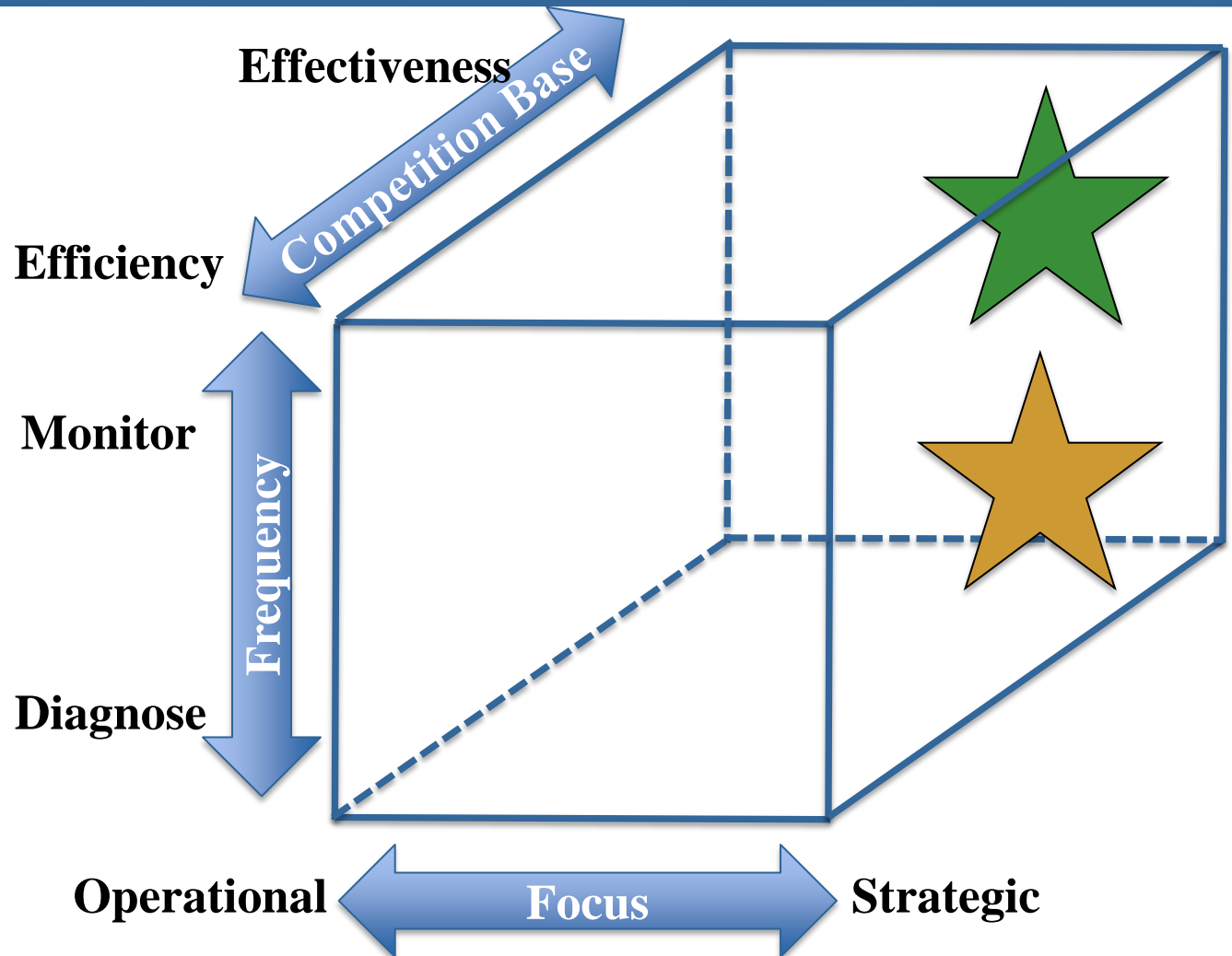# Port Performance Thoughts to Share
Why Measure Performance?
How to Measure?

Why? (Answer Drives Choice of Metrics for Government)
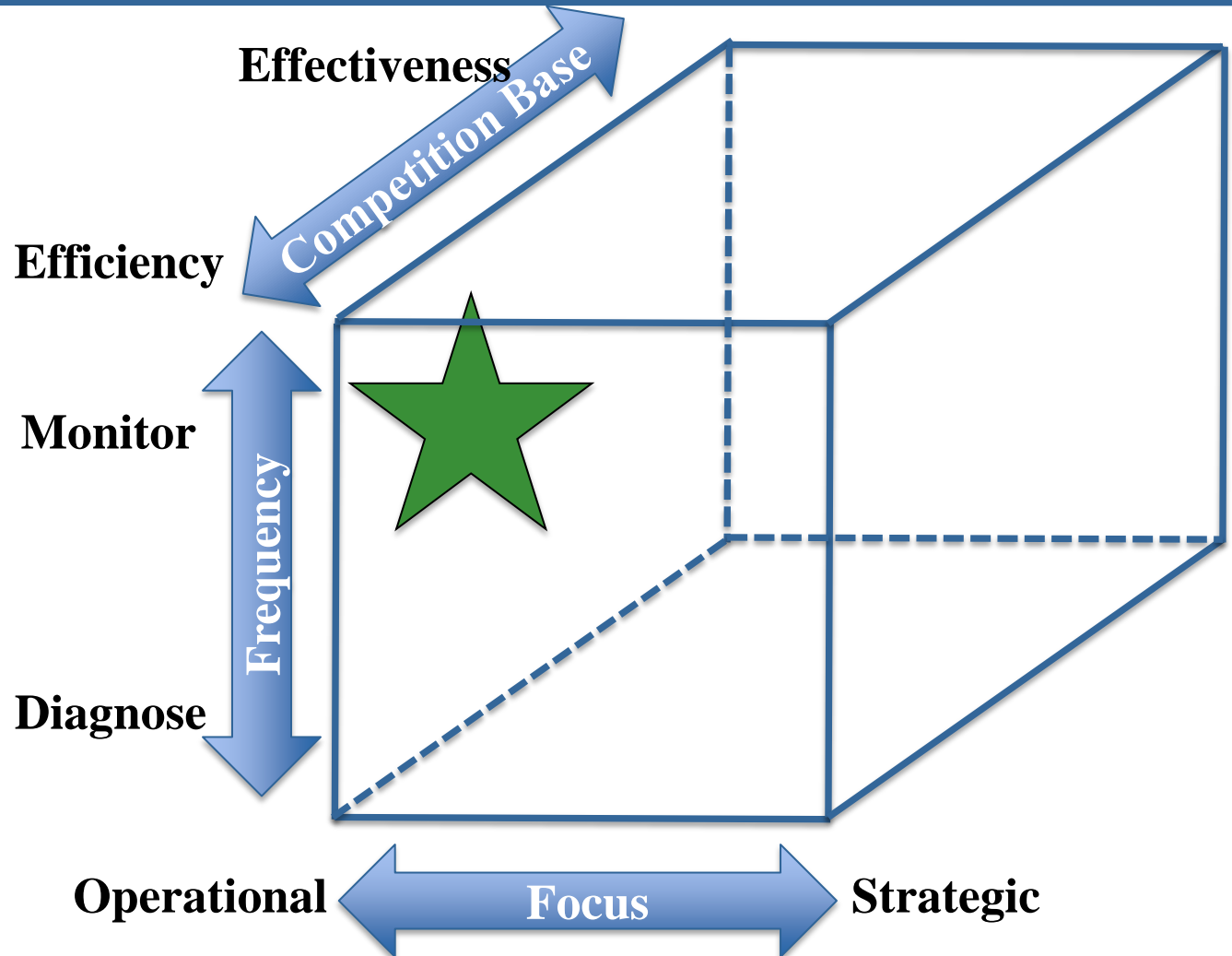
Source: Variant of Griffis et al. (2007). "Aligning logistics performance measures to the information needs of the firm." *Journal of Business Logistics*, 28, 2, 35.

Why Are You Measuring Performance?
(Port Service Perspective)

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Effectiveness

Competition Base

Efficiency

Monitor

Frequency

Diagnose

Operational ← Focus → Strategic

Source: Variant of Griffis et al. (2007). "Aligning logistics performance measures to the information needs of the firm." *Journal of Business Logistics, 28*, 2, 35.

Technical Efficiency

$$\text{Performance} = \frac{\text{Input}}{\text{Output}}$$

Possible Inputs	Possible Outputs
Land (Area in hectares)	Throughput (Tonnes, TEUs)
Labour (Number)	Profit
Capital Invested	Customer Satisfaction
Equipment (Number of cranes)	Ship Turnaround
Port Charges	Berth Utilization

Key Issues:
- How to define the element?
- How to collect the data?
- How to do this uniformly across all ports?

What Does Transport Canada Choose to Measure? Efficiency as 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

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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 it was repeated in 2014 but with port-specific results only.

What are the Effectiveness Outputs?

- The determinants of the effectiveness of service delivery score for each particular port (using NPE—normalized pairwise estimation) SCORE INFLUENCERS for PORTS

- A gap analysis (importance minus performance) for each user SERVICE GAPS (for PORTS)

- Direction to each port on their particular ratings and results, including their relative score in comparison with the other ports in the survey. BENCHMARK (for PORTS)

- Open-ended comments and demographics of the survey participants INDIVIDUAL FEEDBACK (for PORTS)

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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	6.10	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	5.90	0.304	49%

What We Do With the Effectiveness Data Collected

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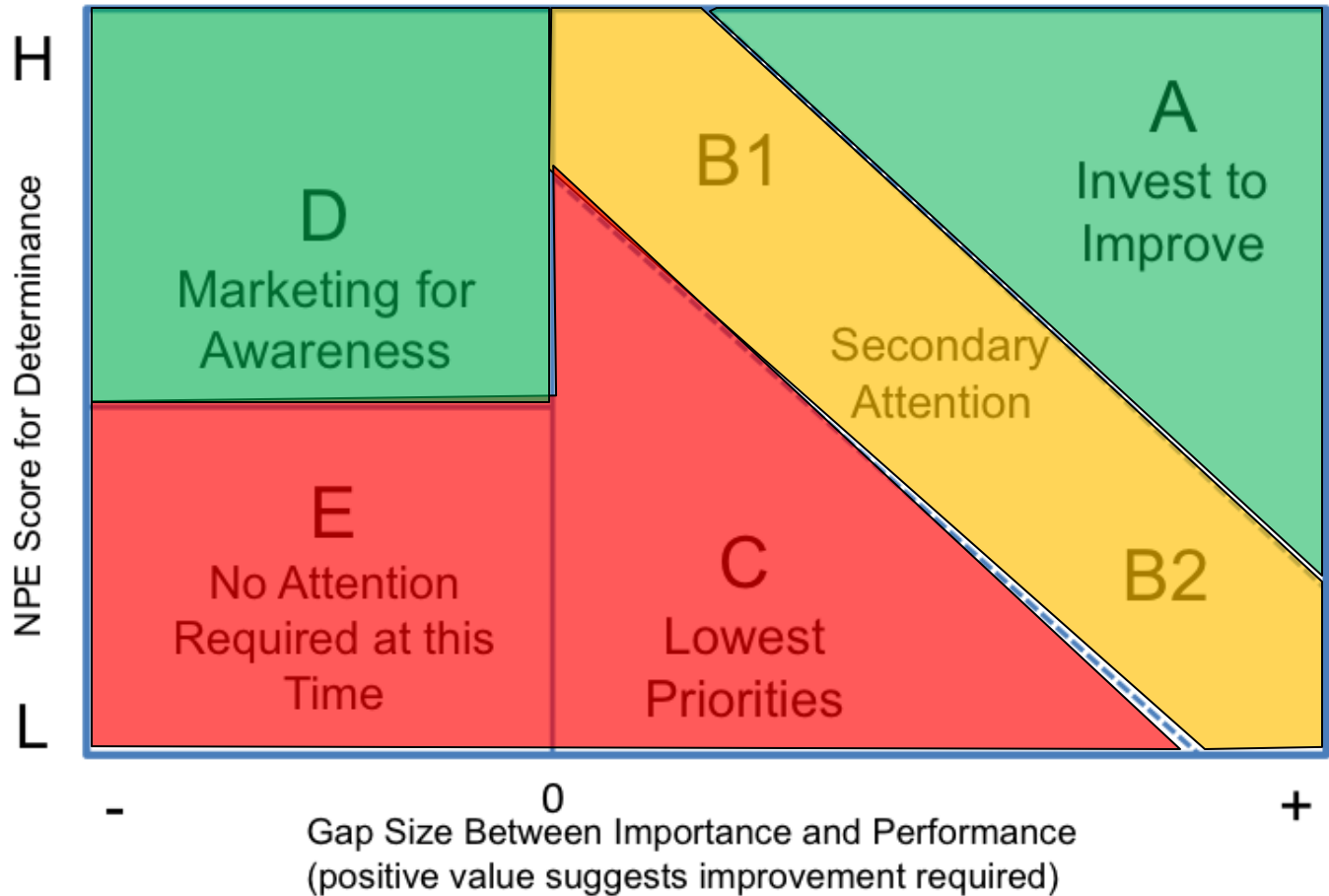
Determinance I-P Gap Space for Cargo Interests for the Mystery Port

Cargo Interests
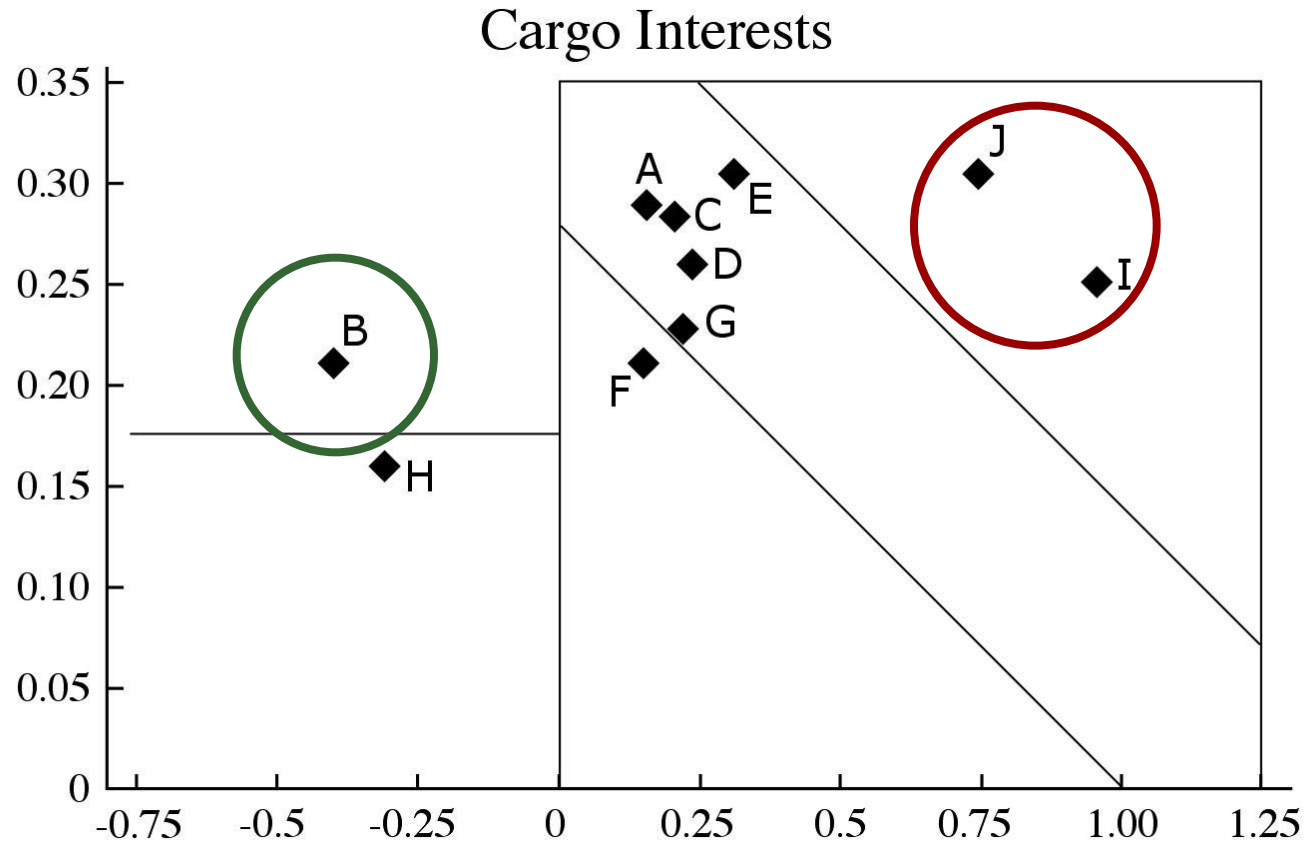
What We Found in 2012

- 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 (Cargo Interests, Shipping Lines, and Supply Chain Partners.)

- 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.

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What We Found in
2013's Further Data Analysis

- **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.

Illustrative Measures for 2014 AAPA Port Service Initiative

Cargo Interest Examples (4 of 8)	Shipping Line Examples (4 of 16)	Supply Chain Partner Examples (4 of 8)
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	Speed of stevedore's cargo loading/unloading

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We have translated the survey into Spanish but have yet to finalize how to extend the program.