Foucault, in an interview at the University of Vermont, when asked why he came to the university, proclaimed in what appears to be a self-deprecating statement: "I am not a writer, a philosopher, a great figure of intellectual life: I am a teacher". He goes on to say, "There is a social phenomenon that troubles me a great deal: Since the 1960s, some teachers are becoming public men with the same obligations. I don't want to be a prophet and say, 'Please sit down, what I have to say is very important.' I have come to discuss our common work." I believe that the essence of these statements most appropriately captures my relationship with my advisor, Dr. Daniel O'Connor. I would first like to thank him for being foremost a good teacher. Thank you for allowing me to pursue this project and always providing me with the necessary guidance. Your continual support will never be forgotten and I hope we can always discuss our 'common work'.

I would like to thank Dr. Alan Hall for showing me, through word and deed, the politics of labour. Thank you for bringing me on the Auto 21 project, as the experience gained from the project has significantly contributed to my academic development. Lastly, thank you for your guidance, support, and comments on the proposal and final manuscript of this project. To Dr. Anne Forrest, your emotional strength has been an inspiration. Thank you for your feedback and comments on drafts of the proposal and final thesis. You have truly made this a better piece.

I would like to thank the Department of Sociology and Anthropology at the University of Windsor for making my time here as a Masters candidate an enjoyable experience. Specifically, I would like to thank Dr. Suzan Ilcan and Dr. Eleanor Maticka-Tyndale for taking time out of their busy schedules to impart invaluable advice and allowing me use of your research labs. Thank you Dr. Lynne Phillips, Dr. Tanya Basok, and Dr. Alan Sears, you have always been very supportive. To Perry Pittao, Joy Cecile, Lena Razwan and Andria Turner, thank you for always being kind and bright faces in the Department.

In no particular order, I am particularly thankful to the following individuals for their friendship: Dave Rivait, Brad Spencer, Phil Boyle, Steve Richter, Arafat Rubyiat, Ryan Cotter, Helen Chagigiorgis, Richard Eagen, Maya Ruggles, Katie Young, Dan Holland, Jeff Brown, Nick Chronopoulos, April Girard, Mike Bratton, and Niki Carlan. Lastly, I am thankful to all the insipid opponents I have faced in my life, for you provided me with the impetus to work through adversity.

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Introduction

In the last 20 years, the North American automotive industry has experienced a significant restructuring. Lead firms, such as Daimler Chrysler, General Motors, and Ford, have now outsourced a considerable portion of parts production and assembly.¹ Within this arrangement, lead firms face the problem of governing a complicated network of suppliers in an effort to achieve the timely delivery of quality parts. To address this, these North American lead firms have imposed ISO/TS 16949 and QS 9000 quality standards on their Tier 1 outsourced part suppliers - those that supply directly to lead firms. This thesis focuses on the efficacy of quality standards, and the attendant practice of auditing, in governing-at-a-distance outsourced relations. One of the central arguments herein is that the imposition of quality standards by lead firms upon their suppliers is a governmental programme of network standardization. This governmental programme aims to inscribe a specific corporate ethical code and foster moral conduct thus facilitating failure management among those suppliers that seek to maintain their positions within the automotive supply chain network. I suggest that attendant to this governmental programme of network standardization are part narratives that produce discourse on suppliers' management of failure and technologies of performance (Dean, 1999a), which are employed to manage the risk of failure. Of particular importance is the quality audit which serves as the control of control (Power, 1997). Through interviews with quality assurance managers at different Tier 1 parts supplier plants, particular attention is paid to the ways in which quality assurance managers, utilizing technologies of performance, aim to manage the failure of not meeting customer (lead firm) requirements. A governmentality perspective is employed to examine the ways quality

assurance managers endeavour to manage the risk of failure and render workers accountable to quality-related standards. These quality assurance managers engage in a form of *network prudentialism* to manage the failures endemic within the new 'networked' automotive economy.

Networks, Governance and Governmentality

Borgatti and Foster (2003) note that within organizational research, there is an emergence of a network paradigm, characterized by a proliferation of network typologies and varying levels of analysis. A segment of this burgeoning literature focuses on the how nodes (understood as persons, teams or organizations) situated within networks are governed. Within this literature on the governance of networks, power is conceived of as stored at particular institutional sites, such as economic corporations or state apparatuses. This power, in turn, is applied across a social field (Walters, 2004: 32). This sociology of governance frames governance in normative and descriptive terms; normative in the sense that governance can be good or bad and descriptive in the sense that these studies portray the patterns or structures that emerge due to the interactions of a range of political actors, associations and organizations. Governance refers to the results of these interactions and interdependencies, which produces self-organizing networks (Rose 1999:16-17).

Walters (2004) has recently argued that this understanding frames the governance of networks as merely a game of assimilation and integration, devoid of any politics of struggle or conflict (Walters, 2004: 36). Another shortcoming of this understanding of governance literature is that it does not attend to the failure of governance; rather, that governing mechanisms are conceived of as more or less successful (Jessop, 1999: 6;

Rose, 1999; see Higgins, 2004; Malpas & Wickham, 1995). Jessop (1999: 6) however, argues that this emphasis on the successes of network governance overlooks an equally salient element of all forms of governance: the failure of governance strategies. He avers that what is important about emphasizing failure of governance is that it is the failure to fully govern and stabilize potential objects of governance that opens room for competing governance strategies and assures that the “future remains pregnant with a surplus of possibilities” (1999: 6).

In lieu of utilizing this often normative and descriptive position on network governance, this study will employ an analytics of government.² An analytics of government, derived from the work of Foucault, is not normative in the sense that it does not define what is good or bad governance, nor does it describe the structures or patterns of governance (Dean, 1999; Rose, 1999). This is a perspective that opens up lines for criticism, to expose the taken-for-granted elements of doing things and allows for an analysis of specific conditions under which particular entities emerge, exist and change (Dean, 1999: 20-21). This analysis, according to Rose, tries to “diagnose an array of lines of thought, of will, of invention, of *programmes and failures*, of acts and counter-acts” (emphasis added, 1999: 21).

A governmentality perspective avers that to govern human conduct is the means of shaping, regulating, and controlling, so as to achieve desired ends (Dean, 1999: 11 Rose, 1999: 19). Within this perspective, according to Dean (1999), government is

...any more or less calculated and rational activity, undertaken by a multiplicity of authorities and agencies, employing a variety of techniques and forms of knowledge, that seeks to shape conduct by working through our desires, aspirations, interests and beliefs, for definite by shifting ends and with a diverse set of relatively unpredictable consequences, effects and outcomes (1999: 11).

More explicitly, studies of governmentality examine the rationalities of particular regimes of truth pertaining to the conduct of conduct. Further to this, attention is paid to the ways of speaking truths, the persons authorized to speak truths, and the ways of enacting truths, such as the mechanisms for putting the conduct of producing auto parts into discourse in the form of parts narratives. The part narratives speak the 'truth of production' by making it known in particular ways through the enactment of particular technologies. This perspective is therefore concerned with the creation and assemblage of particular apparatuses and devices for producing knowledge and exercising power, and for intervening in areas that come to be known as problematic (see Rose, 1999: 19).

Within this perspective, technologies serve as the mechanisms that aim to both produce known-objects (actualities rather than realities) and to act on these actualities of thought, thus translating governmental objectives into specific programmes known as governmentalities (see Dean, 1999: 31; Rose, 1999: 51). Technologies of government produce effects, through, for example, the training and modification of individuals and objects constituted as such, through a process which Foucault (1988) describes as a "matrix of practical reason" (Foucault, 1988: 18). Accordingly, Foucault (1976) provides that this analysis is not focused upon asking ready-made subjects how, why, or by what right they consent to being subjugated, but on revealing how actual relations of subjugation both produce and control the subjects and objects of governance. For example, how subjects and objects come to be constituted and acted upon as risks or where risk is constituted as internal to production rather than external as in the 'market'. The task of this analytic is therefore to interrogate the discourses that describe and through their practices, systematically form the *objects* and *subjects* that result from this

programme of governance that is produced in this relationship between parts suppliers and automotive ‘manufacturers.’

Governmentality and the Risk of Failure

According to Dean (1999a), a governmentality perspective with respect to risk is an analysis of the “forms of risk as among the ways in which we are required to know and act upon ourselves and others today in a range of *moral* and political programmes and social technologies” (emphasis added, 1999a: 136; see also, Rose & Miller, 1992). Thus, the conception of risk management as infused with an ethical framework implies that programmes of government seek to constitute and monitor moral regimes (see Dean, 1999: 11). Ericson, Barry and Doyle (2003: 67) identifying this inherent moral element of risk management regimes state:

Risk management practices are ... integral to moral regimes. They effect moral regulation by making people think of risks in terms of their own ethical conduct with respect to them. Ethical conduct includes being knowledgeable about risks and doing one’s part to prevent, minimize and distribute them.

This dissemination of knowledge about proper risk management is necessarily conducted in a moral fashion. Specifically, governing bodies produce moral inventions that seek to responsabilize the governed subjects under the guise of prudence (O’Malley, 1992: 261). This construct of governance removes the key conception of regulating subjects by collective risk management and relays the responsibility for proper risk management to individuals and groups. Subjects are thus engaged in a continual process of procuring techniques to ward off future unwanted circumstances. According to O’Malley (1992), a “New Prudentialism” obtains where individuals must take it upon themselves to prevent future occurrences, defending against anything that may threaten their future. In this

procedure, security and welfare become the responsibility of private individuals, who, through the pursuit of self-interest, no longer reliant on 'the state' for their safety, are active participants in creating a safety net (O'Malley, 1992: 266).

O'Malley (1999) argues that contemporary issues of governance are dominated by risk management. In *Governmentality and the Risk Society*, O'Malley (1999: 139) emphasizes this preoccupation:

Governmental problems are imagined in terms of their potential harms and probabilistic outcomes rather than their transgressive nature. Such governance is thus future oriented rather than focused on the past, and more specifically focused on prevention, risk minimization and risk distribution.

Proper governance thus requires a level of awareness of the possibility of harmful future occurrences. Upon recognizing the risks involved, the governing strategies must be oriented to the development of failure-minimizing practices. A focus on prevention of undesirable occurrences and risk distribution becomes vital to effective governance. Moreover, this process includes a constant demand to gain knowledge of future risks. In turn, if the events of the future are uncertain and anything can be conceived of as risk-bearing, then responsible government must seek to minimize risk through an insatiable demand for knowledge relating to risk (O'Malley, 1999: 139). This knowledge production becomes a self-perpetuating process in which the accumulation of knowledge serves only to identify new sources of risk or potential failure.

The failure to protect oneself against risk or the inability of a technique to minimize risk invariably lead to the repositioning and redeployment of additional technologies aimed at managing risks. Thus, any programmatic of government should be

understood as the realm of design and re-designing of invention and transformation (Miller & O'Leary, 1998). Rose (1999:260) argues:

The incompleteness, fragmentation and failure of risk assessment and risk management is no threat to such [risk-based] logics, merely a perpetual incitement for the incessant improvement of systems, generation of more knowledge, invention of more techniques, all driven by the technological imperative to tame uncertainty and master hazard.

Tied to the cultivation and acknowledgement of perceived risks is an effort to preemptively manage systemic failures, and further, to think of failure in probabilistic terms. Institutions, accordingly, organize themselves around such knowledge and its continual transmission. Professional risk management plays a pivotal role in probabilizing and managing the risk of failure (O'Malley, 1999: 139). Consequently, it becomes imperative for professionals to invent or procure technologies that can adequately prevent future adverse circumstances. In the new networked world, such as that of auto parts production, insecurity of future events is a major preoccupation.

Dean (1999a) contends programmes of government aimed at managing risk also utilize technologies of performance (Dean, 1999a: 148-9). Technologies of performance are focused on the enlistment and accountability of a population within a given locus to think in terms of risk. Accounting practices serve as effective technologies of performance which enable the governance of conduct-at-a-distance (Rose, 1999: 152; Humphrey, Miller & Scappens, 1993: 17), that is, to promote effective governance without the necessity of lead firms having to "do too much of the governing" (see Dean, 1999). Technologies of performance aim to conjoin responsibility and calculation and thereby control conduct by producing responsible and calculating part suppliers (see Miller, 2001: 380). The quality 'audit' then plays a pivotal role as an independent 'third

party' in ensuring levels of quality standardization within the networks of part suppliers and lead firms. In this governmental capacity, the audit function serves as "the control of control" according to Power (1997).

The following analysis applies a governmentality perspective of the risk of failure to examine the moral rationalities in a specific governmental programme of auto part network standardization. An investigation will be made of the probabilistic techniques used to manage failure pre-emptively rather than after-the-fact. Here the role of part narratives in putting net-work (the object) into a discourse of managing failure will be examined in relation to the imposition of quality standards such as QS 9000 and ISO/TS 16949 upon supplier firms. The analysis will also inspect the technologies of performance employed to manage the risk of failure and the role of internal and external auditing to govern nodes within the network to ensure that they are pre-emptive in their failure management practices, and are effective in creating network prudential subjects. Fifteen in-depth interviews with quality assurance managers at different Tier 1 parts supplier plants, along with an examination of the narratives of the quality standards themselves, are used to support the analysis of this governmental programme of network standardization.³

The Automotive Industry

The North American auto industry, from 1950 to 1980, was characterized as a hierarchically-oriented, vertically-integrated bureaucracy with most assembly and part production performed internally by a single corporation (Castells, 1996: 164; Herzenberg, 1997: 266). Humphrey (2003: 124) indicates that these assemblers had a nominal amount of part suppliers comprised of two groups: subcontractors and catalogue suppliers. Subcontractors were provided the design of parts and were contracted on a short-term

basis. Catalogue suppliers designed their own products but did not tailor products according to the assembler. This 'Fordist' vertically-integrated bureaucracy depended on large and stable markets to achieve efficiency through the highly specialized use of resources devoted to long runs of standardized products (Macduffie and Frits, 1997: 11). The principle of mass standardization within the Fordist regime rested both upon production and consumption. As Beck (2000:68) argues, "this form of production, work and consumption created a society in which people's lives were as highly standardized as the sheet steel from which the cars were welded together".

Beginning in the 1980s, the vertically-integrated Fordist production model was problematized for its rigidity and also lacking the flexibility to adapt to changing, continually fluctuating, and diverse global markets (see Piore and Sabel, 1984; Deyo, 1996: 2; Beck, 2000: 77). Lead firms began to contract out as a method of reducing costs, improving asset efficiency and increasing profits in an effort to keep up with global competitive markets (Clott, 2004; Zullo, 2004). The resultant production system, displacing the older vertically-integrated bureaucracy, was a horizontal network comprised of lead firms (in the North American context, Ford, Daimler-Chrysler and General Motors and Japanese transplants)⁴ and different levels of 'tiered' part supplier firms (Castells, 1996: 160, 164; Sabel, 1993; Casper & Hancke, 1999: 964).⁵ As a result of the restructuring of the industry that has taken place over the last twenty years, lead firms have set up elaborate parts supply networks.

In the North American automotive industry, Tier 1 outsourced part suppliers for General Motors, Ford, and Daimler-Chrysler have now taken on more responsibility than in the past, as they are becoming progressively engaged in product design and

programme management (Collins, et al., 1997). Also, in many cases, suppliers are not wedded to a sole customer, rather they multi-source amongst many customers (Rutherford, 2000: 741). Part of this outsourcing trend are two recent developments, both integral to and characteristic of the restructuring in the Western automobile industry, namely modular manufacturing (Holmes, 2004; Larsson, 2002) and just-in-time inventory procedures (Smith, 1997; Rinehart et al, 1997).

First, modular manufacturing involves the design, manufacture and assembly of full modules by Tier 1 part suppliers who in turn supply modules for final assembly by the lead firms. A module, according to Larsson (2002), should be understood as differentiating between a car in its entirety or as a product comprised of various modules. There are two primary types of modular assembly. The first type involves the transfer of the subassembly of modules from the lead firms' final vehicle assembly plants to supplier manufacturing facilities. The second type involves outsourced parts suppliers producing fully assembled modules. For example, a supplier will assemble and deliver a full door module to the lead firms. This latter type enables final assemblers to shift responsibility of not only manufacturing of individual parts but the design and continual innovation of full modules to the outsourced parts suppliers (Tu et al., 2004; Zullo, 2004).⁶

Second, 'just-in-time' manufacturing, first practiced by Japanese car makers, is a delivery system whereby firms order the exact quantity of parts needed at the precise time when they are required (Shimizu, 1998). Just-in-time delivery cuts down on production costs by reducing stocks and by delivering in small and timely batches, thus encouraging efficient production and the minimization of wastes (Shimizu & Shimokawa, 1998: 146; Smith, 1997:319).⁷ Based on these two principal trends and the timely delivery and

knowledge transfer requisite to operate under these conditions, suppliers and final assemblers are subject to the 'tyranny of proximity' (Urry, 2004; Amin & Thrift, 2002). Tier 1 suppliers engaging in more complex, modular manufacturing face sequential just-in-time delivery, where specific parts have to be delivered in the same sequence and synchronized with the assembly process of the customer. Lead firms in this case, order a specific component that is destined for one particular car on the assembly line. As such, suppliers have to maintain close spatial proximity to their customers. If not already spatially close to their customers, Tier 1 part suppliers must relocate their operations in closer proximity to their customers to maintain or take on new business (Holmes, 2004).⁸ While this may be the case with more complex modular systems, for suppliers providing less complex modules, those modules that are standard on a vehicle, but nonetheless are delivered on a just-in-time basis, the closeness of proximity is not as much of a salient feature.

Within vertically integrated systems of production, final assemblers designed and manufactured most parts and kept large inventories. Consequently, assemblers had the technological capacity and time to inspect parts before they were used in assembly (Casper & Hancke, 1999: 966).⁹ Within a network of suppliers, in which just-in-time delivery systems are the norm, lead firms and their suppliers do not keep large inventories. Lead firms consequently face two key risks: defective parts, particularly of a serial nature, that can shut down the entire production chain, and the failure to coordinate the immense and complicated network of suppliers (see Fligstein & Freeland, 1995: 22; Castells, 1996: 158). The problem for lead firms is to ensure their suppliers are governed effectively so that parts are of sufficient quality and are delivered in a timely manner.

Risk in Economy

The problematization of the vertically integrated bureaucracy of Fordist production led lead firms to shift to a horizontal supply chain network. This shift entails further manufactured uncertainties and insecurities. Returning to Beck (2000: 72), he contends that in the risk regime of the second modernity in which we find ourselves is also a network regime. This network regime, while escaping the shackles of the rigid segmented and hierarchical division of labour of the Fordist regime, and consequently the valorization of capital, brings with it new unforeseen uncertainties and insecurities (Beck, 2000: 72-77).

To adjust to these uncertainties and insecurities, according to Johnston and Shearing (2003), risk-based thinking has become a central feature of the contemporary corporate mentality. To this end, the efficacy of corporate capitalism is reliant upon the deployment of rational economic calculation of corporate executives (Johnston and Shearing, 2003; See also, Power, 2003a). This calculation calls for an assessment of risks, based on the alleged costs and benefits of an investment. A company may choose to retain a given level of risk if the benefits accruing to it exceed or outweigh any attendant 'disbenefits' (Johnston & Shearing, 2003: 76-8). To reduce uncertainties in these environments, corporations will adopt various strategies to manage such risks through maximizing organizational flexibilities (Ilcan, O'Connor & Oliver, 2003: 628). Framed in this light, lead firms in the automotive sector seek to spread risks by contracting out production to smaller producers (see Priest 1990; Lowi, 1990). By developing elaborate concatenations of production, lead firms are susceptible to the negligence of producers that could supply less than acceptable goods and services. Thus, embedded within a

network of suppliers and customers, corporations make assessments of the risks involved in any action. Far from relying on the obligatory element of the conventional, bilateral contractual relationships, and trusting suppliers to maintain quality-oriented production processes, General Motors, Ford and Daimler-Chrysler have opted to govern through 'third party' quality assurance standards, aiming to assure quality and consequently, to reduce the presumed 'disbenefits' associated with conventional forms of governance such as disciplinary apparatuses, internal structures of authority, the 'market' (i.e., trusting contracted parties to supply quality parts in a timely manner), or formal governmental apparatuses (i.e., using legal means to redress failed contractual obligations).

Governmental Programme of Network Standardization

Within the limited literature on quality assurance standards, there is a marked accentuation on the normative element of standards and standardization regimes.¹⁰ The standardization of firms is becoming the requisite for market participation. A necessary point of distinction is that these quality assurance standards entail process-based norms that deal specifically with 'how' products are made, rather than attending to the technical specifications of products and materials (Ponte & Gibbon, 2005; Power, 2002; Casper & Hancke, 1999; Walgenbach, 2001).¹¹

In the North American context, largely due to the restructuring that has occurred, Daimler-Chrysler (Chrysler at the time), Ford and General Motors devised and imposed quality standards upon their suppliers. Almost synonymous with the inception of the outsourcing trend, these major automobile companies had their own supplier certification standards.¹² Suppliers that serviced all of these companies had to abide by proprietary standards and specifications as dictated by each lead firm. Each lead firm had their own

auditing team that visited supplier facilities to assess whether suppliers were abiding by their self-generated quality standards. These systems were problematized because of the failure of suppliers to keep up with the divergent documentation and the profusion of different inspection, testing and quality assurance activities required by each proprietary standard.¹³ This problematization led to a replacement of these divergent systems by the QS 9000 quality standard.

In 1988, the then Chrysler corporation, Ford Motor Company and General Motors corporations' purchasing and supply vice presidents, as well as the American Society for Quality Control, chartered a supplier Quality Requirement Task Force to standardize their quality standards (Bandyopadhyay, 1996). In 1994, this task force presented QS 9000 which, by the end of 1997, became the standard for which all suppliers to General Motors, Daimler-Chrysler and Ford had to be certified. Conformance to the QS 9000 quality standard requirements was to be verified by third-party audit by a customer-approved QS 9000 registrar. Comprising one third of this standard was the ISO 9000 quality assurance standard (see Casper & Hancke, 1999; Power, 2002; Walgenbach, 2001) and the last two sections were sector specific requirements and customer specific requirements. The aim of this standard was to integrate continuous improvement strategy into major functions of a supplier's organization, placing emphasis on defect reduction and reduction of variation and waste (Katha, 2004: 334). This standard was later problematized for failing to return the improvements in quality originally sought by General Motors, Daimler-Chrysler and Ford in bringing out this standard. This standard is in the process of being replaced by the ISO/TS 16949 quality standard.¹⁴

The ISO/TS 16949 is an ISO (International Organization for Standardization) technical specification that represents comprehensive quality management standard for the global automotive industry to achieve “world class” levels of product quality, productivity, competitiveness and continual improvement. The International Automotive Task Force, which consists of an international group of vehicle manufacturers and national trade associations, developed these standards in conjunction with the ISO.¹⁵ Automotive suppliers to lead firms in North America are mandated to have this certification by the end of 2006.¹⁶

The common rationality of quality standards is an ethic which dictates the rules for supplying to Daimler-Chrysler, Ford and General Motors. Quality standards offer the principles for best business practices for suppliers.¹⁷ Suppliers develop of a matrix that pertains to all areas of their organization, from receiving, through the production process, to shipping (c.f. Ezzamel, Lilley & Willmott, 2004:790). The efficacy of these quality standards lies in the ability to outline what are best business practices, establishing company objectives and further to this, indicating the right behaviours in any given action of members within an organization. Quality managers noted this element of quality standards:

... TS 16949, that's called an ops package, it's a matrix, that encompasses the whole plant from receiving to shipping. You know your matrix on the floor [as] your product realization.... Your customer has a need like you do, “I wanna have this part” so this starts the whole process [Interview 3].

As noted by this manager, these matrices have a strong customer focus which aim to focus suppliers' behaviours continually in relation to their customers. More and more, emphasis is placed on senior management involvement in setting and communicating quality objectives, allocating resources and effectively integrating these into business

plans. Suppliers are to perform in accordance with customer expectations with respect to quality and on-time delivery.

Quality standards also provide that suppliers have to demonstrate a strong commitment to improve their own supply base. Of the Tier 1 suppliers included in this study, most confirmed that their own suppliers had to have at least QS 9000 certification and eventually ISO/TS 16949 certification. This is necessary to ensure that their suppliers live up to the expectations of the standard and, therefore, provide parts of sufficient quality and on-time delivery. One quality assurance manager illustrates the potential threat that their suppliers could pose to their organization if they were to supply parts of insufficient quality: “You know if you’re not rating your suppliers ... you have to keep an eye on your suppliers because those are the ones that can hurt you the most.”

[Interview 2]. The effect of these standardization schemes is a spreading of conformance to the standard. This sets the rules of the supplier network and in effect abject those that do not abide by and maintain their quality certifications (see Rose, 1999: ch. 7). In the subsequent section, the role of part narratives in providing information regarding suppliers’ conformance to the standards and failure management practices will be provided.

The Making of Part Narratives

Ponte and Gibbon (2005), in their examination of the governance of the global coffee and clothing industry, note that through quality standards, lead firms are able to embed complex quality information that, in turn, communicates information about the attributes of a product. These authors cite that rules and conditions of participation encoded in quality standards are the key operational mechanisms of governance (Ponte

and Gibbon, 2005: 3), insofar as knowledge of quality becomes embedded in technical instruments such as standards, resulting in less need for personalized relationships. In this context, this is ensured by third party certifiers who confirm that suppliers are in accordance with the specified codes of conduct for producing products that are encoded within quality standards. Firms are then able to determine if the narrative encoding the product follows the codes of conduct laid out in the standards. As a result, governance between firms is more of a 'hands off' coordination – at-a-distance. Trust is then shifted to a specific code of conduct, rather than embedded in corporate relations (see Ponte and Gibbon, 2005: 15).

In this governmental programme of standardization, quality standards dictate that suppliers demonstrate that the design and process for producing parts (i.e., the narrative form rather than the part itself) accords with the specified standards of quality. Suppliers achieve this accordance through the Production Part Approval Process (PPAP). Beginning with QS 9000 and continuing with ISO/TS 16949, North American lead firms are able to produce complex product information through the use of PPAP. PPAP is required documentation which is submitted by suppliers, along with their parts, to their customers. PPAP describes the process of manufacturing a part, including the engineering design and the production process in terms of location, material, or machinery.¹⁸ Suppliers must notify their customers in the event of a change to any of the aforementioned factors. PPAP also requires the provision of information regarding an organization's suppliers (Bandyopadhyay, 1996). The rationale of the PPAP process is to ensure that suppliers of components comply with design specifications and can run consistently without affecting the customer's production line (Zeidler, 2003). Void of a

PPAP, lead firms will not purchase a part from a supplier. This submission system creates the narrative of a part and allows lead firms to gather complex information about their suppliers and the process by which their suppliers have assured that parts are of sufficient quality. The PPAP process includes the generation and collection of information on how suppliers have managed the risk of failure by means of a design and process Failure Mode and Effects Analysis (FMEA).

Probabilizing the Risk of Failure

Within this governmental programme of network standardization, the fulcrum of managing failure is through a Failure Mode and Effects Analysis (FMEA). FMEA is based on three fundamental questions: What can go wrong?; If something does go wrong, what is the probability of it happening?; and; What are the consequences? (Stamatis, 1995: xx). FMEA is a specific methodology of evaluating and managing a system, design, process or service for possible ways in which failures, problems, errors and risks can occur (Stamatis, 1995: xxi). As part of PPAP, automotive suppliers are required to conduct design FMEA's and process FMEA's.

In the early stages of parts design, quality managers engage in Advanced Product Quality Planning (APQP), wherein the potential risks of a part failing are probabilized in terms of detection, severity and occurrence. These failure modes are conceived of in terms of past failures experienced by a supplier, which are utilized by quality assurance managers to identify and pre-empt the probability of the recurrence of such failures in future products (see O'Malley, 2000: 465).¹⁹ A quality manager outlines this process:

There's things that you look at through the design process. You look at design FMEA's; What potential things could fail in the design? There's ratings, based on risk, or detection, severity and occurrence; Is it likely to happen? How serious if this would happen? What's the impact of that?

And, you rate those different failure modes through the design process. So, that allows you to say; OK, there's some risk here that this could fail in this fashion and what can you do to change or modify the design?
[Interview 1].

This probabilistic technique tries to foresee the perceived failure areas of a part and in turn change the design to make it more robust. Further to this, the central mentality of this probabilization of failure is conceiving of things in terms of the potential harms incurred by the customer when the part fails.

The other form of FMEA centres on contingencies related to process. A process FMEA is a document which is first developed in the APQP stage where a supplier will probabilize the failure modes of their production system and determine what their contingency plan will be when their system fails. One quality manager explains this process:

Well we need FMEA's to get through PPAP. In order to pass a PPAP, to get a signed off warrant, they have to agree with your FMEA, and your failure modes have to be accurate somewhat. Like, what would happen if, this, and this, and this. Right, what would the impact be, and what would your contingency plan be. Those are already in place before we even make a part. Before we even turn the machine on, they have to be agreed upon
[Interview 5].

While in production an FMEA in process is a live document to which quality managers, through detections that are identified, generate possible failure modes that can occur in process.²⁰ Upon identifying possible failure modes, suppliers must continually improve their systems in order to manage these failure modes. In this fashion, the creation and transmission of part narratives act discursively to provide information regarding how nodes within the network manage their failures and affirms that they are being prudent in the identification of possible failure modes of parts. In the next section, I will elucidate another side of process FMEA's, which through technologies of performance, aim to

responsibilize and render accountable production floor operators to identify defective products.²¹

Technologies of Performance and the Management of Failure

Technologies of performance centre on accounting practices. Here, subjects are rendered accountable through the setting of plans and objectives, specification of performance, targets, calculation of costs, the production of budgets and the provision of information on resource usage for the purposes of local or central management decision-making (Humphrey, Miller & Scappens, 1993:15; Miller, 2001: 380). Through the setting of standards, individuals are then free to act and use the resources as they wish and become self-calculating in accordance with the specified standards. Additionally, through the setting of standards or norms, it is possible to govern the actions and render observable the near and remote activities of individuals and to assess their deviations from economic norms. Individuals then become responsabilized to conceive of things in economic terms (Miller, 2001: 385; Rose, 1999: 152-3).

The development of standard work instructions and quality oriented training regimes are the key technologies of performance in this governmental programme of network standardization. The quality assurance standards *dictate* that for every part produced there must be an attendant work instruction that provides the method for producing a part as well as a means for identifying potential failure areas of a part in process and in design.²² These standard work instructions for the production of a specific part are developed in the APQP stage to which design FMEA's and process FMEA's are developed and translated into standard work instructions of a specific part with the *aim* of

making operators responsible for those potential failures (see chart in appendix B). One of the quality assurance managers explains this process:

Instructions are developed through the quality system through the APQP, feeding down from the FMEA, the control plan to the operator's instructions. And the operator would take those instructions and follow the instructions, be it checking the parts on a check fixture to make sure that at whatever frequency they are correct, or be it, just testing parts for weld, quality assurance or any other checks that are required [Interview 1].

Coupled with standard work instructions is a requisite training regime.²³ Required within the quality standards, suppliers are to ensure that at every stage of the production process of a specific part the operator must be trained to look for the specific failures that may occur in a part. Once they have completed the training, operators are to sign off that they have received training in relation to a specific part. In turn, quality managers build up records for each operator with respect to every part being produced. Quality assurance managers see the efficacy of training as creating a greater level of awareness among the operators as to the possible failure areas of a part. One quality assurance manager explains this effect of training:

The major contribution was the continuity of workers on the floor for knowledge, but it was training and accountability. Getting people to follow what they were supposed to do... We have been trying to give them self worth, for their jobs, more accountability, which equates into more responsibility, which equates into job pride [Interview 3].

Quality assurance managers, vis-à-vis standard work instructions and training regimes, are able to create the accountability of operators, mandating them to look for the potential failure areas of a part. Quality assurance managers assert that the provision of standard work instructions and quality training regimes assures that it is the operator's responsibility to account for the physical condition of a part as it passes through the production process. If a defective part is found, operators are obligated to bring it to the

attention of supervisors. The following quality assurance managers explain this responsabilization:

I: How does your company account for or ensure quality?

R: Everyone is encouraged, I guess if there is something wrong to bring it to someone's attention and document it.

I: Do workers account for the physical condition of the part?

R: Yes, the operators are fully responsible.

I: So it is their responsibility to account for the physical condition of the part?

R: Yes, exactly [Interview 4].

....They [operators] log on to the system, every one of our components is individually logged and traced. They are accountable for all the operations that they do on their particular [names company part], in this particular case. They don't currently log their own production numbers, they are responsible for their own SPC [Statistical Process Control] and inspection checks, and they are logged on to every station they work at [Interview 14].

Upon institution of this responsabilization of operators to detect and account for the physical condition of a part, quality assurance managers need a mechanism for assuring that operators do in fact report and manage the failures of a part. This responsabilization of operators is achieved through tracking.

Depending on the level of automation of a production process, quality managers are able to account for the level of scrap produced through paper-based and electronic-based tracking systems.²⁴ These tracking systems allow for the accounting of part failures in production that are then reported and logged in some cases to the accounting department of a supplier. If an operator reports an additional unforeseen failure area of a part in production, this is identified and the standard work instruction is updated and integrated into the quality training regimes. As such, a cybernetic system is created (see Rose, 1999) whereby this responsabilization has the effect of creating additional failure

areas of a part in production which in turn feeds back into the process FMEA and subsequently, the PPAP (See Appendix B). Also, if defective parts are shipped to a customer and it is determined that it is of a known failure area and the operator is responsible for that part, through tracking quality assurance managers are able to render product floor operators accountable and subject them to disciplinary action. As illustrated by two quality managers, this responsabilization has a two-fold effect upon operators:

... If an operator does not do their job right, we write them up for job performance and it's put down on their record. They have no leg to stand on, 'cause they have clear cut work instructions on how to perform their job. So it actually works in two ways, one so that we can use it as a disciplinary, if we need to. They have been trained on it, they signed off, they said they understood it, their trainer said they did, and yet they didn't do the job. They are going to get job performance, and if they continue they are going to lose their job. The other thing for the operators is if they have a question or not sure about ... a part, they will not hesitate to say, can I have work instruction [Interview 8].

If a guy screws up and he's kind of negligent in looking at the parts, I guess it's kind of dependent on the situation. You know, if its one piece and he doesn't catch it, and he is looking at 1000 a shift, it doesn't really help him. He's bound to miss a couple, but you try to talk to him and try to make sure he does not do something like that again. But, then there are guys that constantly not doing their job, those are guys you have to make sure you talk to and discipline. It really does depend on the situation every situation is different [Interview 13].

Through the tracking of parts, quality assurance managers are able to create clear lines of responsibility (Miller, 2001), both in rendering operators responsible for recognizing defective parts and in highlighting additional deficiencies in a part. In the case of failing to recognize known failure areas of a part, quality assurance managers are able to subject workers to disciplinary action. As illustrated, technologies of performance, through the collecting of information by operators, discursively contribute to the production of knowledge regarding additional failure areas of a part. In addition, the updating of

standard work instructions and training regimes and, in effect, the part narratives, contribute to a discursively richer information source. This facet further indicates that these part narratives serve as the linchpin for ensuring that nodes within the supply network are prudent in failure mode identification and management. In light of this responsabilization strategy and the apparent possibility for defective parts going on to a customer, quality assurance managers need some mechanism for pre-emptively controlling defective parts from being delivered. This is achieved through the quality audit.

Auditing Failure

The audit's power derives from its capacity to act upon systems of control themselves. It becomes a battery of control (Power, 1994; 1997). To perform an audit is to shape the procedure that is to be audited, in turn setting objectives, propagating standardized forms, producing new systems of record-keeping and accounting, and governing paper trails. Furthermore, the audit creates patterns of accountability (Rose, 1999: 154). Therefore, the audit enables those that aim to encourage a specific behaviour to manage risks that are inherent in any financial investment (Power, 1994; 1997). The establishment and technical practice of auditing shapes the preferences, organizational routines and the forms of visibility, which in turn sustain and confer significance to decision-making (Power, 2003: 379). The audit then, makes decisions observable and compliant to evaluation (Rose, 1999: 154). Auditing in this context should be understood as essentially an inferential practice, which employs a rather mundane set of routines that aim to facilitate judgements about the activities of professionals, managers, business people and many others (Power, 2003: 388; Rose, 1999: 154).

Within this governmental programme of network standardization, suppliers are mandated to perform internal audits to ensure that their quality assurance systems are in conformance with the standards.²⁵ For quality assurance managers, internal audits serve as a heuristic device, allowing them to gain knowledge of the production environment and of possible non-conformances within their quality assurance systems. In addition, internal audits allow quality assurance managers to verify that the necessary documentation and training is in place along the production process (Power, 1997). One quality assurance manager notes the efficacy of the internal audit as a ritual of verification:

[The audit] verifies that everything is in place and that everything is being done correctly... I will have another guy at another facility and come in and internal audit our control methods and he will go in and check my fixtures and make sure everything is being calibrated properly and [with] proper documentation. It's getting a second person to look at it, because everybody makes mistakes ... [D]oing an audit reduces the chance of a problem actually getting out or being a bigger problem [Interview 7].

Auditing aims to manage the possibility of failure and of improper documentation being in place, thus, resulting in something becoming a "bigger problem." Along with ensuring that proper documentation is in place, auditing also serves to verify that operators in the production process have the necessary training to carrying out their tasks. Through an audit, quality assurance managers are able to determine whether an operator had the necessary training to carry out a given task.

The audit serves as an apparatus of control, rectifying non-conforming procedures and managing problem areas in the quality assurance system. When asked what resistances employees had to the audit, one quality assurance manager stated:

The only place that has not been favourable is on the whole internal auditing process. That whole phenomenon of internal auditing [is] trying

to convert from a punitive system into a supportive system ... [But], people just don't want to be told that they are delinquent in something or have a gap in their area. ...I think a lot of that has to do with pride, very few of us like to hear: "Look at what we found, this is what is supposed to be happening; This is what is actually happening; It is your responsibility" [Interview 6].

Internal auditing in this sense serves as a method of control assuring the accountability of operators and, as such, assuring that their conduct is in line with the standard. In addition to having the ability to gain knowledge of the production environment and rectifying potential problems, internal auditing serves as a method of insuring the compliance of operators to the quality standards. In effect, the internal audit ensures the discursive accuracy of part narratives and that the potential failure modes are identified preemptively. The audit in this sense serves as a battery of control, ensuring that quality assurance managers' respective organizations are prudent in their failure management. While the internal audit focuses on ensuring conformance to the system of internal controls, the external audit by third party registrars serves as the control of control (Power 1994; 1997).

Ensuring the Management of Failure

With the need for greater transparency among firms, in a corporate culture characterized by distrust (Dean 1999a, 148-9; Power, 1997), firms need to have some mechanism to verify the effectiveness of the control systems of firms. This ostensible need for verification is achieved through the practice of the external audit. Auditing practice is not limited to a governing body's ability to pass judgements on a corporation or an institution on how they are managing risk. It also represents an ability to gain knowledge on a subject's risk management practices. As part of this governmental programme of network standardization, to attain and maintain certification, suppliers are

subjected to external audits by a third party registrar. These registrars are accounting firms that are certified to conduct quality audits.

The primary role of these external auditors is to verify that a supplier is in compliance with the standards and to indicate non-conforming elements of a suppliers' organization. External auditors are to verify that there is necessary documentation of standard work instructions and in turn, to verify that operators are performing their tasks in accordance with the standard work instructions. External audits review suppliers' process FMEA and verify that operators are trained to identify failure areas. One quality assurance manager explains this process of verification:

The auditor would basically review the paperwork and start pulling out a FMEA control plan, and start auditing your process and starting asking questions with the operators, the supervisors on line and we would be there to assist him and answer any questions, or proving that the documentation is there to prove the system is effective [Interview 9].

The act of verifying a supplier's modalities for controlling failures also provides necessary information on a supplier's failure management practices. Quality assurance managers note the salience of demonstrating to external auditors that the necessary systems for managing failure are in place. Further to this knowledge procurement of a supplier's failure management practices, audits verify the prudence of a supplier in identifying and managing failure areas. This control mechanism outlines the moral conduct necessary for maintaining a node's position within the automotive network. This serves to further outline what is prudent comportment of suppliers vis-à-vis defining and inferring conformance to the standards.

System non-conformances are endemic with external audits. Quality assurance managers expressed that external auditors always found non-conforming elements of

their quality assurance systems.²⁶ Non conformances came in two forms, namely major non-conformances and minor non-conformances. One quality manager explains:

A major non-conformance is where you have a complete system failure in one specific element. Where for example ... you can't find a training record for anybody. That would be a major non-conformance. Where a minor would be ok, one or two people are not trained, do you have the training scheduled? Yes, it's coming up. Ok.

A major is also a repeat issue on a minor. So if an auditor comes in and says: OK, those three people aren't trained, we'll fix it and write it up as a minor. You come in here next time and there's three people still, or even three other people, aren't trained, then their going to write you up as a major because you have had a system breakdown over a period of time [Interview 2].

After a non-conformance is found, suppliers have to rectify their non-conformances within thirty to ninety days, or lose their certification and possibly their position in the within the supply network. One quality assurance manager reflects the salience of certification:

If [external auditors] came in and there was a bunch of majors and we did not implement corrective action, then they would basically ... pull our certificate and notify our customer base. Which means our customer would basically say "well, that's it folks, we are going to pull our business" [Interview 9].

Firms seeking to maintain their positions in the supplier network have to be continually managing their failure areas and in turn, improving their quality assurance systems.

External audits are a means for customers to gain information and to verify the robustness of a supplier's failure-management practices *at-a-distance*. The external audit then serves to confirm that nodes within the network are prudent in their failure management practices. Consequently, those that fail to comply with the standard and adequately manage failure, in effect placing other nodes at risk, are excluded from the network. The creation of part narratives, coupled with the external audit, serves to secure the network

habitat, setting the proper behaviours and failure management practices necessary for inclusion within the network (see Rose, 1999: ch. 7). Suppliers that fail to contribute to the securitization of the network will not maintain their positions as suppliers to General Motors, Daimler-Chrysler and Ford. In the next section, the network prudential subject engendered by this governmental programme of network standardization will be considered.

The Network Prudential Subject

As noted earlier, within this governmental programme of network standardization there is a continuous improvement mandate for quality assurance systems. However, as illustrated by quality assurance managers, “continuous improvement is set up to fail. That’s means it’s linear, on its way up, with no failures, and that’s impossible” [Interview 3].²⁷ Quality assurance managers acknowledge that failures are endemic to the system and that the imperfections of their systems lead them to think in terms of the risks they may pose to their customers and the risks imposed on them by their suppliers. This is clearly reflected in the testimony of quality assurance managers: There is an admission that failure is a constant feature of their production systems. Through the deployment of these information technologies, lead firms are able to gain complex information on prudential subjects who are pre-emptively called to ‘account’ for failures. Coupled with the external audit which fulfills the role of gaining knowledge on, and verifying firms’ failure management practices, lines of responsibility are relayed upon quality assurance managers and their respective firms to manage failures on behalf of their customers.

In the supply chain network, nodes come to think of their relations with other nodes in terms of potential risks because of the quality standards governing their

relations. Thus, quality assurance managers supplying to lead firms engage in a form of prudentialism which I call *network prudentialism*, whereby risk and the management of failure becomes a focal concern. A quality assurance manager's testimony is indicative of this network prudentialism:

[W]hether we like it or not, it's based on risk ... We need to manage this timeline. We can't have unsatisfied customers internally or externally. How do we manage the risk? Where can we make concessions and still accomplish objectives with the least amount of risk [Interview 6].

The prudentialized subject seeks to manage failure so as to avoid subjecting their customers to the risk of delivering defective and untimely parts. The standards act as a justifiable guide for the network prudential subjects' comportment. As such, these network prudential subjects and their respective organizations are responsabilized into managing failure on behalf of themselves and other suppliers situated within the network.

Concluding Remarks

In framing failure as a constitutive element of network governance, this paper suggests an alternative to analyses that focus on the successes of network governance. This governmental programme of network standardization aims to create network prudential subjects to manage failure and part narratives that serve as the linchpin to discursively produce accounts of prudential subjects' pre-emptive failure-management practices. Fundamental to note is that these part narratives serve to put network into discourse and to establish the proper conduct amongst firms within the network. Further to this, part narratives serve as a means for lead firms to gain knowledge of supplier failure management practices within the parts supply network and to govern the conduct of these suppliers. In this sense, supply network nodes are not only materially connected through the production and movement of parts, they are also ideally connected (and

controlled) through the production and movement of information. Technologies of performance serve as the means to render accountable production floor operators to think in terms of potential failure areas of the part and enlist them to feed the information system cybernetically, thus contributing discursively to the generation of additional failure areas of the quality assurance systems. Further to this, the internal audit serves as a heuristic device, aiming to pre-emptively identifying failure areas and verifying that the operators were in accordance with the standard. The external audit serves as a method to govern outsource relations at-a-distance, allowing lead firms to verify failure management practices within network nodes and remove those less prudent. Through elucidation of this governmental programme of network standardization, this paper has sought to attend to the *discourses*, through an examination of quality standards and part narratives, and the *practices*, through the elucidation of the network prudential subject and the attendant technologies of performance that govern relations within automotive supply networks (see, Larner & Walters, 2004: 508). Rather than being either encouraged or discouraged by the power of this industrial machinic assemblage, this paper has sought to illustrate how governance is enacted in networks (of automobile parts suppliers). More importantly, this study has examined how one kind of 'information network' has been rendered governable.

Notes

¹ Drawing from global value chain analysts (Humphrey and Schmitz, 2002), I use the term 'lead firm' to denote a group of firms, embedded in a particular network of suppliers, in a particular functional positions that are able to shape who does what along the production chain and at what price, using what standards, to which specifications and delivering at a specified time.

² According to Dean (1999), an analytics is a type of study concerned with the analysis of specific conditions under which particular entities emerge, exist and change. Throughout this paper a concerted effort is made to illustrate the making of the network prudential subject and the attendant part narratives that put net-work into discourse and further illustrates the aim of these part narratives to embed complex information about quality assurances managers' comportment in relation to the quality standards.

³ See Appendix A for description of research methodology.

⁴ Since the beginning of the 1980's Japanese transplants have gained a more prominent role in the North American automotive industry. Rutherford (2000: 740), along with indicating the growing number of Japanese plants in the US and Canada, argues that in comparison to North American assemblers, Japanese transplants are pursuing supply relations characterized by more information transfer and the development of longer term contracts with their Tier 1 part suppliers.

⁵ To understand the tiering system, according to global value chain analysts (Gereffi 1994: 97; Humphrey, 2003: 122), products have to go through a succession of activities in the passage from raw materials to the market. Likewise, products go through a range of stages within the production chain to which more 'value' is added to the part as it makes its way to the customer. Consequently, tiers denote the level to which value is added to a part destined for a car. For example, Tier 2's and 3's are usually involved with the manufacturing of raw materials that are sent on to the Tier 1 suppliers for assembly.

⁶ Holmes (2004) noting the distinction between the outsourcing of individual parts and modular manufacturing, states "modular manufacturing involves a radically different approach to organizing production which reconfigures automotive final assembly plants by blurring the distinction between supplier firms and assembly operations" (2004: 15).

⁷ This has been the case with Ford. Through the implementation of just-in-time delivery techniques in the 1990's, Ford was able to reduce stocks and therefore reduce costs and improve efficiency (Bordenave, 1998: 222).

⁸ Other than modular consortiums that reside and assemble on the same premises as their customers, Holmes (2004: 15), sites two other spatial configurations of suppliers: a modular supplier park which is built by the final assembler on land adjacent to the main assembly plant, to which modular suppliers construct facilities dedicated to the final assemblers. The second spatial configuration is a satellite supplier network where the

final assembler requires module suppliers to erect a satellite plant close to the final assembly plant to which modules are delivered on a just-in-time basis. Larsson (2002) in a case study of five supplier parks in Western Europe notes the direct proximity of a number of European assembly plants.

⁹ This is not to say that under mass production failure did not occur. Although, under mass production, problems and breakdowns in one area did not interrupt the whole vertically integrated system of production; rather they were insulated largely due to the build up of buffers in parts. With just-in-time, where the aim is to reduce buffers, the system is fragile (Womack, Jones & Roos, 1990: 103). An interruption in one plant, due to the time and part specification contingencies, can create problems in other plants. For this much needed point of clarification, I am indebted to Dr. Alan Hall.

¹⁰ According to Busch (2000) grades and standards comprise the contemporary “moral” economy insofar as it defines what is good and what is bad and consequently, disciplining those that do not conform to the designations of good and bad. Returning to Marx, Busch (2000) further illustrating the salience of standards within capitalism, by suggesting that Marx would not have been able to discuss dead labour, abstract labour, and commodities, without the standardization provided by capitalism, as these terms would otherwise be meaningless. Hacking (1990: 165) also accords that the industrializing world demanded standardization, as standards have a normalizing function whereby they are endowed with the ability to impose what is normal and in turn, what is virtuous behaviour. Further to this, the efficacy of standardization lies in the ability to create pellucid lines of distinction of what is proper behaviour in any given situation - what ought to be done and what is not to be done.

¹¹ Power (2002: 198) in his examination of quality assurance standards, specifically ISO 9000, provides that the critical points to note about these standards is that they are particularly customer focused and they have the role of installing a ‘self-observing loop’ into organizations whereby objectives are set, performance is measured relative to those standards, and in turn, results are fed back to the appropriate responsible party. Power (2002: 199) also notes that ISO 9000 quality standards offer a normative blueprint, which is increasingly a legitimate ideal for best business practice. Casper and Hancke (1999), in their comparison of ISO 9000 certification in the French and German automotive industry, note that industrial standards or norms offer the rules that govern much of the technical day-to-day relationships within and between firms.

¹² Ford had “Q101”, General Motors had “Targets of Excellence” and Chrysler had “Pentastar”.

¹³ Part and parcel of this problematization, these lead firms, in the aim of cost reduction were able to save, according to one quality assurance manager, “millions of dollars” [9] by requiring the supplier to pay for their facility to be audited by a third party registrar.

¹⁴ The full rationalities behind the problematization of QS 9000 by Daimler-Chrysler, Ford and General Motors are beyond the scope of this paper, although, interviews with quality assurance managers provides some insights as to why the proposed standard failed to produce the quality improvements sought. Some mentioned that QS 9000 failed to produce the results first sought due to the auditing process of QS 9000: because QS 9000 was procedural based auditing system, auditors would only review the procedures of a supplier. Thus, a supplier firm could have the necessary documentation in place, but in practice did not abide by their procedures. ISO TS/16949 rectified this problem, by having a process based audit, where auditors will actually follow a part through the production process to assure that procedures match what is being done within the production process.

¹⁵ This standard aligns with existing American (QS 9000), German (VDA6.1), French (EAQF) and Italian (AVSQ) automotive quality systems standards within the automotive global automotive industry.

¹⁶ All of the quality managers included in this study conferred that they would not be able to supply to their customers if they did not have or were working to achieve ISO/TS 16949 certification. Daimler-Chrysler mandated that their suppliers had to be certified by the end of the summer quarter 2004, and as such those quality managers that supplied to the aforementioned company were certified in ISO/TS 16949. Those that did not supply to Daimler-Chrysler either pre-emptively had certification or were in the process of achieving certification.

¹⁷ Several quality managers noted that QS 9000 and ISO/TS 16949 serve as a guide for best business practices: Interviews 2, 3, 5, 11, 12, 14.

¹⁸ The PPAP contains design records, engineering changes, engineering approvals, Design Failure Mode and Effects analysis, Process flow diagrams, Process Failure Mode and Effects analysis, dimensional results, Records of material/performance test results, initial process studies, Qualified Laboratory Documentation, Control Plan, part submission warrant, appearance approval report, sample production parts and master sample. PPAP was a requirement in QS 9000 (section 4.2.4) and has been continued on in ISO/TS 16949 under section 7.3.6.3.

¹⁹ In making the distinction between lay and expert knowledges, O'Malley (2000: 465) notes that expert, rational-calculative forms of risk prediction are only possible to the extent that the future is imagined in relation to the past. This is the main constraint in calculating possible failure modes, insofar as these systems are only as effective as in their ability to use past failures to manage future failures. This constraint was reflected in the testimony of Interviewee 14, as the quality manager asserted that much to the company's chagrin, they could only be reactive to previously unseen failures and their FMEAs were developed based on past known failures.

²⁰ The ISO/TS 16949: 2002 standard dictates in section 7.3.1.1 that suppliers shall use a multidisciplinary approach for product development/finalization, development and review of FMEA's, which include actions to identify and reduce potential risks and a further development of control plans. By 'multidisciplinary' the standard is referring to an organization's design, manufacturing, engineering, quality, development and review of control plans. Void in the QS 9000 standard, ISO TS 16949: 2002 requires a risk analysis be performed in the development stage to 'prove' the feasibility of a given project – section 7.2.2.2 of the standard. The QS 9000 standard had a similar multidisciplinary approach (section 4.2.4.4), but with ISO/TS 16949 there is an emphasis on use of this approach when developing FMEAs as well as control plans (Smith, 2002).

²¹ I use the term 'operators', as this was the term that all the quality assurance managers used to refer to production floor workers.

²² Section 7.5.1.2 of ISO/TS 16949: 2002 dictates that an organization prepares work instructions for all employees having responsibilities for the operation of processes that impact product quality. These work instructions are to be accessible at all workstations. In section 4.9.1. of the QS 9000 standard required standard work instructions. All quality assurance managers affirmed that there is an attendant work instruction at every station in their respective plants.

²³ In sections 6.2.2.2. and 6.2.2.3 of the ISO/TS 16949 quality standard, it dictates that an organization establishes and maintains documented procedures for identifying training needs and achieving competence of all personnel performing activities affecting product quality through on the job training, respectively. In sections 4.18.1 of the QS 9000 standard, suppliers had to establish and maintain documented procedures for identifying training needs and achieving competence of all personnel performing activities affecting product quality. QS 9000 did not mandate provisions for on the job training (Smith, 2002). All quality assurance managers affirmed that they regularly engaged in quality training and in some cases had separate staff for training. On the job training was a practice noted by most interviews (n=12).

²⁴ In section 7.5.3. of the ISO/TS 16949 quality assurance standard, organizations are required to have traceability of products. Traceability in QS 9000 was also required under section 4.8 of the standard. Common to all quality assurance managers, tracing was an important element in ensuring that problems were corrected.

²⁵ In sections 8.2.2. and 8.2.2.1-5 of the ISO/TS 16949 quality assurance standard provides the internal auditing requirements including: specifications of the quality management system audit; manufacturing process audit; product audit, internal audit plans; and internal auditor qualification. The internal audit and product audit were required under sections 4.17 and 4.10.2.4, respectively, in the QS 9000 standard.

²⁶ All of the quality assurance managers included in this study confirmed that external auditor always found minor non-conformances and that it was “their job” [Interview 7] to find non-conformances.

²⁷ This is demonstrated most clearly in the difference in discourse regarding continuous improvement in the QS 9000 and ISO/TS 16949 quality standards. For instance, QS 9000 had a ‘continuous’ improvement mandate, whereas ISO/TS 16949 has a ‘continual’ improvement mandate. Reflected in these subtle differences, and confirmed by most quality assurance managers, is that under ISO/TS 16949 there is an admittance that endeavours to improve quality assurance systems will fail, but it is firms responsibility to be ‘continually’ engaged in improvement activities.

Appendix A – Methodology

Interview Phase

The interviewing phase of this research took place in South-western Ontario between October of 2004 to March of 2005. Two nonprobability sampling strategies, snowball and ‘cold-call’, were used to gather a sample of 15 quality assurance managers at different Tier 1 part supplier plants (those that supply directly to Daimler-Chrysler, General Motors and Ford). Sampling began with a snowball sampling strategy. This is a strategy whereby a researcher begins by interviewing several people with relevant characteristics to a study and then asks them for the names of individuals with the same attributes (Berg, 2001: 33). In this study, the researcher relied on close friends and family that work in the automotive industry to solicit the participation of quality assurance managers at their respective plants. Subsequent to agreeing to be interviewed, interviewees were then contacted by the researcher to decide on a time and place most convenient for them in which to conduct the interview.

Upon exhausting this sampling strategy, the researcher then relied on a cold case sampling strategy. ‘Cold-call’ sampling is a strategy whereby the researcher contacts potential participants with relevant characteristics to a study. In this study, the researcher relied on publicly available phone numbers and websites of automotive part supply companies and a Canadian Automotive Worker (CAW) company member directory (Hargrove & O’Neil, 2001) to make contacts with potential participants. The researcher then made calls to the main corporate offices and this eventually led to the contact name and extension of the quality assurance managers at their respective plants. The quality assurance managers were then contacted and asked for their participation in the study

(repeat calls were employed as necessary), and upon agreeing to be interviewed, the interviewee indicated a time and place that was most convenient for them in which to conduct the interview.

Interviews were conducted at participants' place of work (n=12) or at their respective homes (n=3). Semi-structured, face to face interviews were conducted and ranged in length from 35 minutes to 2 hours and 10 minutes. The interviews were audio-recorded and transcribed shortly after the interviews.

Interview Sampling Rationale

Quality assurance managers were chosen on the basis of: the extent of their direct involvement with the implementation of the quality standards, the maintenance of the quality assurance management system, the management of their part suppliers, addressing customer's requirements and performing quality audits. Furthermore, within their respective organizations, quality assurance managers, without exception, were only subordinate to the plant manager, further highlighting their relative importance in their corporations. Consequently, they would be able to offer the greatest level of information regarding quality-related issues. As part of the QS 9000 and ISO TS 16949 standards, it is mandated that firms have a quality assurance manager. In comparison to QS 9000, under ISO TS 16949, firms' top-level management are expected to have more commitment to the quality management system. In section 5.1 of the ISO/TS 16949 standard outlining management commitment, top management is required to show evidence of its commitment to the development and implementation of the quality management system and continually improve its effectiveness in 5 ways: communicating to the organization the importance of meeting customer needs, as well as statutory and

regulatory requirements, establishing a quality policy, ensuring that quality objectives are established, conducting management reviews, and ensuring the availability of resources (AIAG ISO/TS 16949, 2002: 6).

Ethics

The Research Ethics Board (REB) of the University of Windsor approved this research (see Appendices C and D). To ensure the anonymity and confidentiality of the interviewees and the interviewees' responses, respectively, the interviews were assigned a number and the corresponding names and company affiliations of participants were placed in a lock box only accessible to the researcher. The author has refrained from including any descriptive information of participants and their respective corporations beyond indicating that participants are quality assurance managers at Tier 1 part supplier companies. The author believes that information reflecting the mode of manufacturing/production of participants' companies, participants companies' suppliers and customers would reflect information that would jeopardize the anonymity and confidentiality of participants.

Quality Assurance Standards Phase

The quality assurance standards were analysed before and after the interview phase of the research project. The QS 9000 quality assurance standard was accessed through publicly assessable documents such as web documents and the library (Kantner, 1997; Rabbit, 1998; Bandyopadyay, 1996; www.bsiamericas.com/auto). The ISO/TS 16949 quality assurance standard was accessed through a participant and related materials were accessed via the Internet (AIAG ISO/TS 16949, 2002; www.bsiamericas.com/auto; www.iso.org). Websites and books related to the quality

assurance standards were used to define terminology and features of the standards that the researcher was not familiar with (Stamatis, 1997; Zeidler, 2003; Kartha, 2004; www.isixsigma.com; Smith, 2002).

Data Analysis

Foucaultian discourse analysis was employed to analyse the quality assurance standards. Initially, the author coded the interview transcripts in their entirety; however, the author then winnowed the data down into discourses that reflected the discourses located in the discourse analysis of the quality standards themselves (Cresswell, 1998: 144). The additional information coded in the interview transcripts contextualized the discourses associated with the quality assurance standards. According to proponents of discourse analysis, contextualization of discourse in this way is of particular import when using such an analytical method and for the purposes of writing the narrative (Phillips & Hardy, 2002). Foucaultian discourse analysis considers how historically and culturally located systems of power/knowledge construct subjects and their worlds. These systems are considered “discourses,” which are not merely “bodies of ideas, ideologies, or other symbolic formulations, but are also working attitudes, modes of address, terms of reference, and courses of action suffused into social *practices*” (emphasis added, Gubrium & Holstein, 2000). Discourses then, according to Foucault (1974: 49), are “practices that systematically form the objects and subjects of which they speak”.

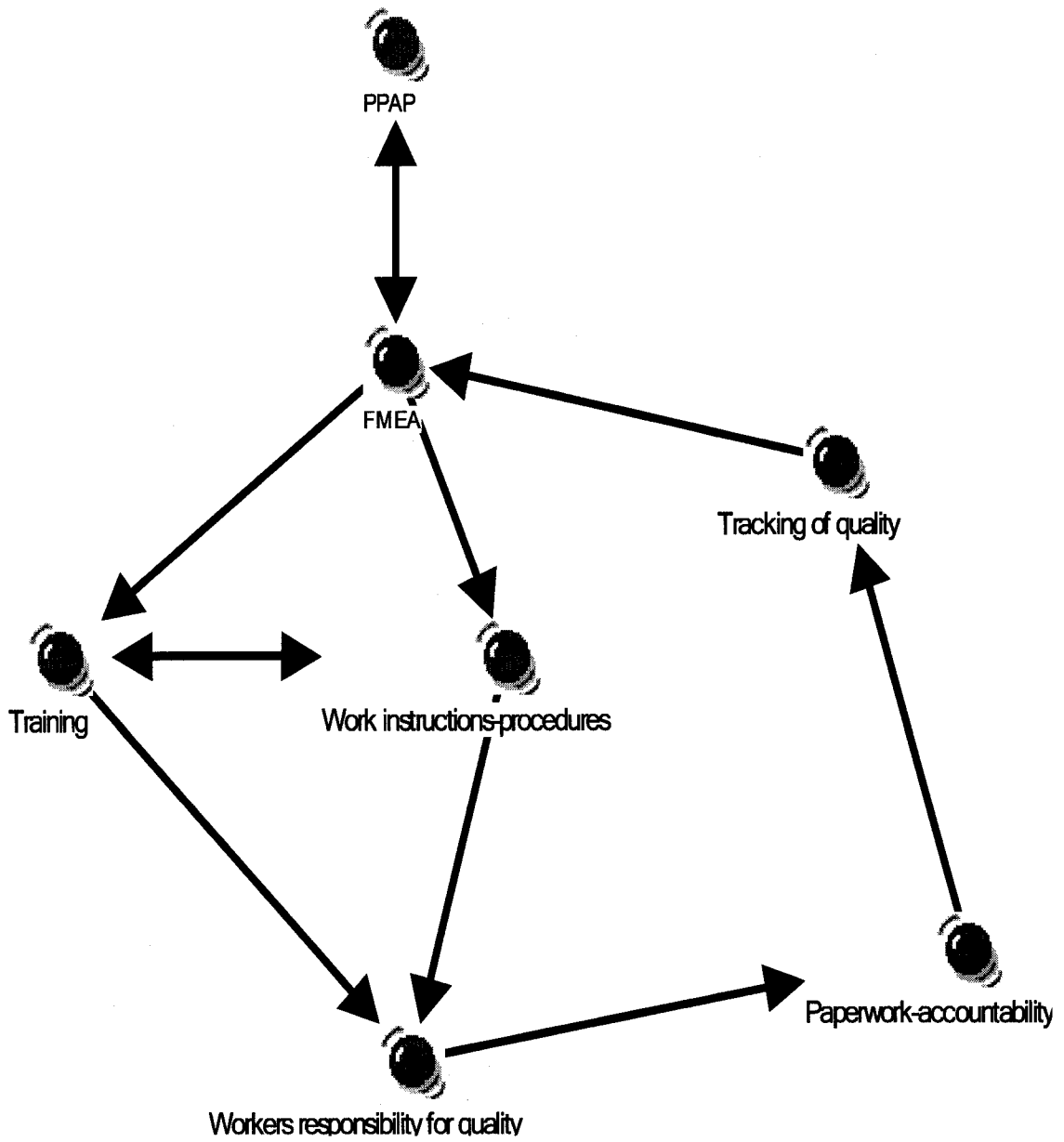
Ezzamel, Lilley and Willmott (2004) indicate that studies of organizations and organizational analysts have not addressed the relationship between text and its impact on organizations (2004: 783). This study has proceeded on the basis of analysing the discourse of the quality assurance standards and its implications for organizational

environments. Keeping with a Foucaultian discourse analysis, this study has sought to gain insight into the practices associated with quality assurance standards that socially construct objects and subjects. Furthermore, by combining an analysis of the quality assurance standards *and* interviews with quality assurance managers, the author has made no assumptions as to how the practices associated with programmes of standardization form objects and subjects within organizational environments.

The conclusions of this thesis were arrived at by an iterative process between theoretical influences, discourse analysis of the quality assurance standards, and reflection upon the narratives offered by the quality assurance managers. Through this triangulation, the author formulated a narrative illuminating the ways in which standardization impacts organizational environments. At different points in the writing process, the author's sources of information oscillated between the three modes of inquiry.

QSR Nvivo, a computer based program, was used to analyse the interviews. Through the use of this program, themes prevalent in the interviews were coded. The researcher then tried to tie the themes together to be used as an analytical tool for write up of the thesis (for an example of a conceptual model used to visualize the interrelationship between the themes, see Appendix B). The themes prevalent in the interviews were then compared to the quality assurance standard to assess to which level the discourses within the standards were put into practice. In addition, the themes located in the interviews offered a conceptual picture of how the quality assurance standards impact organizational processes.

Appendix B – Conceptual Model



Appendix C – Letter of Consent

UNIVERSITY OF WINDSOR

CONSENT TO PARTICIPATE IN RESEARCH

Governing at-a-distance: Outsourcing, Corporate Prudentialism, and Quality Assurance Programs

You are asked to participate in a research study conducted by Dale Spencer, from the department of Sociology at the University of Windsor. The results of this study will contribute to a Masters' level thesis project, and is in part sponsored by the University of Windsor.

If you have any questions or concerns about the research, please contact:

Dale Spencer
Department of Sociology and Anthropology,
University of Windsor, 401 Sunset Ave., Windsor, Ontario N9A 3P4
Phone: (519) 253-3000 ext. 3979
E-Mail: spence6@uwindsor.ca

Or

Dr. Daniel O'Connor
Department of Sociology and Anthropology
University of Windsor, 401 Sunset Ave., Windsor, Ontario N9A 3P4
Phone: (519) 253-3000 ext. 3705
E-Mail: doconnor@uwindsor.ca

• PURPOSE OF THE STUDY

The purpose of this study is examine how different organizational environments are changed as a result of quality assurance programs and how the production process becomes augmented to conform to quality assurance programs like QS 9000 and ISO 9000. Another interest is in how and what accounting technologies are integrated into the production process to allow for external and internal auditing of the quality assurance program.

• PROCEDURES

If you volunteer to participate in this study, we would ask you to read this information letter and respond to me via telephone at (519) 253-3000 ext. 3979, e-mail at spence6@uwindsor.ca, or in person.

I will conduct a one (1) hour interview which will be taped (with your permission) and later transcribed. The interview is the only process which you will undergo, and once transcription is completed, all associations between yourself and the data will be destroyed. The data will be maintained in strict confidentiality and not discussed with anyone else.

The data from this study will be used towards Masters' thesis work, and may be used at a later date for subsequent research.

The researcher will inform you when a report on the findings of the study becomes available. This will be done via e-mail if you are willing to provide your address.

• POTENTIAL RISKS AND DISCOMFORTS

There is, at worst, minimal risk to the research subject. It is possible, but highly unlikely, that you would lose some privacy if the responses in the interviews were to somehow become associated with you. There is also a possibility that the company for whom you work could lose some privacy if the responses in interviews were to become associated with you or your company.

• POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

This study will provide participants insight and awareness of other participants experience with QS 9000 and/or ISO 9000 quality assurance programs. Through the provision of a report, this study may offer participants ways in which they can improve their quality assurance program. Individuals that participate in this study will be offering their expert knowledge that will aid in understanding quality assurance programs, an endeavor that is thus far unexplored in the academic literature.

- **PAYMENT FOR PARTICIPATION**

There is no payment for participation in this research project.

- **CONFIDENTIALITY**

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission.

To reduce the possibility of responses becoming associated with you or with the corporation that employs you, the tapes will be kept in a locked and a secure place (a lock box) accessible only to the student investigator of this project. The transcriptions from these tapes will then be made anonymous by coding the names of the subject, the names of the subject's employer, and other individuals named by the subject. The code book will be kept in a secure place separate from the transcribed interviews and will only be accessible to the student investigator. Upon completion of the transcriptions, the tapes will be destroyed. Upon completion of the study, the non-anonymous transcription and the code-book will be shredded.

- **PARTICIPATION AND WITHDRAWAL**

You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. You may also refuse to answer any questions you don't want to answer and still remain in the study.

- **FEEDBACK OF THE RESULTS OF THIS STUDY TO THE SUBJECTS**

Participants will be notified by email when the summary report of the findings becomes available and copies of the report will be made available to them.

- **RIGHTS OF RESEARCH SUBJECTS**

You may withdraw your consent at any time and discontinue participation without penalty. This study has been reviewed and received ethics clearance through the University of Windsor Research Ethics Board. If you have questions regarding your rights as a research subject, contact

Research Ethics Coordinator
University of Windsor
Windsor, Ontario
N9B 3P4

Telephone: 519-253-3000, ext. 3916
E-mail: lbunn@uwindsor.ca

- **SIGNATURE OF RESEARCH SUBJECT/LEGAL REPRESENTATIVE**

I understand the information provided for the study "**Governing at-a-distance: Outsourcing, Corporate Prudentialism, and Quality Assurance Programs**" as described herein. My questions have been answered to my satisfaction, and I agree to participate in this study. I have been given a copy of this form.

Name of Subject

Signature of Subject

Date

- **SIGNATURE OF INVESTIGATOR**

These are the terms under which I will conduct research.

Signature of Investigator

Date

Appendix D – Interview Guide

Interview Guide

General Background Information

1. Are you a Tier I parts supplier to the Big Three?

Probes: Who specifically do you supply parts to? Do you supply parts internationally? What parts do you supply to them? What do you manufacture? Can you explain to me the process by which a raw material comes into the plant and a finished product is produced?

2. Do you operate under just-in-time delivery to your customers?

Probe: To your knowledge on what intervals to you deliver to your customers? Weekly, Daily, Monthly?

3. How many employees work at your plant?

4. Who reports to you? To whom do you report?

5. Are you ISO 9000 or QS 9000 certified? Or both?

Probe: Do your customers require that you have QS 9000 or ISO 9000 certification? Would they do business with you if you did not have certification in this/these quality assurance program(s)?

6. How long have you been the quality assurance manager?

7. As the quality assurance manager, what are your responsibilities?

Probes: Are you responsible for maintaining your company's quality assurance program? Were you involved in creating the quality assurance system? Was the system in place prior to you working at your company?

Organizational Change

1. In your experience, as a result of your quality assurance program, has any part of the production process changed?

Probes: Can you give me an example? Did this change make the production process more efficient? Cut out non-value added labour? Increase production in terms of output? Did the change to the production process result in higher quality in parts? Less defective parts?

2. Have you been able to reduce costs as a result of becoming more efficient?

Probes: Has this resulted in providing parts to your customers cheaper? Have you customers ever required you to provide parts at a cheaper rate/cost? Can you give me an example?

3. Do you find that the production environment is better organized as a result of your quality assurance program?

Probe: Greater coordination along the production line? If yes, can you provide an example?

4. Is your company involved with the research and development of their products?

Probes: If yes, in the design stage is quality control integrated into the design of the products? For instance, is quality a consideration in product design?

5. Due to the rigors of the quality assurance program, have you found it difficult to deliver parts on time to your customers?

Probes: Have you ever not made a delivery on time? Was this because of the time spent on the quality assurance program?

Expert Knowledge

1. Do you find that the ISO/QS 9000 program is an effective way of assuring quality in production?

Probe: In what ways?

2. Do you find that the information provided by the ISO/QS 9000 system is generally informative for maintaining or continually improving the quality assurance program?

Probes: For instance do they provide a comprehensive guide to the steps involved? Ways to improve quality and productivity? Do they offer techniques for continuous improvement? If yes, what are the techniques provided?

3. Do you find that the QS/ISO 9000 program or the external auditors provide adequate direction or ways to continually improve your quality assurance program?

Probes: Can you give me an example of when this system or the external auditors aided you in improving your quality assurance program?

Standardization, Accounting and Accountability

1. Can you explain to me the process by which QS/ISO 9000 based standards are formulated at your company?
2. Once you have developed those standards, do you have to live up to those standards?
3. Has it ever been difficult to maintain or live up to those standards?

Probes: Have you ever been found to be in non-conformance? Can you explain to me that situation? How did you rectify that problem? Who was involved in fixing the problem? How did you decide who was involved in solving that problem?

4. How does your company account or ensure quality?

Probes: What quality controls are put into the production process to assure that quality parts are produced? Is there a data base, computer program or paper work that a worker enters in or fills out, when a part goes through the production process? Have you integrated statistical process quality control checks into the production process? Do workers account for the physical condition of each part as it is put through the production process? Do workers check their work after finishing a job? Can you explain this process?

5. To what level, in your opinion, is your company on the whole committed to the QS/ISO 9000 quality assurance program?

Probes: Do you find that top management is committed more to the quality assurance program than the workers? If yes, in what ways?

6. Do you see yourself as responsible to the external auditors?

Probe: If yes, in what ways?

7. In some of the literature on quality assurance programs they say that for the program to work there must be a cultural change oriented towards quality in an organization, has that been the experience in your company?

Probe: If yes, how so?

8. What impact has QS 9000 had on how workers do their jobs?

Probes: What kind of training is in place with respect to quality assurance? Is everyone employed at the company trained? Or just some parts? Has your company made teams that are responsible for quality assurance or continuous improvement? Like a continuous improvement task force? Has it changed their approach or attitude towards production quality? Overall, has the QS 9000 program affected workers commitment to quality assurance? For example, do workers do on-the-line quality control?

9. Has any workers resisted quality assurance program?

Probe: If yes, can you give me an example?

Audit

1. In your view, what role or function does the audit play?

Probe: Does it make an assessment of progress?

2. What parts of the production process were changed to make your quality assurance program auditable? *If they were involved in the initial creation of the ISO/QS 9000 quality assurance program.*

3. Do you perform the internal audits at your company?

4. If yes to question 3: When you perform internal audits does it make you aware of possible ways to improve your quality assurance program?

Probe: If yes, can you describe a situation where the audit did this?

5. Can you explain what happens when an external auditor comes to your company to audit the quality assurance program?

6. Have your experiences with the external auditors been good or bad?

Probe: Do you think that they are fair in their assessments of your quality assurance program, and/or your conformity to ISO/QS 9000 certification?

Risk

1. Do you believe that as a result of your quality assurance program there is less risk of losing customers/contracts?

Probes: How so? Do you have confidence in the production process to produce quality parts?

2. Have you lost contracts due to supplying parts that were of insufficient quality?

3. Do you think that as a result of being registered as ISO/QS 9000 certified that there is greater stability in terms of maintaining contracts, between your company and your customers?

Probe: If yes, why do you believe this to be so?

4. What is your view of having to take on ISO/ QS 9000 certification?

Probe: Do you think it is a positive or negative addition to you production process?

5. Why do you think that the Big Three have made their suppliers take on this form of certification?

Appendix E – Research Ethics Board Application

REB # _____

UNIVERSITY OF WINDSOR APPLICATION TO INVOLVE HUMAN SUBJECTS IN RESEARCH FOR STUDENT RESEARCHERS

Please complete, print, and submit the **original plus three (3) copies** of this form to the
Research Ethics Coordinator, Office of Research Services, Chrysler Hall Tower, Room 309

CHECKLIST

Title of Project: Governing at-a-distance: Outsourcing, Corporate Prudentialism, and Quality Assurance Programs

Student Investigator: Dale Spencer

Faculty Supervisor: Dr. Daniel O'Connor

Please attach the following items, if applicable, in the following order at the back of the Application.

- Decisions Needed From Other REB Boards
- B.3.c. Questionnaires and Test Instruments
- B.3.e. Debriefing Letter
- B.6.b. Letters of Permission Allowing Research to Take Place on Site
- B.6.d. Recruitment Materials: Advertisements, Posters, Letters, etc.
- E.1. Consent Form
- E.2. Letter of Information
- E.4. Parental/Guardian Information and Consent Form
- E.5. Assent Form
- F.2. Consent for Audio/Visual Taping Form

**** Please make sure that all necessary signatures have been provided.**

REB # _____

**UNIVERSITY OF WINDSOR
APPLICATION TO INVOLVE HUMAN SUBJECTS IN RESEARCH
FOR STUDENT RESEARCHERS**

Please complete, print, and submit the **original plus three (3) copies** of this form to the
Research Ethics Coordinator, Office of Research Services, Chrysler Hall Tower, Room 309

Date: September 1, 2004

Title of Research Project: Governing at-a-distance: Outsourcing, Corporate Prudentialism, and Quality Assurance Programs

Projected start date of the project: 15/09/2004 **Projected completion date:** 15/11/2004

	Name	Dept./Address	Phone/Ext.	E-mail
Student Investigator	Dale Spencer	Sociology	ext. 3979	spence6@uwindsor.ca
Co-Investigators				
Faculty Supervisor	Dr. Daniel O'Connor	Sociology	ext. 3705	doconnor@uwindsor.ca

Researchers from another institution who are a part of a research team, irrespective of their role, must seek clarification from their institutional REB as to the requirement for review and clearance.

For each researcher, please indicate if REB clearance is required or briefly provide the rationale for why it is not required:

REVIEW FROM ANOTHER INSTITUTION

Has this application been submitted to another institutional REB? Yes No

If YES,

- a. provide the name of the board:
- b. provide the date of submission:
- c. provide the decision: Pending Yes No

¹ STUDENT INVESTIGATOR ASSURANCE

I certify that the information provided in this application is complete and correct.

I understand that as Student Investigator, I have responsibility for the conduct of the study, the ethics performance of the project and the protection of the rights and welfare of human participants.

I agree to comply with the Tri-Council Policy Statement and all University of Windsor policies and procedures, governing the protection of human subjects in research.

Signature of Student Investigator: _____ Date: _____

² FACULTY SUPERVISOR ASSURANCE

Title of Research Project: Governing at-a-distance: Outsourcing, Corporate Prudentialism, and Quality Assurance Programs

Name of Student: Dale Spencer

I certify that the information provided in this application is complete and correct.

I understand that as principal Faculty Supervisor, I have ultimate responsibility for the conduct of the study, the ethical performance of the project and the protection of the rights and welfare of human participants.

I agree to comply with the Tri-Council Policy Statement and all University of Windsor policies and procedures, governing the protection of human subjects in research, including, but not limited to, the following:

- performing the project by qualified and appropriately trained personnel in accordance with REB protocol;
- implementing no changes to the REB approved protocol or consent form/statement without notification to the REB of the proposed changes and their subsequent approval of the REB;
- reporting promptly significant adverse effects to the REB within five (5) working days of occurrence; and
- submitting, at minimum, a progress report annually or in accordance with the terms of certification.

Signature of Faculty Supervisor: _____ Date: _____

A. PROJECT DETAILS

A.1. Level of Project

- Faculty Research Ph.D. Masters
 Undergraduate Post Doctoral Administration
 Other (specify):

A.2. Funding Status

- Is this project currently funded? Yes No
If NO, is funding to be sought? Yes No

A.3. Details of Funding (Funded or Applied for)

Type of funding:

- Grant Contract Research Agreement

Agency:

- NSERC U of W Grant Account Number:
 SSHRC U of W Grant Account Number:
 Other (specify):
U of W Grant Account Number:

Period of funding: From: To:

B. SUMMARY OF PROPOSED RESEARCH

B.1. Describe the purpose and background rationale for the proposed project.

This project focuses on quality assurance programs, specifically the ISO 9000 and QS 9000 quality assurance programs and the imposition of these programs upon Tier I parts suppliers to General Motors, Daimler-Chrysler and Ford. There is little existing literature on the effect of quality assurance programs on the North American automobile industry. I expect that the outputs of this project to stimulate debate on the organizational changes that result from quality assurance programs like the ISO 9000 and QS 9000 programs.

B.2. Describe the hypothesis(es)/research questions to be examined.

The purpose of this study is examine how different organizational environments are changed as a result of quality assurance programs and how the production process becomes augmented to conform to quality assurance programs like QS 9000 and ISO 9000. Another interest is in how and what accounting technologies are integrated into the production process to allow for external and internal auditing of the quality assurance program. A central hypothesis is that organization environments are changed in such a way as to make them conducive to external and internal auditing through the integration of accounting technologies into the production process.

B.3. Methodology/Procedures

B.3.a. Do any of the procedures involve invasion of the body (e.g. touching, contact, attachment to instruments, withdrawal of specimens)? Yes No

B.3.b. Does the study involve the administration of prescribed or proscribed drugs? Yes No

B.3.c. Specify in a step-by-step outline of exactly what the subject(s) will be asked to do. Attach a copy of any questionnaires or test instruments.

Subjects will be asked to talk about their experiences with the QS 9000 and/or ISO 9000 quality assurance system in a series of open-ended questions (see attached interview guide). The interviews will be tape-recorded with the consent of research subjects. Depending on the nature of their responses to the open-ended questions, subjects may be asked follow-up questions related to the theme. The interview process should last approximately one hour.

B.3.d. Will deception be used in this study? Yes No

If YES, please describe and justify the need for deception.

B.3.e. Explain the debriefing procedures to be used and attach a copy of the written debriefing

B.4. Cite your experience with this kind of research. Use no more than 300 words for each research.

I have had extensive training in research methodology and interviewing techniques as a Masters student at the University of Windsor. Working on the Auto 21 B2 project on Health and Safety in the auto parts sector for the last 9 months and interviewing individuals involved in health and safety, I have gained an extensive background on the auto parts sector in the Windsor and surrounding area. I am aware of the central issues confronting companies in the auto parts sector as a result of industry restructuring that has occurred in the last 15 to 20 years. Also, I am part of the Auto 21 B5 project on young offenders and vehicle thefts. As a result of interviewing subjects that have been involved in vehicle theft, I have gained a considerable amount of interviewing experience.

B.5. Subjects Involved in the Study

Describe in detail the sample to be recruited including:

B.5.a. the number of subjects

15-20

B.5.b. gender

male or female

B.5.c. age range

18 or older

B.5.d. any special characteristics

Quality assurance managers from Tier 1 auto parts suppliers to the General Motors, Ford and Daimler-Chryslers.

B.5.e. institutional affiliation or where located

Windsor and surrounding area

B.6. Recruitment Process

B.6.a. Describe how and from what sources the subjects will be recruited.

To gain access to the population sought in this project, 8 persons who I know from previous research, currently working at Tier 1 part supplier companies, have agreed to contact the quality assurance managers within their respective companies and request an interview for the study. Through a chain-referral sampling method, which entails first identifying several people with the appropriate characteristics and interviewing them. These subjects are then asked for the names of other people who possess the same attributes they do. Once, this sampling method has been exhausted, potential participants will also be contacted directly by approaching local companies that are publicly known to be QS 9000 and/or ISO 9000 certified and Tier 1 parts producers for Daimler-Chrysler, Ford and General Motors. Contact information for the different Tier 1 parts suppliers companies will be found through referring to the 2001 directory of Canadian Auto Parts Manufacturers. In addition, the Canadian Auto Workers (www.caw.ca) website will be used to identify Tier 1 part suppliers in the Windsor and Surrounding area. Further, internet sites for the various companies will provide information necessary to determine whether companies are QS 9000 and/or ISO 9000 certified.

B.6.b. Indicate where the study will take place. If applicable, attach letter(s) of permission from organizations where research is to take place.

If participants agree to be interviewed, an interview will be scheduled at an appropriate place and time that is suitable for the participants.

B.6.c. Describe any possible relationship between investigator(s) and subjects(s) (e.g. instructor - student; manager - employee).

There is no relationship between the investigator and subjects.

B.6.d. Attach a copy of any poster(s), advertisement(s) or letter(s) to be used for recruitment.

B.7. Compensation of Subjects

B.7.a. Will subjects receive compensation for participation?

Yes No

If YES, please provide details.

B.7.b. If subjects (s) choose to withdraw, how will you deal with compensation?

B.8. Feedback to Subjects

Whenever possible, upon completion of the study, subjects should be informed of the results. Describe below the arrangements for provision of this feedback.

Subjects will be notified by email when the summary report of the findings becomes available and copies of the report will be made available to them.

C. POTENTIAL BENEFITS FROM THE STUDY

- C.1.** Discuss any potential direct benefits to subjects from their involvement in the project.

This study will provide participants insight and awareness of other participants experience with QS 9000 and/or ISO 9000 quality assurance programs. Through the provision of a report, this study may offer participants ways in which they can improve their quality assurance program. Individuals may get a level of satisfaction by being included in a study that their expert knowledge will aid in understanding quality assurance programs, an endeavor that is thus far unexplored.

- C.2.** Comment on the (potential) benefits to (the scientific community)/society that would justify involvement of subjects in this study.

This study will benefit the academic community in understanding organizational change that results from quality assurance programs, an area where the literature is lacking. This study will provide additional insight into how and what accounting technologies are integrated into the production process in order to render quality assurance programs auditable. More broadly, this study will aid in situating quality assurance programs within the recent restructuring of the automobile industry.

D. POTENTIAL RISKS OF THE STUDY

- D.1.** Are there any psychological risks/harm? (Might a subject feel demeaned, embarrassed, worried or upset?) Yes No
- D.2.** Are there any physical risks/harm? Yes No
- D.3.** Are there any social risks/harm? (Possible loss of status, privacy, and/or reputation?) Yes No

- D.4.** Describe the known and anticipated risks of the proposed research, specifying the particular risk(s)/harm associated with each procedure or task. Consider physical, psychological, emotional, and social risks/harm.

There is, at worst, minimal risk to the research subject. Inquiry into the lives of quality assurance managers and their experiences with ISO 9000 and/or QS 9000 programs may result in the disclosure of personal information about the subject. As most inquiries will be made into information regarding the quality assurance program, there is a possibility that the corporations for whom they work for could lose some privacy if the responses in interviews were to become associated with the subject or the subject's organization. While, I will be soliciting information regarding a given quality assurance program, I will not be requesting sensitive information about the quality assurance managers themselves, such as rates of pay. Also, as this study will be interviewing quality assurance managers that are generally, middle to top management in corporations, these individuals are not susceptible to the regular risks associated with interviewing lower-level workers in workplaces. Involvement in this study is strictly voluntary.

- D.5.** Describe how the potential risks to the subjects will be minimized.

To reduce the possibility of subjects' responses becoming associated with them or with the corporation that employs them, the tapes will be kept in a locked and a secure place (a lock box) accessible only to the student investigator of this project. The transcriptions from these tapes will then be made anonymous by coding the names of the subject, the names of the employer, and other individuals named by the subject. The code book will be kept in a secure place separate from the transcribed interviews and will only be accessible to the student investigator. Upon completion of the transcriptions, tapes will be destroyed. Upon completion of the study, the non-anonymous transcription and the code-book will be shredded.

E. INFORMATION AND CONSENT PROCESS

If different groups of subjects are going to be asked to do different things during the course of the research, more than one consent may be necessary (i.e. if the research can be seen as having Phase I and Phase II).

- E.1.** Is a copy of a **separate Consent Form** attached to this application? Yes No
- E.2.** Is a copy of a **separate Letter of Information** attached to this application? Yes No

If written consent will **NOT**/cannot be obtained or is considered inadvisable, justify this and outline the process to be used to otherwise fully inform participants.

- E.3.** Are subjects competent to consent? Yes No

If not, describe the process to be used to obtain permission of parent or guardian.

- E.4.** Is the parental/guardian information and consent letter attached? Yes No

- E.5.** Is an **Assent Form** attached? Yes No

E.6. Withdrawal from Study

- E.6.a.** Do subjects have the right to withdraw at any time during and after the research project? Yes No

- E.6.b.** Are subjects to be informed of this right? Yes No

- E.6.c.** Describe the process to be used to inform subjects of their withdrawal right.

The consent form (attached) and information letter (attached) will be presented to the subject and the terms of the project and the consent form will be read to the subject. The subject will be informed of their right not to participate in this study and that they have the right to withdraw their participation at any time.

F. CONFIDENTIALITY

Definitions: **Anonymity** - when the subject cannot be identified, even by the researcher.
Confidentiality - must be provided when the subject can be identified, even if only by the researcher.

- F.1.** Describe the procedures to be used to ensure anonymity of subjects and confidentiality of data. Explain how written records, video/audio tapes and questionnaires will be secured, and provide details of their final disposal.

Names, addresses or other identifying information will not be associated with transcribed interviews. To reduce the possibility of subjects' responses becoming associated with them, the tapes will be kept in a locked, secure place (a lock box) in a locked office accessible only to the research investigator. The transcriptions from these tapes will then be made anonymous by coding the names of the subject, the names of the subject's employer or company, and any department, official, or other individual named by the subject. The code book will be kept in a secure place separate from the transcribed interviews. Upon completion of the transcriptions, the tapes will be destroyed. Upon completion of the study, the non-anonymous transcriptions and the code book will be shredded. The anonymous, digitized transcriptions will be kept on file for twenty years for future research. The data will be treated as confidential.

- F.2.** Is a **Consent for Audio/Video Taping Form** attached? Yes No

- F.3.** Specify if an assurance of anonymity or confidentiality is being given during:

- F.3.a. Conduct of research Yes No
- F.3.b. Release of findings Yes No
- F.3.c. Details of final disposal Yes No

G. REB REVIEW OF ONGOING RESEARCH

- G.1. Are there any specific characteristics of this research which requires additional review by the REB when the research is ongoing? Yes No

If YES, please explain.

- G.2. Will the results of this research be used in a way to create financial gain for the researcher? Yes No

If YES, please explain.

- G.3. Is there an actual or potential conflict of interest? Yes No

If YES, please explain for researchers who are involved.

- G.4. Please propose a continuing review process (beyond the annually **Progress Report**) you deem to be appropriate for this research project/program.

Continued review by faculty supervisor.

Please note that a **Progress Report** is required and that the REB needs to be informed when the project is completed.

H. SUBSEQUENT USE OF DATA

- H.1. Will the data obtained from the subjects of this research project be used in subsequent research studies? Yes No

If YES, please indicate on the Consent Form that the data may be used in other research studies. Subjects may be given the option regarding the use of their data.

I. CONSENT FORM

If a Consent Form is required for your research, please use the following sample **Consent Form** template. If you wish to deviate from this format, please provide the rationale. Print out the **Consent Form** with the University of Windsor logo.

J. LETTER OF INFORMATION

If a Letter of Information is required for your research, please use the following sample **Letter of Information** template. If you wish to deviate from this format, please provide the rationale. Print out the **Letter of Information** with the University of Windsor logo.

Appendix F – Research Ethics Board Clearance Letter



September 7, 2004

REB #04-141

Mr. Dale Spencer
Department of Sociology & Anthropology
University of Windsor
Windsor, ON N9B 3P4

Dear Mr. Spencer.

Subject: "Governing at-a-distance: outsourcing, corporate prudentialism, and quality assurance programs"

This letter is in response to your application for ethics review of your Masters project at the University of Windsor. The University of Windsor Research Ethics Board (REB) has reviewed the above noted study. I am pleased to inform you that the proposal has been cleared by the Board for a period of one year.

As indicated in the *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans* you are required to do the following:

- Submit a Progress Report if your project extends beyond one year;
- Notify the REB when your project is completed;
- Submit a Request to Revise for any modifications to your project;
- Contact the Office of Research Services immediately regarding adverse events or unexpected events.

Forms for submission/notification to the REB are available at the Office of Research Services' Web Site: www.uwindsor.ca/reb.

Please be sure that your supervisor completes and returns to the Research Ethics Coordinator the enclosed sheet to indicate when your project was completed.

We wish you every success in your research.

Maureen Muldoon

Maureen H. Muldoon, Ph.D.
Chair, University Research Ethics Board

cc: Dr. Daniel O'Connor, Department of Sociology & Anthropology
Linda Bunn, Research Ethics Coordinator

Enclosure

401 SUNSET CHRYSLER HALL TOWER WINDSOR ONTARIO CANADA N9B 3P4
TELEPHONE: 519/253-3000 (3916) OR (3918) FAX: 519/971-3667 WEB: www.uwindsor.ca/research/ors

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VITA AUCTORIS

Dale Spencer was born and raised in Windsor, Ontario, where he graduated from St. Anne High School in 1998. After earning an Honours degree in History and Sociology at the University of Windsor in 2003, he remained at the University of Windsor where is currently studying for a Master of Arts in Sociology. In September of 2005 he will commence doctoral studies in sociology at Carleton University.