

Herold, David M.; Wilde, Simon.; Wojtarowicz, Natalie

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How to Attract Air Freight Business: Defining Critical Success Factors for Regional Airports

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How to Attract Air Freight Business: Defining Critical Success Factors for Regional Airports

David M. Herold, Simon Wilde and Natalie Wojtarowicz

Abstract

Much less is known about the numerous smaller airports that collectively comprise the majority of aviation networks. A process of deregulation has left small Australian airports in the hands of local governments, with as many as 50 per cent are reporting an operating loss each year. The integration of an air cargo sector and establishing a freight value proposition can add a competitive advantage to a regional airport. Airports such as Memphis, Louisville or Dubai have grown through their close relationship with global cargo companies (like FedEx or UPS), or through manufacturing companies moving closer to the airport. Accordingly, the ability to attract carriers and air cargo traffic is crucial to the establishment of a transport and logistics hub. An airport with an emerging freight hub is therefore likely to experience substantial economic growth from the freight industry, not only for the airport itself, but also for the host region.

There is little research on regional airports, however the literature suggests that the most important points of attracting air freight as external factors and are outside the airport's influence. There is a need to create demand by the development of important industry clusters around airports. This means an involvement of third parties to develop the airport and its region to achieve appropriate levels of market demand and drive down the (lack of) economics of scale. The aim of this paper is to give an overview about the literature and describes in which environment Australian regional airports currently operate.

Keywords: sustainability, regional airports, air freight, success factors

Foreword

This paper represents an early stage of my PhD research. As outlined below, the aim of the paper is to describe the current framework in which Australian regional airports currently operate and how Australian regional airports can attract air freight carriers to create an additional revenue stream. The literature review reveals six major points to describe/analyse the current situation:

- Australian context – deregulation of airports
- Ownership and Governance – regional development
- Regional and airport development
- Airport Management Efficiency
- Airport Structure
- Creating a freight value proposition

The aim of this paper is to give an overview about the literature and describes in which environment Australian regional airports currently operate. I will give an overview about the last three points; the Australian context as well as the governance and regional economic development is beyond the scope for this paper and will be included at a later stage.

This literature review forms an integral part of my PhD studies, as it describes the problem space in which Australian airports currently operate. Furthermore, the findings of this literature review form the basis for developing the research approach and the next steps in my research. Networks play an integral role in ensuring airports are managed in a sustainable manner. The current problem area will be viewed from a network governance perspective, which also forms the conceptual framework. This research approach is used to address the management challenges faced by regional airports for the resources and expertise to make the decisions to foster economic development around regional airports and eventually attract air freight business. In this context, governance covers all aspects of airport operations that are the result of decision-making by both the airport operator (private) and administering authorities (public) including airport ownership; the commercialization and

privatization of airports; consultative procedures and conflicts; airport and air transport security; legislation and policy; institutional arrangements and public private partnerships. The next steps include interviews with airports and air carriers like “Rex” to further build a comprehensive view of the problem area and to further develop the research question.

I look forward to presenting my topic at the HICL. I specifically aim for further feedback of my research, and being able to gain presentation experience at an international conference at this early stage of my PhD is an invaluable opportunity for the further progress of my studies.

1. Introduction

Australia’s regional airports play a play a crucial role in the economic and social development of the nation. Regional Australia generates 65 per cent of Australia’s export income, employs over a third of Australia’s workforce, and is home to 32 per cent of the Australian population (Albanese et al., 2008). In many parts of Australia, airports remain the only practical means of access to emergency and essential services. Regional airports facilitate personal and business travel and freight, provide access to community service not available in regions such as education and health services.

However, regional airports in Australia are perishing. According to BITRE (2013), the number of regional airports in Australia has dropped dramatically from 274 active airports in 1984 to 171 airports in 2012. As many as 50 per cent of these Australian regional airports are reporting an operating loss each year (Australian Airports Association, 2012). Donehue and Baker (2012) argue that this has been the result of a deregulated environment for all Australian airports, which has transferred the financial and economic responsibility of regional airports onto local government authorities. Furthermore, they claim that the deregulation policy shows a lack of understanding of the nature of regional airports, as there are significant differences in the business orientation and structure of regional airports compared to those of much larger airport

operations, such as those located in the vicinity of capital cities. As a consequence, local government authorities are facing serious challenges with respect to fulfilling the management and development of regional airports in an economic sustainable manner given that they are often lacking in financial and human resources (Donehue and Baker, 2012).

Given the importance of regional airports and the increasingly dire financial situation in which they find themselves, regional airports need to look for ways to diversify their revenue streams (Deloitte Access Economics, 2012). Major airports such as Memphis, Dubai as well as regional airports such Glasgow Prestwick have grown through their close relationship with global freight companies (like FedEx or UPS) or through manufacturing companies moving closer to the airport (Conway, 2000, *The Economist*, 2013).

The air freight industry has undergone considerable growth over the last two decades and is expected to grow even more. The expected growth of passenger traffic internationally is forecast to reach 6.7 billion by 2032 with an annual grow rate of 4.7%. The volume of global air freight is expected to outperform the passenger market with a annual rate of 4.8% (2012-2032). The Asia Pacific region is forecast to grow the most, averaging 5.5% per annum (Airbus, 2013).

The integration of an airfreight sector and establishing a freight value proposition has the potential to add a competitive advantage to a regional airport (Button and Yuan, 2013). In order to achieve this, the ability of a regional airport to attract carriers and air freight traffic is crucial to the establishment of a transport and logistics hub at a regional level. Kasarda and Green (2005) argue there is an established correlation between levels of air freight volume, GDP and national and regional economic development. An airport with an emerging freight hub is therefore likely to experience substantial economic growth from the freight industry, not only for the airport itself, but also for the host region.

There is little research on how to attract air freight, particularly on regional airports. Gardiner et al. (2005) identified a three-stage process of air freight carriers' factors when choosing an airport. The first stage concentrates on

external factors; either the location or the market has a strong demand for freight services, the market is stipulated by a customer with a base load (such as high-value industry clusters) or is centrally located and can be operated as a hub. Similar to Gardiner et al. (2005), a report of TAWG (2012) considers the most important points of attracting air freight as external factors and outside the airport's influence. Thus, the most critical point is that airlines or air freight carrier will only decide to fly to a region if there is a business case to do so (TAWG, 2012). There is a need to create demand by the development of important industry clusters around airports, which translates into further air freight demand at the respective airport (Hudson Howells, 2012). This means an involvement of third parties to develop the airport and its region to achieve appropriate levels of market demand and drive down the (lack of) economics of scale.

The aim of this paper is to describe how Australian regional airports can attract air freight carriers to create an additional revenue stream. The literature review reveals six major points to describe/analyse the current situation:

- Australian context – deregulation of airports
- Ownership and Governance – regional development
- Regional and airport development
- Airport Management Efficiency
- Airport Structure
- Creating a freight value proposition

In this paper, an overview about the last three points (point 1: airport management efficiency; point 2: airport structure; point 3: creating a value proposition); the Australian context as well as the governance and regional economic development is beyond the scope for this paper and will be included at a later stage.

First, airport management efficiency and structural differences between regional and major airports will be explored. This includes a description of airport management capability approaches an analysis of revenue streams and operational activities. A third step will introduce the creation of a freight value

proposition as a potential revenue stream. Attracting air freight carriers is a complex process and involves not only the regional airport's operational capabilities, but also – and more importantly – strategic cooperation with regional economic development initiatives to develop the airport.

There is very little published research about regional cooperation with regard to regional airports, particularly that relating to the air freight sector. Further investigation into this area is needed, particularly beyond the scope of airport and local government organisational boundaries.

This literature review forms an integral part of my PhD studies, as it describes the problem space in which Australian airports currently operate. Furthermore, the findings of this literature review form the basis for developing the research approach and the next steps in my research. Networks play an integral role in ensuring airports are managed in a sustainable manner. The current problem area will be viewed from a network governance perspective, which also forms the conceptual framework. This research approach is used to address the management challenges faced by regional airports for the resources and expertise to make the decisions to foster economic development around regional airports and eventually attract air freight business. In this context, governance covers all aspects of airport operations that are the result of decision-making by both the airport operator (private) and administering authorities (public) including airport ownership; the commercialisation and privatisation of airports; consultative procedures and conflicts; airport and air transport security; legislation and policy; institutional arrangements and public private partnerships. The next steps include interviews with airports and air carriers like “Rex” to further build a comprehensive view of the problem area and to further develop the research question.

2. Airport Management Efficiency

Although there are a wide range of airport efficiency benchmarking studies for large airports and in particular hubs, much less has been investigated at the local and regional level. A significant relationship has been found between levels of efficiency and airport size in the airport benchmarking literature. Sarkis (2000) compares hub airports from the US with non-hub counterparts using data envelopment analysis models and presents evidence of higher efficiency levels at hub airports. Oum and Yu (2004) conclude that larger airports achieve higher efficiency scores based on a variable factor productivity analysis of 76 airports around the world. Assaf (2009) applies a stochastic frontier analysis to two groups of airports in the UK and shows that the large airports are technically more efficient. Yoshida and Fujimoto (2004) analyze Japanese airports through data envelopment analysis and endogenous weight total factor productivity and conclude that the regional airports in Japan are relatively less efficient.

Carney and Mew (2003) describe three management capability approaches to increase efficiency on different levels: operational, project driven and strategic management.

Operational management capabilities are focused upon increasing the efficiency and quality of airport processes. Generally, the profit potential from management contracting lays in more efficient utilization of existing assets and through attention to cost reduction. Project management capabilities focus upon the renewal or addition of new physical capacity, such as terminals and runways, or technical systems. Project managers need an international orientation and skill in identifying the profit potential of various tenders. In addition to profitability the evaluation of management performance is assessed in terms of project realization, timeliness, and budget variances. Many of the benefits of governance reform stem not from cost reduction or increased capital investment, but from the application of a commercial mentality to the entire airport enterprise. In the airport business this means balancing public service

and commercial development goals. To induce a strategic management mentality in airport managers, the state must devolve operational, financial and strategic planning autonomy (Carney and Mew, 2003).

For major airports, a strategic management approach seems able to deliver balance among conflicting and competing stakeholder claims on airport resources. Assaf (2010) found that Australian major airports improved efficiency post privatisation. This in line with Carney and Mew (2003), who observed a decrease in average real service charges of 8% per annum in the first 5 years after privatization. Moreover, quality of airport service is closely monitored and standards have been maintained or increased. Melbourne and Brisbane airports have increased revenue per employee by an average of 33%. According to Adler et al. (2013a), it would appear to be preferable to outsource many of the activities necessary at an airport, including ground-handling, fire services, ambulance services, fueling, cleaning, security, car parking and snow removal. Those observed who undertake ground handling or fueling services in-house are 3% to 6% less efficient on average than those who outsource the activities.

Adler et al. (2013b) argues the relative inefficiency of smaller airports may be explained by low traffic demand relative to the minimum infrastructure necessary to produce safe and secure traffic movements. The likelihood of price regulation, public ownership and subsidy requirements are likely to impact small regional airport managerial efficiency as compared to larger airports. As a result the costs incurred per movement are substantially higher than their larger airport counterparts.

3. Airport Structure

There are significant differences in the business orientation of regional airports and that of much larger airport operations. Compared to major airports, regional airports face an infinitely higher financial pressure due to a different operational structure. According to Deloitte Access Economics (2012), 30% of total costs

are attributed to payments to labour on average on major and regional airports, which reflects the high capital intensity of the airport industry.

Component of non labour cost	Major airports	Regional Airports
Services and utilities	24%	20%
Other operational costs	21%	25%
Property and maintenance	23%	28%
Recoverable security costs	16%	2%
Regulation and compliance	4%	12%
Other costs	11%	12%
Total	100%	100%

Tab. 1: Non-labour cost structure by airport size, source: Deloitte Access Economics, State of Industry Survey 2012

Due to the airport's role as transport infrastructure asset, and in some cases a commercial and business precinct, there are considerable capital related operational costs. Moreover, the non-labour cost structure does not vary greatly across major and regional airports, as depicted in Table 1.

Taking into account the non-labour costs, the main three differences between major and regional airports are observed for security costs and regulation and compliance as well as for maintenance and operational costs (Deloitte Access Economics, 2012).

At major airports, security costs represent with 16 per cent a high fixed cost associated with airport operations. Smaller regional airports typically have lower levels of passenger throughput or commercial activities, reducing the level of

mandated security into a marginal liability. In contrast, regional airports spend a greater share of resources complying with relevant regulations, including mandatory audits and inspections. On average major airports attribute only a small portion of the total expenses for regulation and compliance purposes. Regional airports, on the contrary, spend around three times more than larger airports (Deloitte Access Economics, 2012).

However, the most important differences why regional airports face considerable financial pressure are the maintenance and operational costs, which considerably differs from that of larger ones.

While the maintenance and operational cost requirements for regional airports are often modest, it represents more than half of all non-labour costs. Whereas major airports face relatively lower maintenance and operational costs, these costs are the main trigger for the operational losses of regional airports, as they typically lack the scale to ensure they can be financially self-sustaining (Deloitte Access Economics, 2012). Adler et al. (2013b) follows the same argument that the low utilization of the fixed infrastructure facilities results in higher average costs per unit of output than at larger airports.

The other part of the airport structure are the revenue streams: revenue streams at airports are usually classified in two forms: 'aeronautical' and 'non-aeronautical' (Australian Airports Association, 2012; Deloitte Access Economics, 2012). In broad terms, the aeronautical side of the business is made up of the fees paid for core airport-related activities such as the provision of runways and traffic operations, terminals, passenger and cargo fees, security, hangar charges and the costs associated with staff. In detail, passenger related fees represent more than half of aeronautical revenue for major airports, followed by the landing fees. This brings the share of both to almost 70 per cent of all aeronautical revenue (Deloitte Access Economics, 2012) as shown in Table 2. Whilst these numbers are representing major airports only, passenger related fees are also the primary source of revenue for regional airports (Baker and Donnet, 2012).

On the other hand, non-aeronautical revenues stem from activities undertaken in addition to an airport's operational requirements, e.g. parking, retail and office lease. The breakdown is shown in Table 3.

Landing fees	Passenger related fees	Rental for hangars	Aircraft parking	Aeronautical security recovery	Fuel levy	Other	Total
14%	54%	8%	2%	12%	1%	9%	100%

Tab. 2: Aeronautical revenue structure of major airports, source: Deloitte Access Economics, State of Industry Survey 2012

Retails lease	Office lease	Parking	Landside transport charges	Other	Total
21%	18%	26%	15%	20%	100%

Tab. 3: Non-aeronautical revenue structure of major airports, source: Deloitte Access Economics, State of Industry Survey 2012

More importantly, the report on Australian airports from Deloitte Access Economics (2012) also reveals a different structure of aeronautical revenue and non-aeronautical revenue streams between major and regional airports. At major airports in Australia, almost half of total revenue is derived from non-aeronautical sources, whereas the share at regional airports accounts only for one-quarter (see Figure 1).

According to Hudson Howells (2012), regional airports have attempted to follow the trend of major airports by creating non-aeronautical revenue streams; however, the opportunities at regional airports are more limited. Given the above business structure, regional airports tend to focus on principal transport infrastructure performance. The smaller economic and passenger base in these areas also make retail and hospitality offerings less viable. Regional airports suffer from the necessarily small scale of operations which impact average costs per unit of output and reduce the opportunities for commercial revenue generation (Adler et al., 2013b).

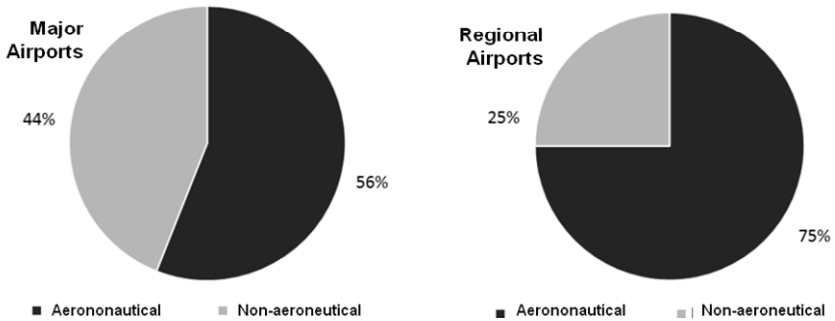


Fig. 1: Sources of revenue at Australian airports, source: Deloitte Access Economics, State of Industry Survey 2012

In the above section, the broad framework in which regional airports currently operate was identified. The following section will introduce the creation of a freight value proposition as a potential revenue stream and analyse the critical factors to establish such a proposition, particularly with regard to regional cooperation.

4. Creating an additional revenue stream via a freight value proposition

In view of the economic uncertainty facing regional airports in Australia, airport managers are looking for ways to diversify their revenue streams (Deloitte Access Economics, 2012). From an aeronautical view, major airports such as Memphis, Louisville or Dubai have grown through integrating freight companies into their operations or through building industry sectors close to the airport (The Economist, 2013). Button and Yuan (2013) argue that attracting air freight and creating a freight value proposition can add a competitive advantage to a regional airport and generate an additional revenue stream. Furthermore, Kasarda and Green (2005) add that an airport with an emerging freight hub is

therefore likely to experience substantial economic growth from the freight industry, not only for the airport itself, but also for the host region.

The air freight industry has undergone considerable growth over the last two decades and is expected to grow even more. The expected growth of passenger traffic internationally is forecast to reach 6.7 billion by 2032 with an annual grow rate of 4.7%. The volume of global air freight is expected to outperform the passenger market with a annual rate of 4.8% (2012-2032). The Asia Pacific region is forecast to grow the most, averaging 5.5% per annum (Airbus, 2013).

This demand can be further fuelled by the development of important industry clusters around airports, which translates into further air freight demand at the respective airport. There is little research on how to attract air freight, particularly on regional airports. Attracting air freight carriers is a two-way process. First, the operational capabilities, which can be seen as internal factors, should match the air freight carrier needs. Second, and more importantly, it is crucial that airports understand what drives the air freight carrier and how their destination, market profile and infrastructure will fit in the air cargo carrier's framework and strategy (TAWG, 2012). Most of these points are outside the airport's influence and can be considered as external factors. A report from TAWG (2012) indicates that government at all levels can assist regional airport growth through the involvement of economic development agencies, industry and partners, and developing policy frameworks that enable tailored local solutions dependent on the airport's needs, particularly in respect of the size of infrastructure required.

5. Conclusion

Regional airports play a critical role in regional Australia. However, as many as 50 per cent of regional airports are financially at risk. Furthermore, local government authorities, who own most of the regional airports, are unable to cope with the current challenges. The deregulation of airports and airport policy

focuses primarily on major airports, while regional airports play only a marginal role for the regional economic development (Department of Regional Australia, 2013). This policy shows a lack of understanding about the different structure of regional airports, as the costs for maintenance and operations are relatively and considerably higher for regional airports compared to major airports and are not financially sustainable. Introducing a freight value proposition at regional airports in Australia could have the potential to create an additional revenue stream. Major airports as well as regional airports have benefitted from attracting air freight carriers and building industry clusters close to the airport. For regional airports, attracting airlines is a critical issue; however most of the factors underpinning why airlines choose an airport are outside the airport's influence. Further investigation in that area is needed, particularly beyond the scope of airport and local government organisational boundaries.

This literature review forms an integral part of my PhD studies, as it describes the problem space in which Australian airports currently operate. Furthermore, the findings of this literature review form the basis for developing the research approach and the next steps in my research. Networks play an integral role in ensuring airports are managed in a sustainable manner. The current problem area will be viewed from a network governance perspective, which also forms the conceptual framework. This research approach is used to address the management challenges faced by regional airports for the resources and expertise to make the decisions to foster economic development around regional airports and eventually attract air freight business. In this context, governance covers all aspects of airport operations that are the result of decision-making by both the airport operator (private) and administering authorities (public) including airport ownership; the commercialisation and privatisation of airports; consultative procedures and conflicts; airport and air transport security; legislation and policy; institutional arrangements and public private partnerships. The next steps include interviews with airports and air carriers like "Rex" to further build a comprehensive view of the problem area and to further develop the research question.

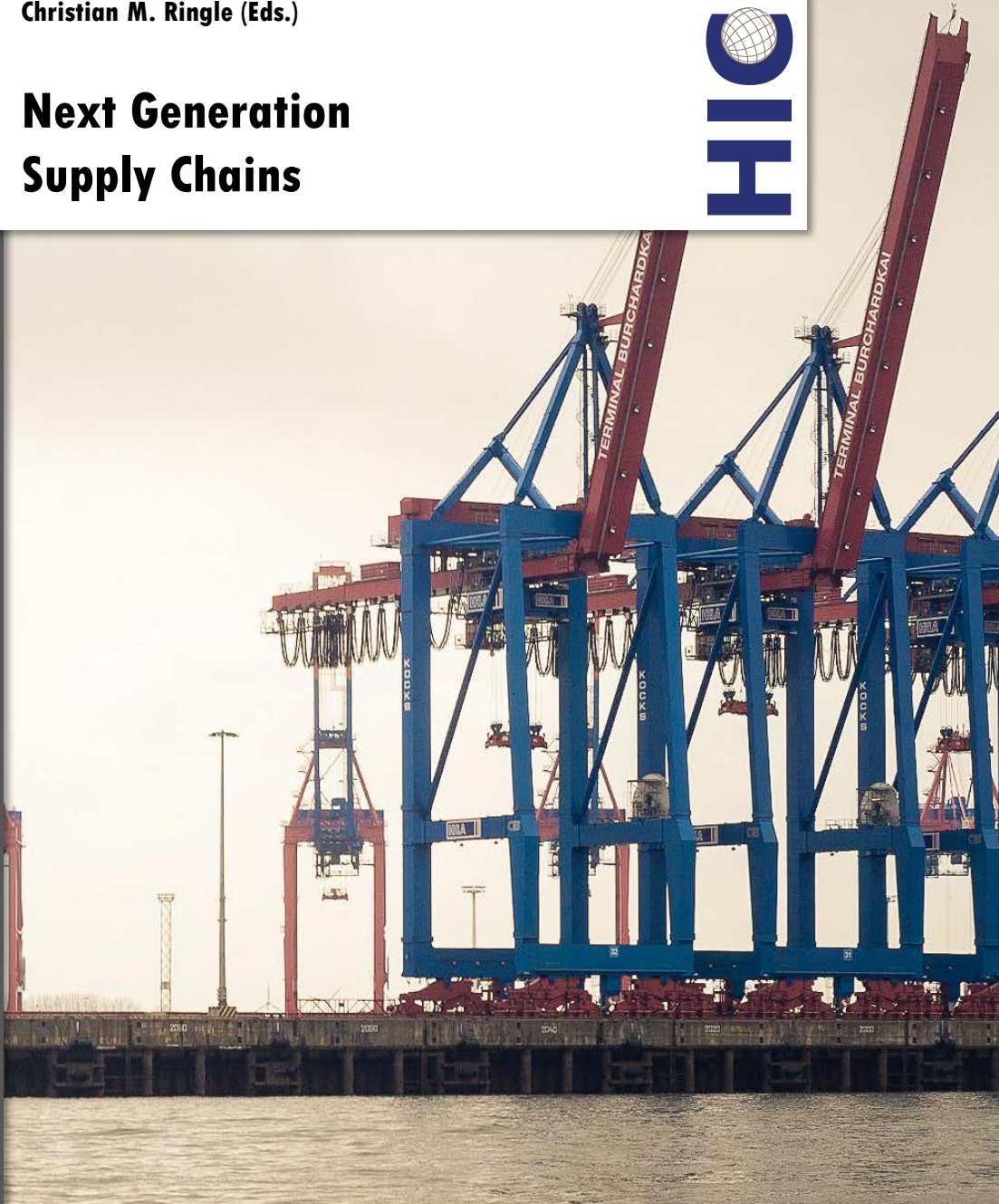
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**Wolfgang Kersten, Thorsten Blecker and
Christian M. Ringle (Eds.)**

Next Generation Supply Chains



Prof. Dr. Dr. h. c. Wolfgang Kersten
Prof. Dr. Thorsten Blecker
Prof. Dr. Christian M. Ringle
(Editors)

Next Generation Supply Chains

Trends and Opportunities

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Preface

Today's business environment is undergoing significant changes. Demand patterns constantly claim for greener products from more sustainable supply chains. Handling these customer needs, embedded in a sophisticated and complex supply chain environment, are putting the players under a constant pressure: Ecological and social issues arise additionally to challenges like technology management and efficiency enhancement. Concurrently each of these holds incredible opportunities to separate from competitors, yet also increases chain complexity and risks.

This book addresses the hot spots of discussion for future supply chain solutions. It contains manuscripts by international authors providing comprehensive insights into topics like sustainability, supply chain risk management and provides future outlooks to the field of supply chain management. All manuscripts contribute to theory development and verification in their respective area of research.

We would like to thank the authors for their excellent contributions, which advance the logistics research progress. Without their support and hard work, the creation of this volume would not have been possible. We would also like to thank Sara Kheiravar, Tabea Tressin, Matthias Ehni and Niels Hackius for their efforts to prepare, structure and finalize this book.

Hamburg, August 2014

Prof. Dr. Dr. h. c. Wolfgang Kersten
Prof. Dr. Thorsten Blecker
Prof. Dr. Christian Ringle

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About HICL

Since 2006 the annual conference Hamburg International Conference of Logistics (HICL) at Hamburg University of Technology (TUHH) is dedicated to facilitate the exchange of ideas and contribute to the improved understanding and practice of Logistics and SCM. HICL creates a creative environment which attracts researchers, practitioners, and industry thinkers from all around the world.



Innovation is increasingly considered as an enabler of business competitive advantage. More and more organizations focus on satisfying their consumer's demand of innovative and qualitative products and services by applying both technology-supported and non technology-supported innovative methods in their supply chain practices. Due to its very characteristic i.e. novelty, innovation is double-edged sword; capturing value from innovative methods in supply chain practices has been one of the important topics among practitioners as well as researchers of the field.

This volume, edited by Thorsten Blecker, Wolfgang Kersten and Christian Ringle, provides valuable insights into:

- Innovative and technology-based solutions
- Supply chain security management
- Cooperation and performance practices in supply chain management

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