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# **Disclosure as a tool in Stakeholder Relations Management: A longitudinal study on the port of Rotterdam**

**Theo Notteboom, Giovanni Satta, Francesco Parola, Lara Penco.**

## **Abstract**

This study applies stakeholder management principles to the port domain. We provide a conceptual framework for evaluating the communication strategies a (landlord) port authority relies on in the management of its relevant stakeholders and the adoption of disclosure to critical issues.

The theoretical arguments are supported by empirical evidences from the Port of Rotterdam (PoR), i.e. a major port which leverages on disclosure to successfully manage stakeholders and support the implementation of corporate strategy. The research questions are addressed using a content analysis on the annual reports (ARs) of PoR in the period 2000-2012.

The overall research design enables the investigation of PA disclosure as a tool for managing the evolving interests of stakeholders under a longitudinal perspective. The PoR case shows that the relative importance of topics reported in the ARs change over time, as a result of external pressures and internal key events. The outcomes demonstrate the growing attention of PoR on topics relevant to the broader community (e.g. environment, safety/security) after a period characterized by a prominent focus on financial and governance issues. Besides, key breakthrough forces stimulating the shifts in landlord communication strategies are identified and discussed.

Finally, by suggesting an indirect approach to evaluate how PA prioritizes its salient stakeholders, the paper adds to extant port literature and brings methodological implications.

**Keywords:** port authority, stakeholders, disclosure, salience, longitudinal analysis.

## **1. Introduction**

The concept of stakeholder has increasingly attracted the attention of both practitioners and academics, favouring a widespread diffusion of stakeholder theory principles in a wide array of socio-economic domains, such as private firms, public institutions, as well as non-governmental and hybrid organizations (Koppell 2006). Among “hybrid organizations” (Bozeman 1988; Koppell 2001) a Port Authority (PA) constitutes an excellent field of application for stakeholder

management theory. Its hybrid nature, in fact, requires an ad-hoc investigation of the strategies for balancing public and private interests (Koppell 2006; Van der Lugt, Dooms, and Parola 2013). In particular, under the landlord port model the intensity of public-private interactions becomes even more apparent, given the combination of public port ownership/administration and private port business (Guasch 2004). The role of landlord PAs, indeed, has come under multiple pressure from a variety of stakeholders, at a local and global scale, given the on-going transformations and competitive challenges (Dooms and Verbeke 2007; Denktas-Sakar and Karatas-Cetin 2012). As a result, port managers increasingly resort to stakeholder management practices to secure long-term relations with critical stakeholders. In this perspective, the adoption of new forms of communication, both in terms of media and contents disclosed, becomes an important tool for managing salient stakeholders (Pando, Araujo, and Maqueda 2005; Cahoon 2007; Parola et al. 2013).

This study adopts stakeholder management principles in the port domain and provides a conceptual framework for evaluating how (landlord) PAs rely on communication strategies in the management of their relevant stakeholders. The theoretical arguments are founded on empirical evidences from the Port of Rotterdam (PoR) case, as it represents one of the major landlord ports in the world holding a well-rooted experience in the adoption of stakeholder management tools and disclosure mechanisms within its overarching strategic framework. The paper scrutinizes the disclosure strategy of the selected PA and addresses research questions by presenting a content analysis on the annual reports issued in the 2000-2012 timeframe. The overall research design is geared towards the investigation of PA disclosure as a tool for managing the evolving interests of stakeholders under a longitudinal perspective. The contribution is structured as follows. Section 2 briefly recaps the extant literature on stakeholder management and corporate communication in the PA domain. Section 3 provides the conceptual framework while Section 4 presents research design and methodology. Section 5 discusses the contents disclosed by PAs and traces the evolutionary patterns of PAs salient stakeholders, also exploring the main determinants of the reshuffling of the stakeholder groups' bargaining power. Finally, Section 6 summarizes key managerial and methodological implications.

## **2. Literature review**

### ***2.1. Emerging stakeholders in ports***

The growing interest towards stakeholder management in the port domain is due to the profound environmental changes affecting this type of hybrid organization (Verhoeven 2010; Parola et al. 2013). PAs are confronted with multi-facet interactions between public and private spheres in day-to-day operations, especially in the case of landlord ports (Pallis 2007; Paixão Casaca 2008;

Debie, Lavaud-Letilleul, and Parola 2013). Stakeholder management acquires a predominant role in ensuring the convergence of potential conflicting interests held by diverse stakeholders groups (De Langen 2007; Parola and Maugeri 2013). PAs, in fact, are organizations where various individuals and interests coexist, as well as internal and external groups (have to) collaborate for creating value but also “struggle” in the pursuit of their own objectives. In other terms, as the success of ports depends on how port managers succeed in dealing with the interactions between different stakeholders and combining diverse interests towards a converging objective, the concept of “stakeholders” acquires new dimensions and roles in port management strategies (Notteboom and Winkelmanns 2002; Dooms, Verbeke, and Haezendonck 2013; Parola et al. 2013).

In a broad perspective, the stakeholders in a seaport setting can be defined as any individual or group of persons holding a legitimate interest, or being affected by port action or inaction (Notteboom and Winkelmanns 2002). In particular, some contributions emphasised the emergence and increased bargaining power of stakeholder groups in the PA domain, and provided diverse classifications of them (Notteboom and Winkelmanns 2002; Moglia and Sanguineri 2003; Denktas-Sakar and Karatas-Cetin 2012; Dooms, van der Lugt, and De Langen 2013).

This study introduces a classification of PA stakeholders based on ten different categories (Table 1) characterized by homogeneous interests and claims, consistent with mainstream assumptions of stakeholder management theorists (Freeman, 2004). This categorization includes both internal stakeholders, i.e. those actors who are directly part of the PA organization, such as shareholders, managers, employees and unions, as well as external stakeholders. The latter group includes various actors ranging from economic players directly investing in the port area (e.g. concessionaries, freight forwarders, carriers, port service providers, etc.) to firms or institutions located in the foreland or hinterland (e.g. shippers, multimodal transport operators), cruise and ferry passengers, public policy stakeholders and regulators, as well as local community and societal groups of interests.

[Table 1 near here]

The new competitive arena deeply modifies the nature and the intensity of the interactions of PAs with various groups of stakeholders, raising the issue of managing stakeholders’ “multi-directional” influence under an evolutionary and dynamic perspective (Verhoeven 2010). For example, port reform processes aimed at transforming the ownership structure and governance settings of PAs (Cullinane and Song 2002; Brooks 2007; Brooks and Pallis 2008; Caballini, Carpaneto, and Parola 2013), redefine the influential sphere of public stakeholders (governmental departments responsible for transport and economics affairs, environmental departments, etc.) at a local, regional, national or supra-national level (Henesey, Notteboom, and Davidsson 2004; Chlomoudis and Pallis 2004). Moreover, due to the magnitude of external spill-over effects of

ports (Notteboom and Winkelmanns 2002), PAs have been forced to address numerous environmental and safety/security issues in recent years, requiring the adoption of radical changes in the processes and objectives towards sustainable and safe/secure port development and operations. A larger amount of community groups and civil society organizations are scrutinizing port activities and development plans partly because the social, economic and environmental effects of port-related activities reach beyond the mere local environment and affect wider geographical areas (Notteboom 2002). These groups include the general public, the media and the press, and other non-governmental organizations, which may experience benefits or negative externalities somehow related to the port domain (Henesey, Notteboom, and Davidsson 2004).

As port-related stakeholder communities are expanding, port executives are called upon to manage the stakes and objectives of various participants in view of defining and implementing appropriate strategies (Notteboom and Winkelmanns 2002; Wang, Ng, and Olivier 2004; Wang and Slack 2004; Haugstetter and Cahoon 2010; van der Lugt, Dooms, and Parola, 2013). In other terms, the PA needs to provide critical stakeholders with adequate incentives to support port survival and development. Moreover, incentives need to be properly delivered and “communicated” to each stakeholder category. The higher bargaining power of carriers, terminal operators and logistics providers, the interactions with government and local public administrations, and the pressure of societal groups force port managers to be involved in a large number of matters (Van Den Bosch et al. 2011). The introduction of stakeholder management practices and the development of well-rooted communication strategies become a precondition for enabling port managers to respond proactively to these market changes and local community concerns (Henesey, Notteboom, and Davidsson 2004).

## ***2.2. Stakeholder management and corporate communication***

Port managers, which increasingly faced with the dilemma of how to reconcile the competing claims of all kinds of stakeholders, are encouraged to resort to stakeholder management tools (Henesey, Notteboom, and Davidsson 2004; Dooms, van der Lugt, and De Langen 2013). The adoption of stakeholder relations management practices in seaports involves four distinctive steps. First, as argued in Section 2.1, port managers need to identify and classify various (internal and external) stakeholders, and continuously monitor them assuming a longitudinal perspective. Second, the PA is expected to evaluate the potential influence of each stakeholders group on port operations as well as development and planning in the long-term. These two steps imply the mapping and classification of stakeholders and their corresponding list of interests (i.e., topics which they are interested in) (Freeman 2004). The third phase consists of prioritizing critical stakeholders. The mapping of stakeholder hierarchy calls for the measurement of their influence on the port functioning, operations and performance. As proposed by Mitchell, Angle, and Wood

(1997) power, legitimacy and urgency may be applied as criteria for this hierarchy mapping exercise. Notteboom and Winkelmanns (2003) propose a classification and hierarchy mapping of stakeholders along two dimensions: the formal involvement in the decision-making process (i.e. level of legitimate power) and the direct or indirect impact on the process/decision (e.g., moral power and influence exerted via the media).

Finally, the PA has to manage the relations with the most influential stakeholders, ensuring their involvement in the port-related decision processes (Yarnell 1999; Henesey, Notteboom, and Davidsson 2004; Notteboom and Winkelmanns 2003; Brooks and Pallis 2008). For this purpose, critical issues raised by the most relevant stakeholders should be continuously monitored. Their claims and complaints should be examined and considered both in the decision-making processes and in the development of strategic plans and operations. Ultimately, managers are recommended to primarily involve in a particular decision or action those stakeholders who are most intimately and critically involved. Moreover, they are urged to openly communicate with them, providing reliable information and a transparent disclosure about risks, costs, benefits and concerns related to the key strategic choices of the PA (Notteboom and Winkelmanns 2002; Henesey, Notteboom, and Davidsson 2004).

In light of the above, the communication strategies of PAs have become a key tool for interacting with internal and external stakeholders (De Langen, Nijdam, and van der Horst 2007; Siemonsma, Van Nus, and Uyttendaele 2012; Parola et al. 2013). In fact, the introduction of new and innovative communication strategies constitutes a *sine qua non* condition for raising the resources required for achieving PA strategies. Such communication strategies rely on two major underpinnings, i.e. the adoption of new (social) media and the disclosure of additional contents reaching beyond the traditional ones (Cahoon 2007). A number of large seaports tend to leverage on their own port website in order to manage the communication with stakeholders and to legitimize their behaviour and choices, also making online documents available such as annual reports, sustainability reports and other stakeholder-relevant publications.

Port managers are increasingly conscious that disclosure should not be limited to operational throughput and infrastructural endowment, but should be extended to other themes, including economic and financial performances, and even to ethical, social and environmental matters (Pallis 2007). In other terms, there is a potential to decompose PA disclosure to a range of diverse “topics”, tailored to the interest and attention of individual stakeholders (Su et al. 2003; Pallis 2007). Therefore, port managers are expected to carefully scan their most influential stakeholders and those environmental trends which may affect their corresponding interests, beliefs, or objectives. Port executives are also invited to develop communication strategies focused on those topics, which take into account the goals and preferences of the most salient stakeholder groups, i.e. the stakeholders holding a high position in the stakeholder hierarchy. When engaging in such

processes, port managers are recommended to balance the interests and goals of diverse relevant stakeholders categories. Also, they have to better understand the interactions between and within diverse stakeholders groups (Henesey, Notteboom, and Davidsson 2004), in order to identify and highlight those topics and themes, which relate to converging objectives and concerns (i.e. topics which raise the interests of various stakeholders groups).

Given the above discussion, the present contribution aims to find answers to the following research questions:

*RQ.1 Which are the key contents of the disclosure strategies of (landlord) PAs and how have they evolved over time?*

*RQ.2 Which are the salient stakeholders for (landlord) PAs and how have they changed over time?*

*RQ.3 Which are the determinants for the reshuffling of the bargaining power among different stakeholders groups?*

### **3. Conceptual framework**

Based on the above theoretical discussion, this paper applies stakeholder management principles in the port domain. The aim is to provide a conceptual framework for evaluating how (landlord) PAs rely on communication strategies in the management of their relevant stakeholders. In particular, the paper provides a longitudinal analysis of the communication strategies of PAs and evaluates how PAs manage salient stakeholders, disclosing contents coherent with stakeholders' expectations and requests for accountability.

Within stakeholder management practices, the interactions between stakeholders prioritization and the disclosure strategy of the PA can be conceptually addressed following two distinct approaches: direct and indirect (Figure 1). The direct approach addresses how the decisions about stakeholder prioritization affect the disclosure strategies of PAs taking into account the interests and concerns of the more relevant stakeholders groups (i.e., topics, included in PA disclosure contents, which raise stakeholders' interest). Operationally, the PA is expected to "weigh up" stakeholder categories (D.I) and then to estimate their interest in each port-related topic (D.II). As a result, port managers will adopt communication strategies, which address the topics within the interest sphere of salient stakeholders (D.III). The direct approach, however, suffers from some inherent limitations and bias, as it could bring confidentiality concerns related to the "politically correct" assessment of stakeholder hierarchy by the PA. In some circumstances, in fact, PA managers might be induced to not emphasize their attention towards specific stakeholder categories, in order to not displease the others.



[Figure 1 near here]

Alternatively, an indirect approach can be adopted to evaluate how the PA prioritizes its salient stakeholders and manages the relations with them. The indirect approach assigns a “pivotal” role to the “topics” discussed in the communication documents of the PA, as this approach combines the disclosure strategy of the PA with the main areas of interest of the relevant stakeholders. By performing a content analysis on the disclosure of the PA reports (e.g. annual report), it is possible to measure the attention the PA dedicates to each topic (IN.I). As each topic provokes a diverse degree of interest from the different stakeholder groups, it is possible to score the importance and relevance each stakeholder assigns to each topic (IN.II). The outcome of this exercise is a sort of stakeholders-topics matrix (S/T matrix). Finally, the combination of the output originating from these two empirical activities enables an indirect estimation of the overall attention and care awarded by the PA to each stakeholder category (IN.III). In summary, the indirect approach requires three methodological steps. First, we examine the disclosure by the PA through a content analysis in order to measure the degree of attention given to each topic. Second, we administer an ad-hoc survey to assess the degree of interest raised for different stakeholder categories and develop the S/T Matrix. Third, the outputs of the previous steps are used as inputs for the calculations directed toward the estimation of the attention given by the PA to each stakeholder category.

## **4. Method**

### ***4.1. Research design and case study selection***

We empirically address research questions RQ.1, RQ.2 and RQ.3 by investigating stakeholder management practices and communication strategies of the leading (landlord) PA in Europe, i.e. the Port of Rotterdam (PoR). A longitudinal single-case study methodology is applied. This approach is ideal for scrutinizing “relationships, behaviours, attitudes, motivations and stressors in organizational settings” (Berg 2009; 331). Moreover, a longitudinal perspective is used in order to test the conceptual framework and the logic nexus among the dimensions investigated in a dynamic perspective (Yin 2003). After the development of the research questions (see Section 3), the corporate disclosure of the PA has been identified as the unit of analysis. PA annual reports are used as sub-units of analysis, leading to the development of a richer research design.

Several criteria are used to screen potential candidates for the case study. In particular, in the 2000-2012 timeframe, we used the following dimensions across major EU ports: a) port relevance (total throughput in tonnes); b) international standing (market share); c) governance settings (landlord port); d) proactive behaviour of the PA in managing stakeholders interests (type and variety of

managerial practices adopted); e) disclosure strategy (well-rooted experience in communicating with stakeholders). The above criteria led to the selection of the PoR as the case study PA taking into account the following considerations. First, the PoR is the largest European port in terms of total cargo throughput (i.e. 440 million tons in 2013; Antwerp is Europe's second largest port with a total volume of 191 million tons in 2013) and container throughput (i.e. 11.6 million TEU in 2013 compared to 9.2 million TEU for Hamburg and 8.6 million TEU for Antwerp).

Second, the PoR can be considered as an entrepreneurial landlord port. The PoR is globally considered as a leading port in terms of port planning, port development and port cluster management practices. The PA is actively pursuing internationalization strategies (see Dooms, van der Lugt, and De Langen 2013 for details), partly to showcase its know-how abroad. In recent years, the PoR developed a strong commercial orientation supported by its specific governance structure as a corporatized and largely depoliticized PA (Notteboom, De Langen, and Jacobs 2013). As Europe's largest port, the PoR has adopted a leadership role in shaping the debates on port policy formulation and in enhancing inter-port knowledge exchanges and cooperation on port planning, environmental, safety and security issues. This is exemplified by the prominent involvement of the PA in a range of committees of European Sea ports Organization (ESPO) and International Association of Ports and Harbors (IAPH). Third, the PoR is located in one of the first European countries/regions where government policy and public opinion started to attach great importance to environmental and safety/security issues. The first comprehensive statement on the environment by the Dutch government was issued in 1972 and the country soon became an initiator of new environmental policy concepts (Lieverink 1997). The two defining characteristics of Dutch (environmental) policy are long range planning (a typical characteristic of Dutch culture) and achieving a consensus between government and interested stakeholders. These two aspects are also found back in PoR's strategy as exemplified by the long term strategic planning exercise 'Port Vision 2030' (a draft 'Port Compass' document was presented to stakeholders in May 2011), and the planning and decision process on the massive port expansion project 'Maasvlakte 2', a process which started in the 1990s with the Project Mainportontwikkeling Rotterdam (PMR) trajectory.

#### ***4.2. Assessing PA disclosure: content analysis technique***

A content analysis on the Annual Reports (ARs) of PoR within the sample timeframe (2000-2012) has been performed in order to investigate PoR's disclosure. ARs are selected as subunits of analysis for a number of reasons. First, an AR is largely acknowledged as an ideal proxy for addressing disclosure, being a valuable and self-reliable tool for external communication (Tilt 1994). Second, we focus on ARs as they consider all stakeholders, whereas we exclude other relevant reports and disclosure tools (e.g., green reports, sustainability reports, strategic planning documents, etc.) which are rather thematic and address specific stakeholder groups. In other words,

ARs are preferable because they are not written for the sake of one specific stakeholder category. Finally, the institutional and legal principles guiding the editing of ARs ensure a higher degree of homogeneity and comparability among documents over time. Other scripted forms of communication (e.g., press releases, brochures, ad-hoc reports, conference papers, etc.) are disclosed at irregular intervals and their contents are modelled by (often different) managers for matching specific expectations of stakeholders in a given moment. Oral communication tools (e.g., press conferences, keynote speeches, informal talks, etc.) and image communication tools (e.g., symbols, pictures, graphs, poster presentations, etc.) are released in uneven forms, and this makes content analysis and cross-documents/speeches comparisons rather arbitrary and biased. Therefore, for our purpose five ARs are analysed, one every 3 years in the period 2000-2012 (i.e. 2000; 2003; 2006; 2009; 2012). We rely on three-year periods as they are long enough to capture structural shifts in disclosure and short enough to establish links with specific infrastructural and institutional plans and actions.

A content analysis is a systematic, objective and quantitative technique for obtaining reliable and valid information from narratives (Krippendorff 1980; Neuendorf 2002). It is the most important methodology used by scholars in the study of firms' communication, in order to obtain reliable information from reporting activities (Hooks, Coy, and Davis 2002; Boesso and Kumar 2007). This technique has been introduced in maritime and port economics fairly recently (Pallis et al. 2011). The adoption of this labor-intensive and time consuming methodology requires different stages in line with similar contributions (Parola et al. 2013). The analysis was performed using QDA-Miner, i.e. a software package performing non-numerical analysis of de-structured information. This software supports the coding process, the text search and the elaboration of results. First, the text included in the sample documents prepared for further elaboration by the software and then split in text units (i.e. the elementary units of analysis).

[Table 2 near here]

Second, the conceptual framework for classifying data has been developed by defining the “code tree” and the relevant codes (i.e. the code book). In particular, in line with analogous contributions (Beattie et al. 2004; Parola et al. 2013) four dimensions were introduced in order to analyse each text unit: type (i.e. qualitative vs. quantitative); time orientation (i.e. backward, forward or undefined); typology (i.e. non-financial vs. financial) and semantic value (i.e. main topic disclosed). The semantic value covers 27 possible topics (Table 2). The list of topics was prepared via several integrations and modifications of the model proposed by AICPA (1994). The modifications were needed to explicitly consider the peculiarities of the seaport environment and to condense the total number of items. Practitioners and port managers were individually asked to review the list of topics in order to ensure suitability and avoid ambiguity. The list was iteratively revised in conformity with the feedback received from these experts. Overall, between February

and April 2013 thirteen executives from five European PAs were involved in this phase of the research.

Third, the researchers involved in the study (coders) assigned the codes to each text units of the ARs. Overall, 6,686 text units were identified and 26,744 codes were allocated. Finally, a detailed verification of the reliability and consistency of both data and procedures was performed in order to minimize the subjectivity risk of the content analysis method (Krippendorff 1980; Neuendorf 2002). In particular, coherently with Weber (1985) and Boyatzis's (1998) recommendations we verified the coding procedure and the inter-coder reliability. The level of agreement between the different coders involved in the analysis was tested by applying both the Free Marginal Adjustment coefficient provided by the QDA Miner software and the Scott's pi coefficient of agreement. In relation to both coefficients, the agreement scores of each document were higher than 0.8, and therefore in line with the acceptance range (0.70-0.80) commonly adopted by extant literature (Lombard, Snyder-Duch, and Campanella Bracken 2002; Neuendorf 2002).

#### ***4.3. Scoring topic relevance for stakeholders: the structured questionnaire***

We used the survey method in order to score the relevance of various topics for different stakeholder groups. In particular, the degree of interest awarded by each stakeholder group to each topic included in the list was estimated using an ad-hoc structured questionnaire. This questionnaire was presented to a panel of international scholars with a strong background in the maritime and port-related research domain. The experts were asked to fill out the questionnaire by distributing the 100 points awarded to each stakeholder group within the list of themes. The questionnaires were emailed to 40 academics. Overall, 21 questionnaires were returned. After removing incomplete forms 19 usable questionnaires remained, corresponding to a 47.5% response rate. The responses were used to calculate the average score assumed by each topic for each stakeholder group within the S/T Matrix (Table 3). Finally, we measured the total amount of interest generated by the  $j$ -th topic for all stakeholders ( $K_j$ ).

#### ***4.4. Hierarchizing stakeholder salience***

The estimations of the PA attention for each stakeholder category through the disclosure of a determined topic were obtained by using the S/T Matrix as a basis for a new matrix (Table 4), where each cell value was divided by the column total ( $K_j$ ). The combination of these data (i.e. coefficients) with the content analysis output (i.e. the count of text units per semantic value) enabled the measurement of the overall attention devoted by the PA to each stakeholder.

## 5. The Port of Rotterdam case

### 5.1. *Communication strategies: the evolution of topics disclosed*

The disclosure strategy of PoR considerably evolved within the sample timeframe. Table 5 demonstrates that the total amount of contents disclosed in the ARs increased significantly and continuously from 2000 to 2012. The number of pages of the ARs increased from 42 (2000) to almost 200 (2012). The text units expanded from 462 to 2,048. When it comes to the “type” of text unit, qualitative text units remain dominant. “Time orientation” statistics provide relevant information about the attitude of PoR toward communication. Although backward information has a strong presence within the observed period, its share reduced over time. Conversely, forward information came more to the fore both in absolute and relative terms (from 69 to 444, and from 14.94% to 21.68%, respectively). This observation points to a growing eagerness of PoR to externally communicate to various categories of stakeholders about future actions and plans. Finally, the ARs contain more non-financial information than financial information.

Table 6 gives a comprehensive overview of the “semantic value” of the text units. In 2000, financial information related to debts, investments and profitability are among the most frequently addressed topics (DEBT = 10.61%, FININV = 9.52%, PROF = 6.49%), as well as information about competition, cooperation and concessions (COO = 5.41%, CONC = 6.93%). In addition, text units concerning environmental issues and public authorities present a valuable presence in the AR (ENV = 6.49, PUBREL = 5.41%). At that time, PoR still was a municipal department and acted as a public landlord responsible for port development and nautical safety with a strong mission to support regional economic growth.

In the following years, the attention of PoR to various topics changed significantly. In 2006, information related to the PA management, organization and structure as well as ownership, shareholders and employment was remarkably more present than in the other ARs (MGT = 6.01%; OWN = 3.11%; EMP = 8.57%). In the same year, the data on profitability and financial investments were strongly communicated externally (PROF = 12.57%, FININV = 11.46%).

[Table 3 near here]

[Table 4 near here]

The corporatisation of the PoR in 2004 and the planning and construction of Maasvlakte 2 might provide valid explanations for the increased focus on governance issues and financial performance in the 2006 AR compared to the prior ARs. In the early 2000s, market developments challenged the PoR to become a more active landlord by developing commercial activities in and outside the port area, by strengthening market-based knowledge and know-how, and by taking up a leadership role in bringing market-related stakeholders together to address the competitiveness of the port in

a supply chain setting. These challenges opened a discussion on the appropriateness of the governance structure of PoR. After breaking the initial resistance of municipal politicians and going through a transition period characterised by institutional plasticity through the creation of a more independent holding company “Mainport Holding Rotterdam” (Notteboom *et al*, 2013), PoR was corporatized. PoR became a public corporation in January 2004 with two shareholders: the municipality of Rotterdam as the majority shareholder and the national government as minority shareholder (Jacobs, 2007). The involvement of the national government in shareholding of PoR was linked to a second key factor in the changing “semantic value” orientation in the 2006 AR: the realization of the massive Maasvlakte 2 port extension project. The corporatisation of PoR and the entrance of the State as shareholder were preconditions for the government to grant permission for and partially finance this project. The combination of a corporatized structure, the associated accountability of the PoR board, a more commercial and performance-based orientation of the PoR and the massive investments of PoR in Maasvlakte 2 gave rise to an increased focus on financial results and the governance structure of the port. This is reflected on the nature of the text units in AR 2006 compared to earlier ARs.

In more recent years, PoR has re-oriented its disclosure strategy towards different topics and themes. This reorientation was facilitated by the closure of the very long stakeholder discussions and planning challenges with respect to the realization of Maasvlakte 2 and by the gradual fading of the aftermath effects of the corporatization of PoR in 2004. In both 2009 and 2012, safety and security, environmental issues, and arguments related to the local community and opinion groups emerged as key contents. The increased attention for safety and security concerns and environmental issues was instigated by a wave of international and European laws and regulations (IMO, EC, etc.), and the global debate on safety and climate change fuelled a further emancipation of the public opinion. PAs around the world are increasingly urged to pursue a greening of port management in view of safeguarding their ‘license to operate’ and increasing their economic and environmental competitiveness. The increased attention of PoR to environmental issues is clearly reflected on the strong environmental targets linked to the Maasvlakte 2 development (e.g. via reduction, capture and storage of CO<sub>2</sub>; the setting of modal split targets in concession agreements with private terminal operators; a green fleet program, etc.) and the key role of PoR in the World Ports Climate Initiative or WPCI (OECD, 2010; Merk and Notteboom 2013). The WPCI was formally launched by IAPH in 2008 to promote information sharing among world ports, to establish a framework for CO<sub>2</sub> footprint inventory and management and to establish an Environmental Ship Index (ESI) aimed at rewarding the use of environment friendly ships when calling at the participating ports. The strong focus of PoR in the fight against climate change takes an ever more prominent role in the more recent ARs.

[Table 5 near here]

Another clear development in the “semantic value” of the more recent ARs is the increased focus on vision, mission and objectives, strategies and investments, plans, as well as the evaluation of risks and opportunities. These topics experienced a dramatic growth in 2012 (OBJ = 9.47; STRA = 6.98%, PLAN 4.54%, RIOP = 2.83%). The increased focus on risks and opportunities is partly explained by the growing commercial orientation of the PoR (i.e. business case approach), but also by a perceived increase in the volatility and uncertainty in the port environment caused by economic shocks (e.g. the financial crisis in 2008/2009), market developments (e.g. P3 alliance in container shipping, scale increases in vessel size, delocalisation of certain industries), political changes (e.g. Arab Spring) and natural disasters affecting global supply chains (Japanese earthquake, floods in Thailand, hurricanes and typhoons, etc.). The increased focus on vision, mission and objectives, strategies and investments and plans results mainly from the strategic planning exercises initiated by the PA in close cooperation with the entire port community. In this sense, the ‘Port Vision 2030’ is not to be regarded as a completed exercise. Instead, it embodies a continuous and flexible planning process aimed at shaping Rotterdam’s future together with the relevant stakeholders. The more recent ARs not only make explicit reference to this new approach towards long-term port planning, but also contribute to it by communicating with stakeholders. The increased importance of forward information in the ARs is to be interpreted as a way to feed the continuous long-term planning process.

[Table 6 near here]

In order to assess the evolution in the communication strategies of PoR Figure 2 provides two heatmap plots derived from hierarchical clustering. These graphic representations portray relative frequencies by adopting a different colour and brightness and facilitate the identification of functional relationships between related codes (rows) and ARs (columns). In particular, in Figure 2 (a) rows have been sorted in descending order of frequency: the higher the code the more frequent the topic. ARs from 2000 to 2009 are found to be clustered together, while AR 2009 and AR 2012 appear more similar to each other than to others. In Figure 2 (b), instead, rows have been sorted on the basis of cluster analysis results, which are displayed on the left side of the heatmap plot. Therefore, codes grouped together under the same cluster (e.g. IND and STRA, INFR and CONC, COO and OPER) are distributed similarly across various ARs. Figure 2 further reveals that the topic groups COM (local community and opinion groups) and OBJ (vision, mission and broad objectives) are distributed in a similar way in 2009 and 2012, while these topics are rather scarce in the ARs of the period 2000-2006. The topic groups ENV (environmental issues and other negative externalities) and RIOP (risks and opportunities) are distributed in a similar manner and appear frequently in the ARs of 2009 and 2012, but can hardly be found in the ARs of the period 2000-2006. Finally, FININV (financial investments) and BUS (port business) have a strong

presence and are distributed in a similar manner in the period 2000-2006, while the level of attention in the ARs on these aspects has decreased in more recent years.

[Figure 2 near here]

Figure 3 presents the correspondence analysis of code frequencies for various years of observations. The correspondence analysis is a descriptive and exploratory technique representing the relationship among entries in large frequency cross-tabulation tables. In particular, a two-dimensional Euclidean space is created, such that the locations of row (code) and column (AR) points are coherent with their associations in the table. The interpretation of the correspondence analysis maps follows some basic rules. First, codes (i.e. topics) with similar distributions (i.e. analogous profiles) among subgroups (i.e. ARs) are plotted near each other. Second, if two ARs have similar profiles of coding, they are plotted near each other. Finally, regarding the relations among codes (i.e. row) and ARs (i.e. columns), only the angle between a code point and an AR is meaningful (not the distance). In particular, an acute angle (i.e. an angle of less than 90°) unveils that they are positively correlated, whereas an obtuse angle (i.e. more than 90° but less than 180°) shows that they are negatively correlated. The results of the correspondence analysis confirm earlier statements made on the relative importance of and temporal shifts in the various “semantic value” codes in the ARs and the relative correspondence among ARs in terms of the distribution of the topics/codes addressed.

[Figure 3 near here]

## ***5.2. PoR salient stakeholders: a dynamic perspective***

Table 7 shows the overall attention devoted by PoR to each stakeholder category in various ARs and enables an appreciation of how stakeholder salience varies over time. The longitudinal perspective reveals a significant change in the hierarchization of stakeholder categories by the PoR (Figure 4). In 2000 the financial community ranks first in terms of salience for PoR (14.42% of the topics disclosed are dedicated to this stakeholder category), being shareholders and concessionaries respectively the second and the third salient group for PoR (12.21% and 10.45%). In 2003 and 2006, the first two categories still maintain their high relevance, while concessionaries progressively lose relevance and new stakeholder groups emerge, including regulators and employees. In 2006, in particular, employees reach the third rank in terms of salience, barring the roots of concessionaires and surpassing regulators. In the following years, emerging stakeholder groups strengthen further their positions. As a result, the stakeholder hierarchization of PoR in 2012 is very different from 2000. The stakeholder group “local community and societal groups of interest” now holds the first rank (11.57% of the contents disclosed), after consolidating its



position in 2009. The financial community slips down to the third position (11.00%), behind shareholders (11.16%), and close to employees (10.91%).

[Table 7 near here]

[Figure 4 near here]

Overall, the analysis of changing interests of the PoR in its stakeholders points to a number of trends. First, the most salient stakeholder groups change over time. Second, new stakeholder categories emerge as critical. Third, the attention awarded by the PoR to the stakeholder categories becomes more equally distributed over time. That is the result of a progressive reduction in the salience of some categories, such as financial community, concessionaries and carriers, and conversely, an increase in the relevance of other categories including employees, passengers, local community and regulators. The results reflect a relative increase in the focus of PoR on topics relevant to the broader community (e.g. environment, safety/security) after having digested a period of an overly strong financial and governance focus in the wake of the corporatisation of the PA and the realisation of Maasvlakte 2.

## **6. Conclusion**

Port Authorities (PAs) as hybrid organizations have to deal with a wide range of stakeholders. Ports are therefore interesting units of analysis when it comes to effective stakeholder relations management. This paper adds to the extant port literature on stakeholder management. The conceptual framework and the method adopted enabled three main research questions to be answered, by identifying the key contents of the disclosure strategies of (landlord) PAs, by tracing the evolutionary patterns of PAs salient stakeholders and by investigating the main determinants of the reshuffling of the stakeholder groups' bargaining power. In particular, the results for PoR show that the relative importance of topics reported in the ARs changed over time. These shifts are partly the result of external influences and pressures exerted by stakeholders (such as the increased focus on the environment and safety/security), but also of internal key events such as major port infrastructure developments and port reform processes.

The correspondence analysis made it possible to further visually quantify the relative importance of and temporal shifts in the various "semantic value" codes in the ARs and the relative correspondence among ARs in terms of the distribution of the topics/codes addressed. Therefore, the paper not only presented observed shifts in a qualitative way, but also showed an innovative methodology to measure longitudinal gaps and shifts. The presented quantitative methodology is new to the field of seaport studies. The linking of topics to stakeholders in an academically sound

way led to a quantification of temporal changes in the overall attention devoted by PoR to each stakeholder category. The results reflect a relative increase in the focus of PoR on topics relevant to the broader community (e.g. environment, safety/security) after having experienced a period characterized by an overly strong focus on financial and governance issues caused by the corporatisation of the PA and the realisation of Maasvlakte 2. The increased focus on community-linked themes such as the environment and safety/security does not come isolated from the earlier implementation of the port governance reform and port extension plans. The corporatized and more commercially-oriented PoR understands more than ever that focusing on these themes is key to safeguarding a 'licence to operate' for its port. Moreover, the approval of the Maasvlakte 2 port extension was subject to a series of strict environmental targets in terms of emissions and nature protection. The investigation of the PoR case has identified key breakthrough forces which stimulated the major shifts in landlord communication strategies, focusing on exogenous and endogenous factors.

From a methodological standpoint, the paper suggests an indirect approach to evaluate how PAs prioritize their salient stakeholders and manage stakeholder relations. This approach assigns a "pivotal" role to the "topics" discussed in the communication documents of the PA, arguing that topics disclosed combine the PAs' communication strategies with stakeholders' interests.

Finally, the paper brings insightful implications for practitioners and port managers providing them with innovative tools for monitoring their disclosure and improve the effectiveness of stakeholder relations management.

Despite the valuable contribution provided, the manuscript still presents some limitations. First the methodology proposed in this paper should be extended to other ports in order to perform comparative studies. The case of Rotterdam might prove to be quite unique considering the size of the port, its path dependence in the area of infrastructure development, governance reform and legal and regulatory framework, and the role of broader cultural and corporate issues such as the communication and stakeholder management practices in the Netherlands. Second, the analysis makes only use of ARs and does not consider any other form of disclosure. Online documents and website contents currently developed by PAs constitute forms of non-active communication to stakeholders. While we have motivated the use of ARs in the paper, ARs might be somewhat biased towards thematic sections which are integrated in the document not because of a far-reaching concern and related action plan by the PA, but just to anticipate or respond in a marketing sense to external stakeholders claims and expectations. Future studies are invited to qualitatively scrutinize communication documents released in other forms, for corroborating the quantitative outcomes of the content analysis presented in this paper. Third, although the paper suggests worthwhile determinants of recent changes in PAs' communication strategies and stakeholder hierarchization, it neglects to empirically test them. Further research is therefore invited to fill this

gap by validating our assumptions through suitable statistical techniques.

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