Panel titled: “Measuring Trade Facilitation and Border Management Performance”, 12th Annual WCO PICARD Conference, Tunisia, 26-28 September 2017

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Discussion points for the panel

- *How do the new perspectives offered in the above papers differ from the current status quo? What value do they have for customs and others?*
- *What types of institutions are needed to broker consensus on performance targets and communicate them effectively to others at the local, national, bilateral, regional and international level?*
- *How long would it take to develop systems and institutions to support trade facilitation and customs related performance targets? What is required?*

Cross-border Research Association, CBRA, Lausanne, Switzerland :: www.cross-border.org

Past studies / partners / customers include:

DEPARTMENT OF FINANCE

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BASC Business Alliance for Secure Commerce

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UNIL | Université de Lausanne
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Confédération suisse
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Swiss Confederation
Federal Department of Economic Affairs FDEA
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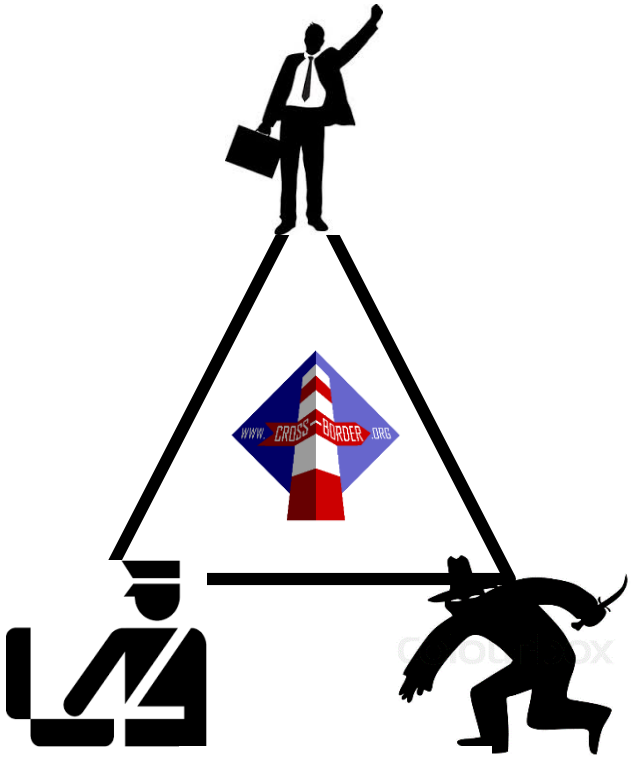
2001 & 2005

5-10

> 30

Projects

> 60



Our FP7-projects include:

CORE

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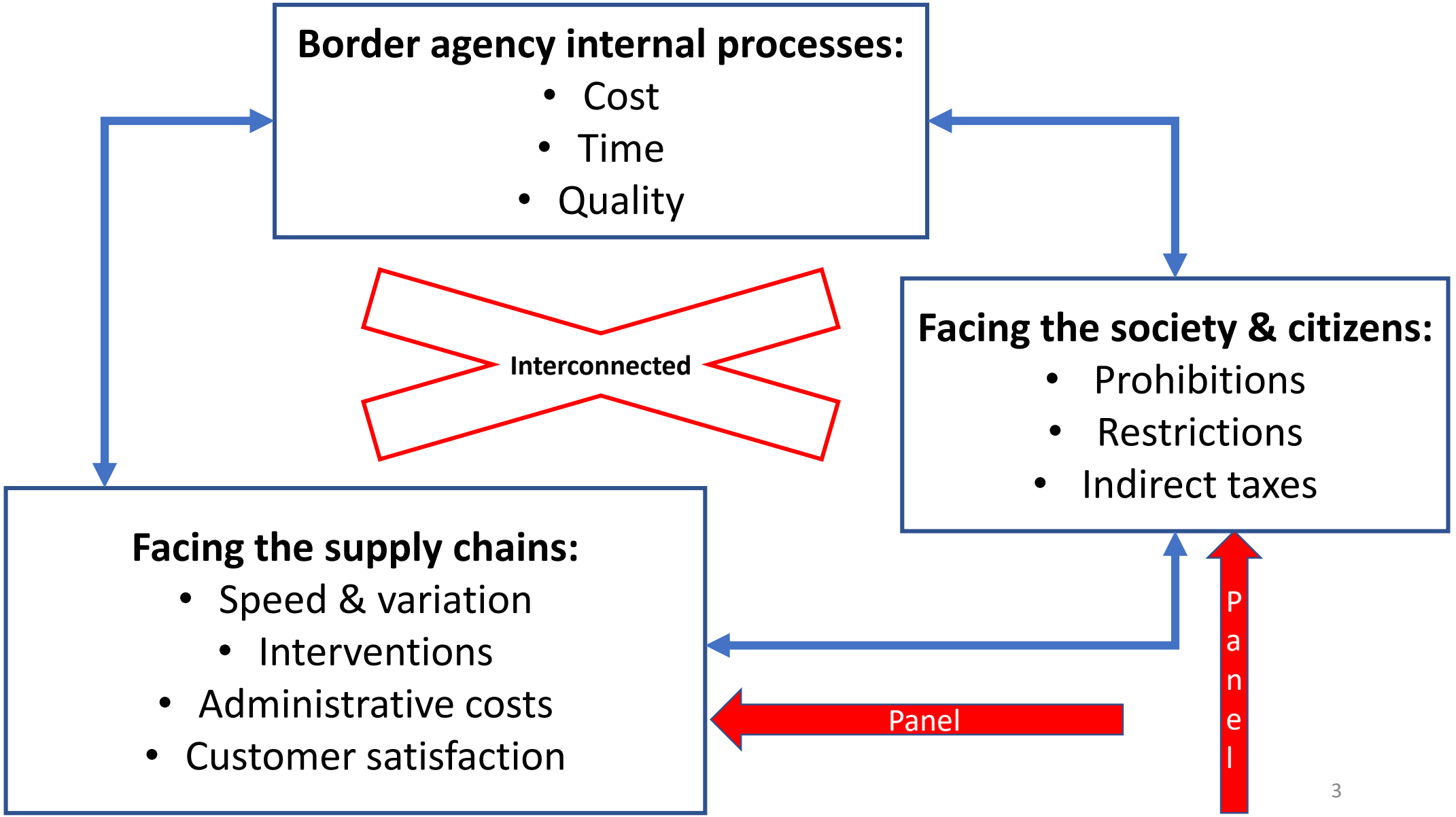
Big picture on "Border-crossing Metrics"



Introduction

- In the past, there have been only limited efforts to capture the overall performance of border management, under a single metric, which would help governmental decision-makers to better target budgets and to justify future border management investments.
- This PICARD2017 panel introduces a new comprehensive metric for measuring holistic impacts of border management.
- This model, developed by the Cross-border Research Association, has been created as part of the FP7-project CORE, in cooperation with several customs experts.
- The proposed index, Customs True Societal Protection Performance (CTSPP), measures effectiveness and efficiency of customs controls at borders, and it can be used to estimate overall protection benefit that custom bring for the society.
- This panel session will give an overview of the model and invite participants to critically evaluate it for its feasibility and usefulness as a border management decision-making tool.

Presenting the baseline model with a simple numeric example

- N = Total number of containers imported = 2 million
- I_T = Targeted inspection rate = 8%
- H_T = Hit rate with targeted inspections = 14%
- I_R = Random inspection rate = 2%
- H_R = Hit rate with random inspections = 4%

Lets do a sample calculation

- N = Total number of containers imported = 2 million
- I_T = Targeted inspection rate = 8%
- H_T = Hit rate with targeted inspections = 14%
- I_R = Random inspection rate = 2%
- H_R = Hit rate with random inspections = 4%

With the targeted inspections, the agency catches:
2 million x 8% x 14% = 22.400 bad containers

Lets do a sample calculation (cont.)

- N = Total number of containers imported = 2 million
- I_T = Targeted inspection rate = 8%
- H_T = Hit rate with targeted inspections = 14%
- I_R = Random inspection rate = 2%
- H_R = Hit rate with random inspections = 4%

With the random inspections, the agency catches:
2 million x 2% x 4% = 1.600 bad containers

Lets do a sample calculation (cont.)

- N = Total number of containers imported = 2 million
- I_T = Targeted inspection rate = 8%
- H_T = Hit rate with targeted inspections = 14%
- I_R = Random inspection rate = 2%
- H_R = Hit rate with random inspections = 4%

With the targeted and random inspections, the agency catches the total of: 22.400 + 1.600 = 24.000 bad containers

Lets do a sample calculation (cont.)

- N = Total number of containers imported = 2 million
- I_T = Targeted inspection rate = 8%
- H_T = Hit rate with targeted inspections = 14%
- I_R = Random inspection rate = 2%
- H_R = Hit rate with random inspections = 4%

Lets make an assumption: the hit rate with random inspections reflects the "total average of illicit with all containers". Therefore, the total number of bad containers heading to the country is 4% x 2 million = 80.000

Lets do a sample calculation (cont.)

- N = Total number of containers imported = 2 million
- I_T = Targeted inspection rate = 8%
- H_T = Hit rate with targeted inspections = 14%
- I_R = Random inspection rate = 2%
- H_R = Hit rate with random inspections = 4%

Finally, the agency has managed to stop/ seize:
24.000 / 80.000 = 30% of the bad containers!

Lets do a sample calculation (cont.)

- N = Total number of containers imported = 2 million
- I_T = Targeted inspection rate = 8%
- H_T = Hit rate with targeted inspections = 14%
- I_R = Random inspection rate = 2%
- H_R = Hit rate with random inspections = 4%

$$\text{CTSPP} = \frac{NI_T H_T + NI_R H_R}{NH_R} = \frac{\cancel{N}(I_T H_T + I_R H_R)}{\cancel{N}H_R} = \frac{I_T H_T + I_R H_R}{H_R}$$

$$= \frac{(8\times 14)+(2\times 4)}{4} \times 100\% = \underline{30\%}$$

Customs True Societal Protection Performance index

February 24, 2017 / in Blog / by Vladlen Tsikolenko

Effective and efficient border management brings wide benefits for international trade as well as for border control agencies – this has been discussed in multiple CBRA Blogs and Interviews in the past. Benefits like increased speed, cost-efficiency, and time-certainty of cross-border logistics can be and already are measured by trading companies and in some cases by border control agencies. Customs and other border agencies also measure performance of border management, by computing values for labour productivity, hit-rates, and other operational metrics. So far, however, there have been very limited efforts to capture the overall performance of border management, under a single metric, which would help governmental decision-makers to better target budgets, and to justify future border management investments.

This Blog introduces a new comprehensive metric for measuring holistic impacts of border management. This model, developed by Cross-border Research Association, has been created as part of the FP7-project CORE, in cooperation with several customs experts. The proposed index, Customs True Societal Protection Performance (CTSPP), measures effectiveness and efficiency of customs controls at borders, and it can be used to estimate overall protection benefit that custom bring for the society. The formula for computing value for the index is the following:

$$Customs\ True\ Societal\ Protection\ Performance = \frac{NI_T H_T + NI_R H_R}{NH_R}$$

, where N = Total number of containers imported, I_T = Targeted inspection rate, H_T = Hit rate with targeted inspections, I_R = Random inspection rate, and H_R = Hit rate with random inspections

The figure below illustrates computations with sample numeric values. Say that 2 million sea containers enter country-Z every year. Let us assume that customs choose 8% of this container traffic for inspection, based on risk assessment customs do based on Entry Summary Declaration (ENS) and other available information for each container. Because customs officers find something illegal in 22,400 of the

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The recent case of a terrorist bomb kit all…

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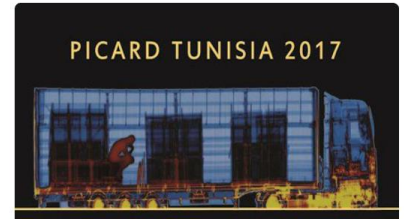
Customs Officers – How unique are they!? cross-border.org/2017/09/24/cus…



Examples of new parameters / ideas for improving the model:

- Increasing the model granularity, by splitting current “total imported containers” (and, the follow-up calculations) into following sub-sets:
- Mode of transport (treat separately maritime containers, sea bulk, air containers, trucks, rail wagons etc.)
- High-risk country of origin (e.g., Colombia for drugs) versus low-risk countries
- Sensitive / high-risk goods (e.g., cigarettes and dangerous goods) versus goods that are low-risk (low tax, non-dangerous, low value etc.)
- Trusted traders & supply chains (AEO or other custom/security certification) versus “non-trusted / unknown operators / companies with low track record of compliance”

Other ideas to improve the model accuracy and/or usefulness:

- Instead of containers, customs declarations could be used as the basis for calculations
- Distinction between inspection methods (data, documents, x-ray, opening container etc.) – with different hit rates, lead times, costs etc.
- Distinction between threat types and their socio-economic negative consequences (fiscal, health and safety, environment, marketplace distortion etc.)
- Hit rates of other border control agencies could be included (e.g. food and health inspection)
- Also, aspects of routing (most economic versus non-economic) and packed versus empty containers could be considered

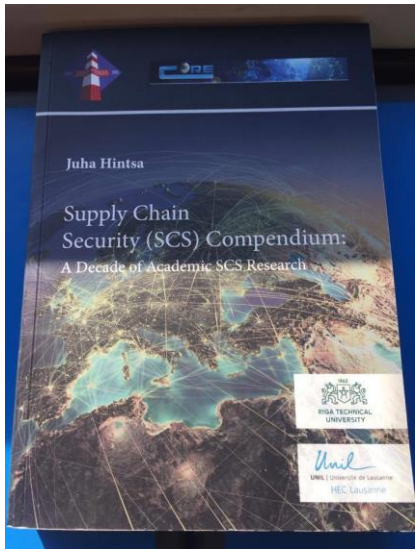
Key discussion points for the panel:

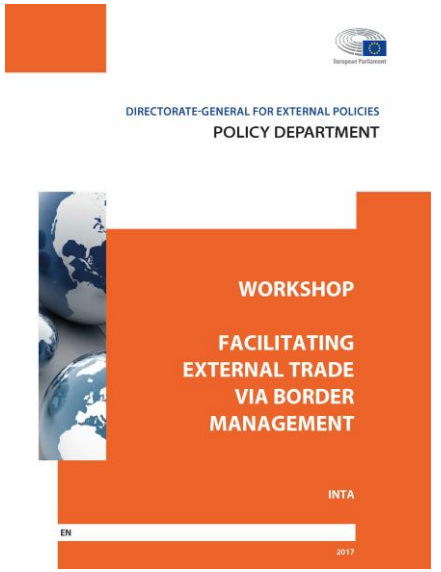
Can real data be made available to carry out actual calculations in one or more countries?

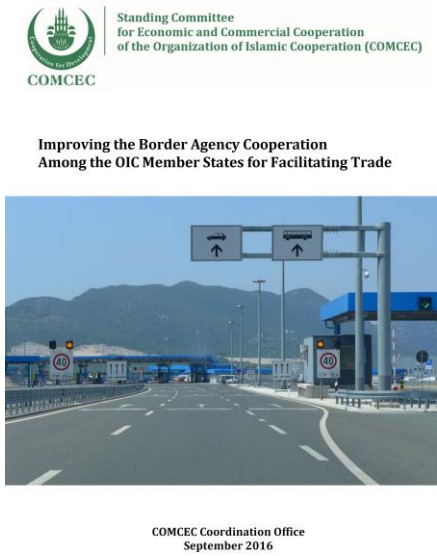
Can the model be expanded / granularity increased / details added to maximize the “realism & usefulness”?

Annex 1. Additional readings

- Hintsa, J. (2017), “Supply Chain Security (SCS) Compendium: A Decade of SCS Research”, HEC University of Lausanne, Switzerland & Riga Technical University, Latvia.
- Grainger A., and Hintsa J. (2017). The role of border management in implementing trade policy goals. Brussels: European Parliament.
- Urciuoli, L. and Hintsa, J. (2017), "Improving Supply Chain Risk Management – Can additional data help?”, Accepted for publication in International Journal of Logistics Systems and Management.
- Hintsa J., Männistö T., Mohanty S., Kähäri P., Wong Chan S., Phan TTH., Salas Chaverri D., Ruyters T., Hameri AP., Tsikolenko V., and Rudzitis N. (COMCEC 2016). Improving the border agency cooperation among the OIC member states for facilitating trade. Final report. Standing Committee for Economic and Commercial Cooperation of the Organization of Islamic Cooperation. Ankara, Turkey, 6.10.2016
- Hintsa J., Urciuoli L. and Tan Y. (2016), “Panel on Authorized Economic Operator (AEO) Benefits and Trusted Trade Lanes", 11th WCO PICARD Conference, Manila, the Philippines.
- Urciuoli L., Hintsa, J. and Ahokas, J., (2013), “Drivers and barriers affecting usage of e-Customs — a global survey with customs administrations using multivariate analysis techniques”, Government Information Quarterly, Vol. 30 No. 4, pp. 473–85.
- Hintsa, J., Männistö, T., Hameri, A.P., Thibedeau, C., Sahlstedt, J., Tsikolenko, V., Finger, M. and Granqvist, M. (2011), Customs Risk Management (CRiM): A Survey of 24 WCO Member Administrations, Study for World Customs Organization (WCO), February 28, 2011, Lausanne.







Annex 2. Trade Facilitation metrics (supply chain facing) in practice today - anecdotes from five European countries

Facing the supply chains:
- Speed & variation
- Interventions
- Administrative costs
- Customer satisfaction

- Sweden: Measuring declaration processing times.

- The Netherlands: Importer-level record keeping and data analytics.

- Hungary: Monitoring impact of border interventions on "supply chain behaviour".

- Switzerland: Promoting and monitoring the progress on e-billing.

- Finland: Executing systematic customer satisfaction surveys.

Few lessons learned:
- *Limited number of metrics works best*
- *Agency – supply chain -cooperation*
- *International agency cooperation*

Annex 3. Few snapshots on “EU Customs Performance Measurement”

EUROPEAN COMMISSION

Brussels, 21.12.2016
COM(2016) 813 final

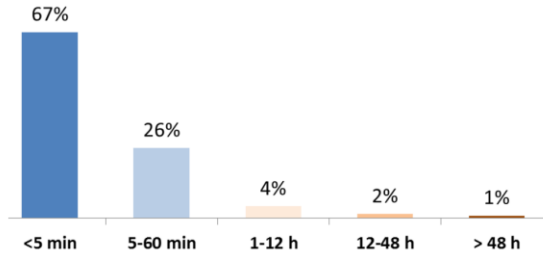
COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL AND THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE

Developing the EU Customs Union and Its Governance

Paperless environment

Nearly all customs declarations, for both import and export, are submitted to Customs authorities electronically.

- The global EU level of electronic input is almost 99%.
- Most Member States do not require any accompanying (paper) documents unless the declaration is selected for control.
- 93% of import customs declarations were **cleared within 1 hour** and only 1% took more than 48 hours to clear.



Source: European Commission, DG Taxation and Customs Union

The Commission will:

- *formalise and develop the role of the Customs Policy Group to focus its work on overall co-ordination of policy and operational aspects within the limits of the current institutional framework;*
- *increase joint meetings between the Commission, national administrations and traders and review the mechanism for consultation of trade;*
- *submit a regular biennial report to the Council and Parliament on the results of the Customs Union work to allow for a regular debate on policy priorities;*
- *instruct its services to establish a set of key performance indicators and, if appropriate, following consultation with stakeholders propose a new legal basis to support the system of performance measurement.*

Study on the Evaluation of the EU Customs Union

(Specific Contract No. 13 implementing Framework Contract No. TAXUD/2010/CC/101)

7 June 2013

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