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## Bolstering Business by Better Understanding Port Customers and Users



27 June 2013

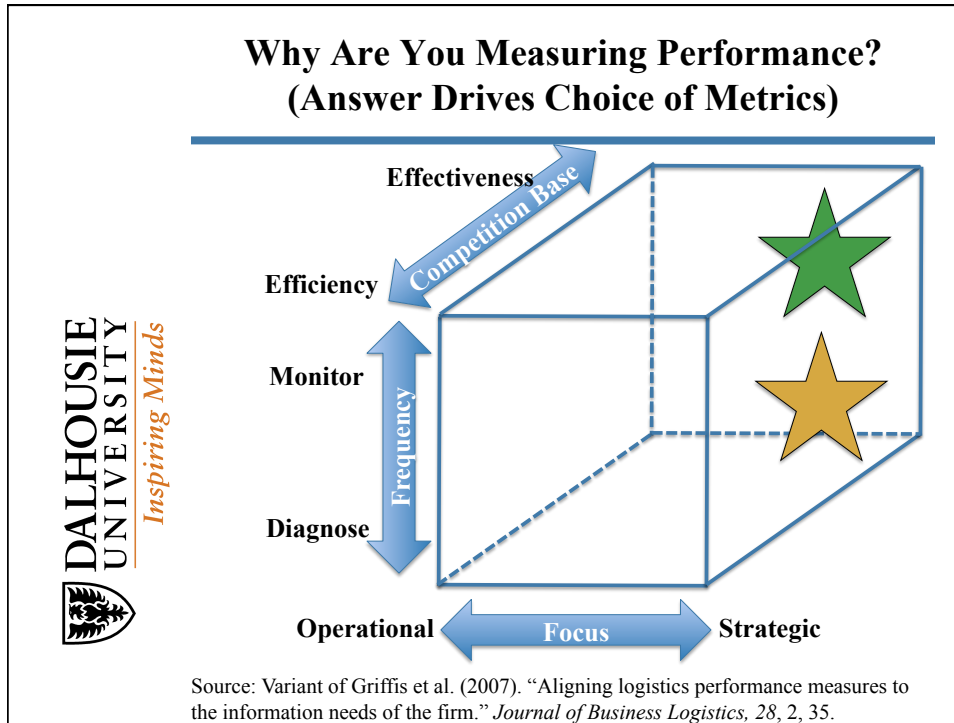
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### Agenda

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- Thinking about performance measurement for ports and how the AAPA's Customer Service Initiative 2012 fits in a bigger picture of port performance benchmarking
- The development of the AAPA metrics and reports— understanding different customer and user groups for making strategic investments in infrastructure and marketing
- Interpreting results
- The future possibilities
- My question for you: Are you ready to invest in better decision-making?
- My suggestion: It is better for ports to invest in benchmarking information as a group than to invest alone. Why?



### Examples of Efficiency and Effectiveness Measures in Ports

<p><b>Efficiency</b></p> <p><u>Financial</u></p> <ul style="list-style-type: none"> <li>• Growth in profitability</li> <li>• Cap. Expenditures as % of gross revenue</li> </ul> <p><u>Non-financial</u></p> <ul style="list-style-type: none"> <li>• Total direct full-time jobs per 000 tonnes of cargo</li> <li>• Loss-time injuries per 100,000 working hours</li> </ul> <p><u>Utilization/Productivity</u></p> <ul style="list-style-type: none"> <li>• TEUs per berth metre or per crane</li> <li>• Tonnes per hectare</li> <li>• Container lifts per crane hour of operation</li> <li>• Cargo tonnes handled per vessel hour at berth</li> </ul>	<p><b>Effectiveness (measuring service perceptions)</b></p> <ul style="list-style-type: none"> <li>• Carrier rating on satisfaction with terminal operator</li> <li>• Supplier complaints per month to port authority</li> <li>• Cargo interests' rating on satisfaction with quality of cargo-handling</li> <li>• Gate congestion (is not a problem to a significant challenge for us)</li> <li>• Hand-off is timely (very poor to very good)</li> <li>• Cargo damage is low/high</li> </ul>
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## What Does Transport Canada Choose to Measure in Canadian Ports? Fluidity



7 Intermodal Indicators (containers)	Units
Truck turnaround time	Minutes
Vessel turnaround time	Hours
Vessel turnaround time per TEU	Seconds/ TEU
Average vessel call size	TEU
Berth utilization	TEU/ m. of workable berth
Import container dwell time	Days
Gross port productivity	TEU/ hectare
Gross crane productivity	TEU/ gantry crane
4 Bulk Indicators	Units
Vessel turnaround time	Hours
Average vessel call size	Tonnes
Berth occupancy rate	Percent
Gross berth productivity	Tonnes/ hour

Source: Transport Canada *Transportation in Canada 2012*, Table M-30A.

## The AAPA's Customer Service Initiative Vision



- An independent third-party assessment of use to ports in effecting change and improving service delivery in supply of port services.
- An individualized report to each port that provides “best practice” scores and the port’s scores to provide context to user “importance” **and that** enables benchmarking for assessing resource allocation
- Each port gets its own report; AAPA gets a “state of its ports” report.
- The first study was done in 2012 and we plan to repeat it in 2014.




## The Goal for Ports: Thinking About Supply Chain Improvements

- ① Identify your port's customers' and users' criteria for assessing service quality
- ② Evaluate the port's performance on both the criteria you control and what you influence
- ③ Determine what needs to be fixed based on those items of importance to the customer and determinant in their assessment of your port's service quality performance
- ④ Via information-sharing, coalition-building, and identifying financial support and sources, you should be able to help your tenants and suppliers to change services under their control

## Identifying the Right Metrics by User Type

- Extensive literature search = 80 criteria (unspecified users)
- Focus groups with users in Canadian ports
- Three studies (the next slide) plus the AAPA Port Customer Service Initiative in 2012 (distributed separately)
- User groups are mostly different in "importance criteria"
- They all also see satisfaction as correlated with customer service (called effectiveness of service delivery).






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### Research Phase 2: 3 Internet Surveys (Phase 1 narrowed 80 criteria to the useful)

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Canadian Port Users 3 Cdn 2 US	}	Same Instrument: 2 publications in 2011— <i>Maritime Policy &amp; Management</i> and <i>Transportation Research Record</i> plus 1 publication in 2013 in <i>Maritime Policy &amp; Management</i>
American East Coast Port Users 5 US Ports		
American West Coast Port Users 5 US Ports	}	Reduced and Modified Instrument for 2012 AAPA survey



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### Phase 3: Service Delivery Effectiveness Performance Measures in 2012 Survey

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User Group	Criteria for Determining Service Quality Performance Effectiveness
Shipping line	19 specific criteria plus two cost criteria
Cargo owners & agents	11 specific criteria plus two cost criteria
Supply chain partners	15 specific criteria

Criteria were “plug and play” based on previous research for this initiative.



## Illustrative Measures AAPA Customer Service Initiative

Cargo Interest Examples (5 of 10)	Shipping Line Examples (5 of 18)	Supply Chain Partner Examples (5 of 14)
Provision of adequate, on-time information	Provision of adequate, on-time information	Provision of adequate, on-time information
Terminal operator responsiveness to special requests	Incidence of cargo damage	Accessibility to port premises for pick-up & delivery (gate congestion)
Availability of direct service to destination	Timely vessel turnaround	Efficiency of documentary processes
Incidence of cargo damage	Connectivity/operability to rail/truck or warehousing	Ocean carrier schedule reliability/integrity
Choice of truck/rail/warehousing	Terminal operator responsiveness to special requests	Speed of stevedore's cargo loading/unloading

## How It Works (1)



**Platform:** LimeSurvey hosted on its own web address on a secure Dalhousie server (not subject to the U.S. Patriot Act)

**What do we measure?**

- The overall performance rating of each port by their users on effectiveness of service delivery (7 point scale)
- Importance of each service criteria to the specific user group (7 point scale)
- The performance of up to three ports used by that user rated on those service criteria (7 point scale)

**Other data collected?**

- Type of user
- Usage data
- Open-ended concerns
- Company demographics

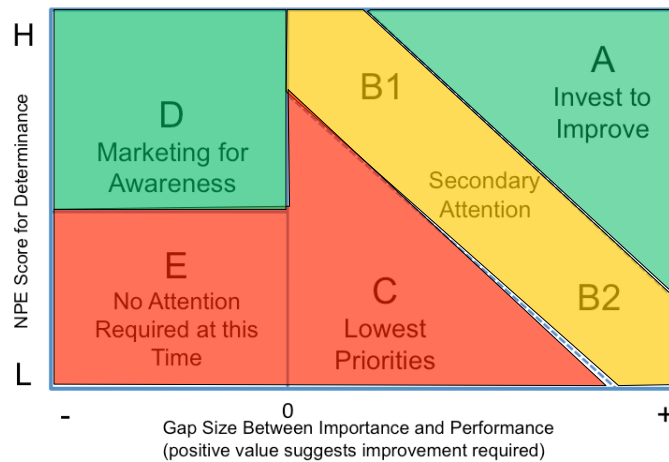
## How It Works (2)



### What do we get as outputs?

- The determinants of the effectiveness of service delivery score for each particular port (using NPE—normalized pairwise estimation) **SCORE INFLUENCERS**
- A gap analysis (importance minus performance) for each user **SERVICE GAPS**
- Direction to each port on their particular ratings and results, including their relative score in comparison with the other ports in the survey. **BENCHMARK**
- Open-ended comments and demographics of the survey participants **INDIVIDUAL FEEDBACK**

## What We Do With the Effectiveness Data Collected

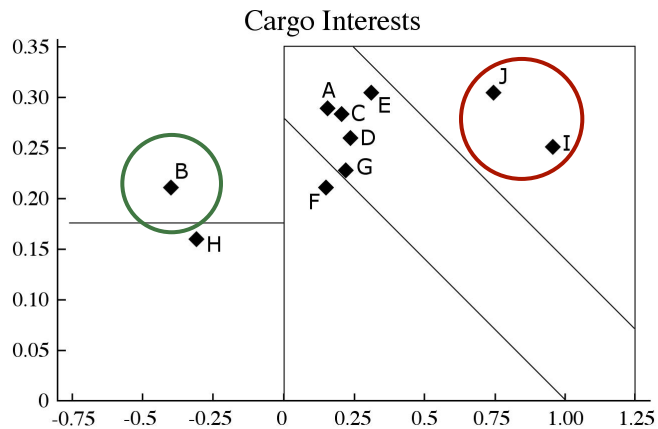


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### Evaluation Report Card by Cargo Interests for the Mystery Port on 9 of 10 Criteria

	Evaluative Criteria	I-P Gap	Performance Mean	Lowest	Highest	NPE	Relative Score
A	Criterion A	0.16	5.16	4.21	6.09	0.289	51%
B	Choice of rail/truck/ warehousing companies	-0.40	5.96	5.25	6.12	0.211	82%
C	Criterion C	0.21	5.63	4.50	5.89	0.283	81%
D	Criterion D	0.24	5.80	5.19	6.11	0.259	66%
E	Criterion E	0.32	5.37	4.55	6.19	0.305	50%
F	Criterion F	0.15	5.77	5.38	6.33	0.211	41%
H	Criterion H	-0.31	6.00	5.50	6.61	0.158	45%
I	Provision of adequate, on-time information	0.96	5.50	5.00	6.08	0.250	46%
J	Terminal operator responsiveness to special requests	0.75	5.19	4.44	5.96	0.304	49%

### Determinance I-P Gap Space for Cargo Interests for the Mystery Port

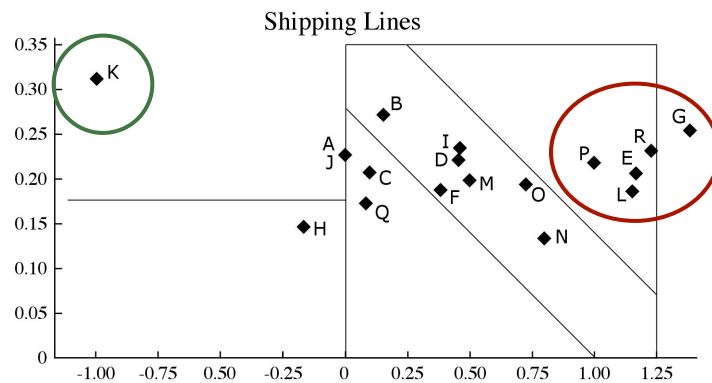




### Evaluation Scores by Container Shipping Lines for the Mystery Port (on 10 of 18 Criteria)

Evaluative Criteria	I-P Gap	Performance Mean	Lowest	Highest	NPE	Relative Score
B Criterion B	0.154	6.08	4.29	6.08	0.271	100.0%
D Criterion D	0.455	5.64	4.29	6.22	0.221	69.9%
E Criterion E	1.167	4.92	3.00	6.18	0.206	60.4%
F Incidence of cargo damage	0.385	5.23	5.22	5.80	0.187	1.7%
G Criterion G	1.385	5.15	4.29	5.80	0.253	57.0%
I Provision of adequate, on-time information	0.462	5.38	5.14	5.89	0.234	32.0%
K Quality of rail/truck/ warehousing companies	-1.000	5.90	5.14	5.90	0.311	100.0%
N Criterion N	0.800	4.80	4.73	6.30	0.133	4.5%
P Timely vessel turnaround	1.000	5.50	4.64	6.11	0.218	58.5%
R Criterion R	1.231	5.00	4.83	6.08	0.231	13.6%

### Determinance I-P Gap Space for Shipping Lines for the Mystery Port



## Open-Ended Comments on Port Performance Provides Feedback

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*For oversize/weight cargo [Port of Mystery] has very good inland capability and vessel ro-ro service; however charter vessel availability/cost is a problem. Also port infrastructure is a limiting factor.*

*Extremely important that port efficiency is at highest possible achievable level. Speed of turnaround times, cost effectiveness & inland distribution capabilities are critically important. Truckers seem less knowledgeable regarding the container pick up & delivery so takes more time to deal ex [Port of Mystery].*

*Excellent infrastructure and ocean connections but the inland clearances are a significant disability.*

*We are a specialized trucking company ... The [Port of Mystery] is not realistic with their hours of operation; they try to serve an industry that operates 24/7 with basically office hours. ... Some days our trucks spend in excess of 4 hours waiting to get into the port and load/unload.*



## With the Reports, Port Managers Can Improve Port Performance if...

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- They know the **importance/relevance** of attributes
- They know user's **perceptions** of port performance overall (e.g., effectiveness in service delivery) and by attribute (e.g., cargo handling)
- Therefore, they identify **performance gaps**
- They uncover the **determinance** of attributes for effectiveness in service delivery
- Have combined this information using a **Determinance – IP Gap Analysis** to identify where to concentrate service delivery improvement efforts (translation: where to allocate resources!!) or where they can market their superior performance to users (because they have a perceptible gap)
- We propose to provide the information needed...





## Our Commitments to Participating Container Ports

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- We promised to not share each port's contact list, to keep it confidential and inaccessible, and to not say to those we contact which port provided the contact information
- Each port providing a contact list received a report indicating the determinants of their score, identifying the attributes that most contribute to their particular overall scores by user type.
- Each port that provides a contact list **of sufficient size** to generate an adequate response rate would see their own score, and the best practice score on each attribute. Ports in 2012 provided 550+ names; the more names the better.
- We did not name the ports in a published report. (Mystery Port, Port A, B... )



## Timetable for the 2012 Study

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- April: AAPA identified participating ports and AAPA participating ports supplied contact lists for the survey. Dalhousie designed surveys for east and west coast ports (2012 showed differences by coast).
- By May 10: contact list merge and cleaning by Dalhousie to ensure the same office of target respondent companies were not approached more than once to respond.
- Survey execution: mid-May to late-June 2012. Three rounds of surveys were done in 2012.
- Data analysis: July-August 2012
- Individual port reports to ports end of Sept. 2012.
- Draft report to AAPA Executive Committee for review by end of October.
- Final report to AAPA December 15. Repeat in 2 years.

## What Participating Ports Thought...

- 1: *The findings provide an insight into what is most important to our customers and also provide a framework for us to use in setting priorities as we look to improve their experience with our port. The report has **practical application** ... pointing out areas needing most attention and areas where we could market for awareness.*
- 2: *The opportunity to gain feedback from key port stakeholders on our port's performance will be **valuable information** to help us and our partners identify and improve key port performance metrics. Despite the 2012 survey being the first year of the study, we found the findings to be in-depth and relevant to our cargo business. The questions are **detailed and provide specific feedback in a wide range of operational areas of the cargo business**. We were pleased with the approach taken by the Dalhousie University research team in identifying important measures of performance and relating those to the value of each measure from the port user's point of view. **The team at Dalhousie is a highly professional, competent group** that can provide solid data and quality reporting on findings. **We encourage other ports to participate in this worthy AAPA initiative** ... We intend to continue participating in this study....*

## What We Found in 2012



- Port user groups rate a port's effectiveness in service delivery differently, i.e., a port that is rated highly by the shipping lines may score poorly when rated by cargo owners or its own supply chain partners, or vice versa.
- No port excelled in serving all three user groups
- The pattern of performance gaps were different on the various criteria for each port.
- In all cases, the initiative identified criteria for targeted improvement for each user group—Cargo Interests, Shipping Lines, and Supply Chain Partners. Each port had a unique portfolio of factors to repair by investing for improvement, and many ports found a usable “market for awareness” opportunity.
- East and West Coast patterns were also noted.



## What We Found in 2013's Further Data Analysis

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- Cargo Owners who book their own transport arrangements are a distinct sub-group from those who act as Agents for owners on five of 13 criteria.
- Cargo Agents are more influenced traditional CRM criteria like responsiveness and information provision while Cargo Owners are more influenced by perceptions of port security.
- The two Cargo segments are best evaluated separately where possible.
- We have learned enough to focus the Shipping Line criteria more tightly in future surveys.
- Supply Chain Partners are a forgotten user group for some ports; with their own unique set of needs, as partners they need to be part of the solution in developing port strategic investments.

## Introducing ... **SEAPORT**

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**S**ervice  
**E**ffectiveness  
**A**ssessment for  
**P**ORT managers

... and it's translated so we can add ports in French and Spanish speaking countries

## Service Delivery Effectiveness Performance Measures



User Group	Statements in AAPA Initiative	Statements in SEAPORT
Shipping line	19 criteria	13 criteria
Cargo owners & agents	11 criteria	8 criteria
Supply chain partners	15 criteria	8 criteria

Cargo owners and agents are 2 sub-groups; same criteria, different patterns

## Thank You



We would like to thank the AAPA for its support/partnership and the participating port authorities that provided extensive support and worthwhile feedback, as well as the almost 200 respondents who took valuable time to provide us with their insights based on their experience with port service. We believe this research will assist in improving the quality of service provided by ports now and in the future

## Your Next Steps ...

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- It is not enough to seek investment funds for gate management, equipment or channel deepening; you need to create value in the supply chains you participate in.
- Are you providing the required level of service; can you make quality on some aspect of service a competitive advantage?
- Improvement to efficiency processes are not the whole story.
- What is your reality check? (Do you benchmark? On what?)

## Our Next Steps

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- The survey is being translated so we can add ports in French and Spanish speaking countries.
- We plan to co-operate with the European Sea Ports Observatory and the PORTOPIA initiative to move the effectiveness benchmarking process to Europe.
- We see it possible to extend the port customer service survey to bulk ports and to cruise terminals. (International Association of Maritime Economists meeting in Norfolk July 2014 will discuss this potential.)
- The 2014 Port Performance Research Network meeting will also be in Norfolk in July.
- When we call you, see the value in being involved...
  - in the 2014 container port survey
  - in the bulk port survey development
  - In the cruise terminal survey development



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**Questions?**  
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**PPRN:**  
**[http://citt.management.dal.ca/Research/  
Port\\_Performance\\_Research\\_Network/](http://citt.management.dal.ca/Research/Port_Performance_Research_Network/)**

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