Introducing functional procurement as an approach to stimulate innovation

Charles Edquist
CIRCLE, Lund University, Sweden

Jon Mikel Zabala-Iturriagagoitia
Deusto Business School, University of Deusto, Spain

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1.- Introduction

- **Grand challenge** mitigation is framing many **innovation policies** and strategies worldwide (Mazzucato, 2018).
  - Potential of **public procurement for innovation** as a relevant policy instrument aiding in grand societal challenge mitigation (Edquist and Zabala-Iturriagagoitia, 2012).

- According to the results of the ERAC consultation (see ERAC 1209/15), the latest estimations for public procurement expenditure on works, goods and services were close to €2 trillion per year (i.e. 14% of European GDP).
  - Public procurement thus represents a substantial portion of the EU economy and the economies of many countries around the world.

1.- Introduction

- The share of the whole **procurement** spending used **to stimulate innovation** remains **insignificant**, even if no comprehensive statistics exist as to date about this.
  - Innovation-related procurement is acknowledged as a **relevant** policy instrument, particularly as a **mission-oriented innovation policy instrument** related to grand challenge mitigation…
  - … but in terms of its implementation and the mechanisms for its effective rolling out, it is still at its infancy.

- This is related to the discussions that are increasingly taking place in the academic realm as to the need to address the "implementation" of innovation policies (see also Robinson and Mazzucato, 2018).

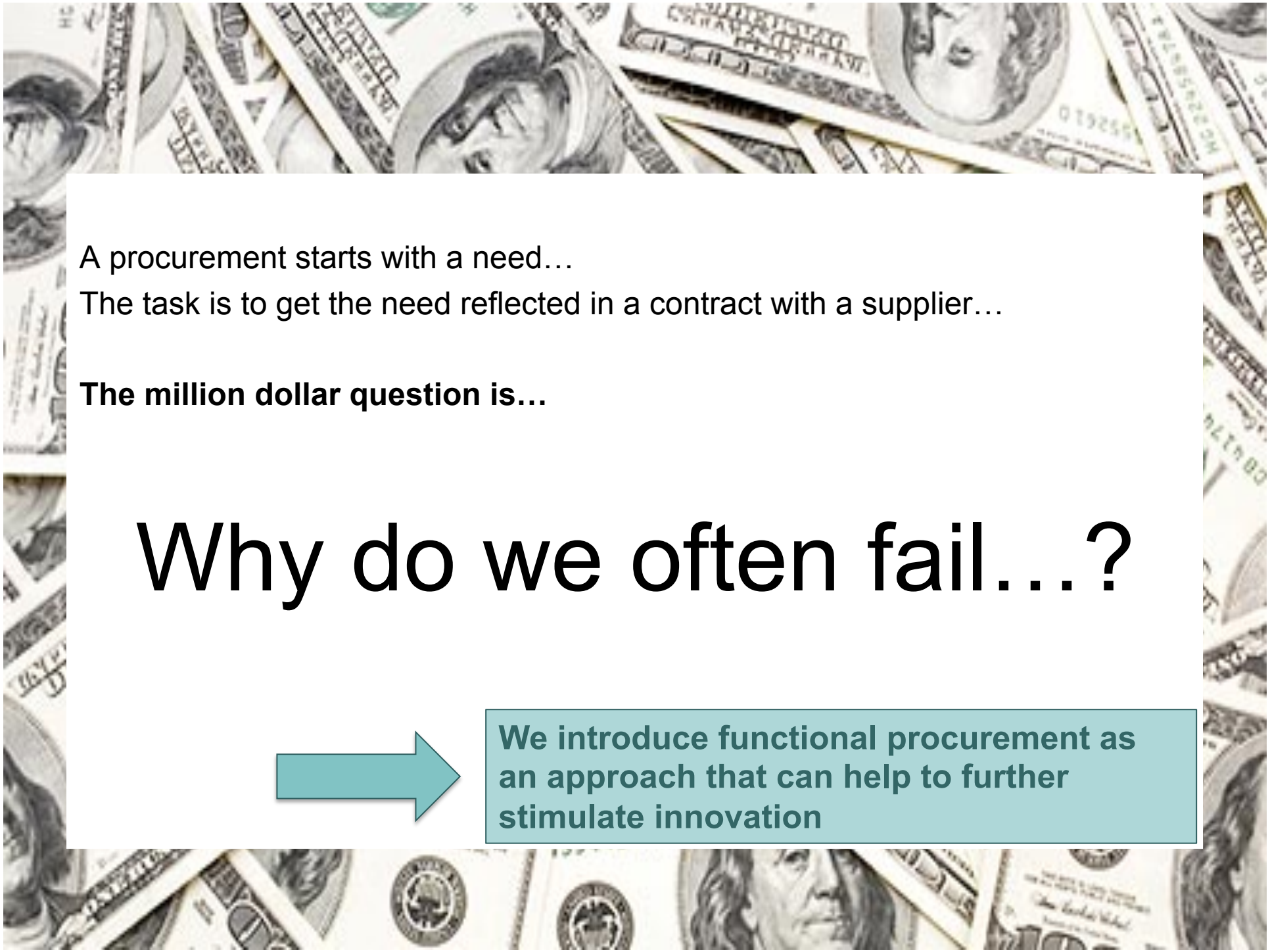
2.- Innovation-related procurement

- What are we referring to when we talk about innovation-related procurement?
  1. Regular Public Procurement: off-the-shelf
  2. Public Procurement for Innovation (PPI)
     - 2.a. Direct
     - 2.b. Catalytic
  3. Functional (regular) Public Procurement
  4. Pre-Commercial R&D procurement (PCP)

(This is not innovation procurement. It is a demand-side research policy instrument)

Innovation-related public procurement

- The different types of procurement can be combined within an **instrument mix**, as they all contribute to the ultimate goal of innovation policy (i.e. to create the conditions and incentives for the systematic emergence, development and diffusion of innovations) (Borrás and Edquist, 2013).



A procurement starts with a need…
The task is to get the need reflected in a contract with a supplier…

The million dollar question is…

Why do we often fail…?

We introduce functional procurement as an approach that can help to further stimulate innovation

3.- Functional Procurement

- Transforming regular procurement into PPI:
  - **Regular procurement** is enormously large (14 % of GDP) but has nothing to do with innovation.
  - The procurement of existing goods and services can partly be **diverted to** explicitly demanding non-existing products (i.e. PPI).
  - **Innovation** could lead to better results for the procurer in the long run in terms of need satisfaction and solving societal problems (but maybe higher costs and larger efforts in the short run).

- Innovation-related public procurement has an enormous potential and can become the most important policy instrument of all.
  - The key is **procurement of functions** instead of procurement of products.
  - **Functional procurement** is needed for all the four kinds of procurement.

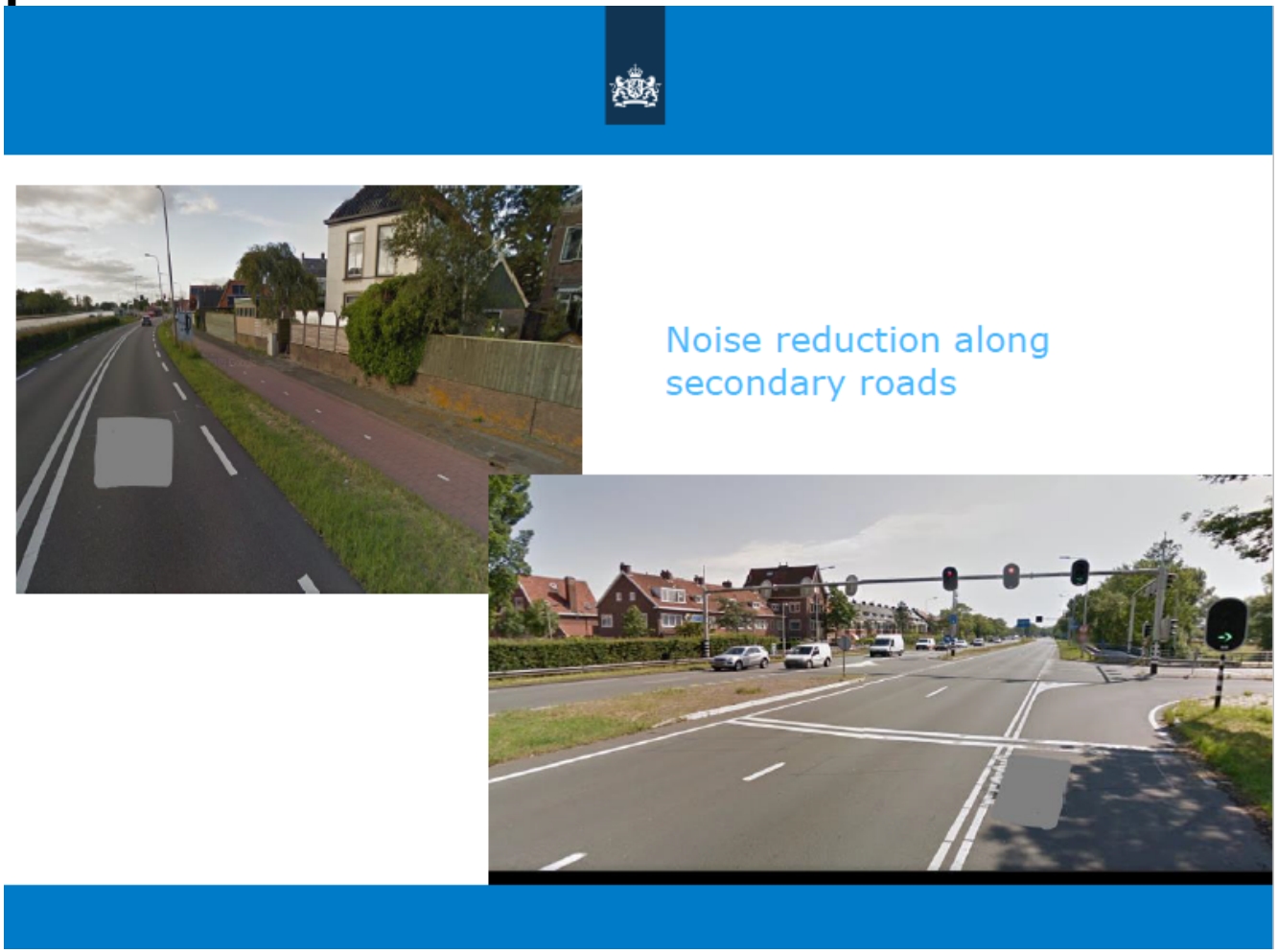
3.- Functional Procurement

- Currently: procurement of products:
  - A large number of regular public procurements are perfunctorily (i.e. in a **routine-like** manner) conducted.
  - The procuring agency or unit describes the same product as in previous procurements in a routine manner (i.e. **cut-and-paste,** path dependency and inertias) (Edquist 2014).
  - Even **obsolete** products are demanded, although better alternatives already exist. Simply describing the previously procured product makes it difficult or impossible for **new products (innovations) to be accepted**.
  - If that is the case, qualitatively superior, products (i.e. **innovations**) may be **excluded** in the procurement process.
  - A routine of simply describing the previously procured products makes it difficult or impossible for new products (innovations) to be accepted. This is a **major obstacle** to innovation.

3.- Functional Procurement

- Functional Procurement:
  - **Functional procurement** can be defined as the procurement by an authority/unit that **describes a function** to be performed or a problem to be solved, a need (functional specification) instead of describing the product that is to perform the function (Edquist, 2017).
  - It is a matter of **what** shall be achieved rather than **how** it shall be done.
  - It is a matter of the manner in which a procurement call is set up and the tender documentation is formulated.
  - This means larger flexibility for a potential supplier: more creativity, innovativeness and competition.
  - **Example**: The Public Transportation Agency buys a decibel level instead of a sound barrier or quiet asphalt.

3.- Functional Procurement



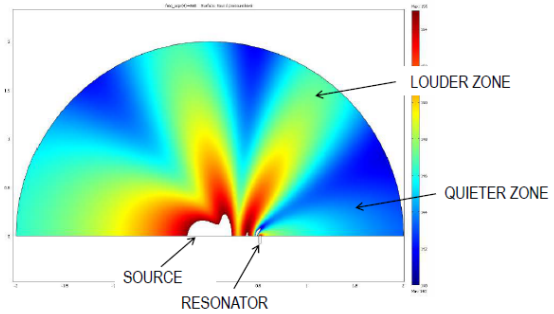
Source: Broekhuizen (2017)

3.- Functional Procurement

4SILENCE

DIFFRACTORS
COMPUTER SIMULATIONS

- ONE SINGLE RESONATOR

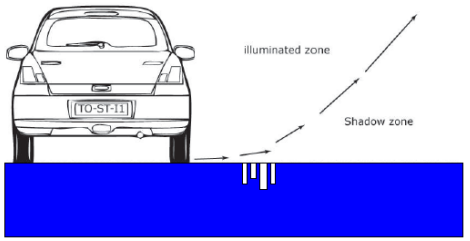


SUSTAINABLE NOISE REDUCTION

4SILENCE

DIFFRACTORS
DIFFRACTING ELEMENTS ALONGSIDE THE ROAD

- NOT REDUCING BUT BENDING SOUND WAVES IN AN UPWARD DIRECTION
  - DIFFRACTION = CHANGE THE DIRECTION OF THE NOISE
- DIFFRACTION BY MEANS OF RESONATING ELEMENTS ALONGSIDE THE ROAD



SUSTAINABLE NOISE REDUCTION

Source: de Vries (2017)

3.- Functional Procurement

- To achieve innovation through public procurement it is, **seemingly paradoxical**, more important to emphasize functional procurement than to pursue innovation procurement.
  - Functional specifications are needed for all kinds of innovation-related procurement.
  - **Functional procurement** is thus innovation-enhancing in the sense that it **opens up for innovations**, but it does not require innovations per se as it happens in other forms of public procurement for innovation, such as direct and catalytic public procurement (Edquist and Zabala-Iturriagagoitia, 2012).
  - The old product can always be bought.
  - This means that the risks are smaller.

3.- Functional Procurement

- Demands are crucial:
  - To require functional procurement can be a very powerful instrument to increase the proportion of innovations in public procurement.
  - It may seem like a self-evident thing to do. But it does, obviously, not happen spontaneously.
  - **Procuring organizations** must be **instructed** to perform procurement as functional procurement (i.e. training, competence building).
    - From need identification to the translation of needs into requirement in procurement call for tenders → challenging task.

Government Offices of Sweden

Innovationsfördernde Öffentliche Beschaffung

3.- Functional Procurement

- The EU procurement regulations:
  - The term ”functional requirement” is in the regulations: ”*A procuring agency may express the technical specifications as performance demands or functional demands.*”
  - Hence, the procurer can always choose between describing a product or a function. No changes of rules are needed.
  - EU Procurement Directives 2014: Recital 74

“…, technical specifications should be drafted in such a way as to **avoid** artificially **narrowing down competition** through requirements that favour a specific economic operator by mirroring key characteristics of the supplies, services or works habitually offered by the economic operator.

*Drawing up the **technical specifications in terms of functional and performance requirements generally allows that objective to be achieved in the best way possible.***

Functional and performance-related requirements are **also appropriate means to favor innovation** in public procurement and **should be used as widely as possible**.”

3.- Functional Procurement

- Significance of functional procurement:
  - Functional procurement can influence the **rate** ('number', 'speed' and 'importance') AS WELL AS the **direction** of innovation processes: it can **shape innovation** (i.e. create new **innovation trajectories**).
  - Functional procurement can be used to solve problems and satisfy needs related to the environment, climate, energy, urban development, health, transports, defence, etc.
    - Functional procurement has a large potential as a part **of mission-oriented** policies to mitigate **Grand Challenges**.
    - This is related to the objectives of innovation policies.
  - In Sweden functional procurement in the form of PPI also led to a major consolidation of the supplying firms (e.g. Ericsson, ASEA/ABB) = strong 'unintended' effects on competitiveness and growth!

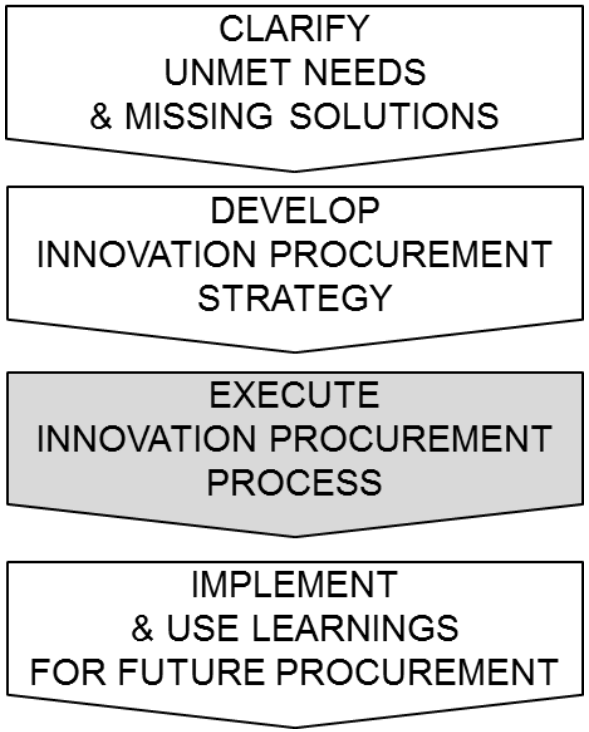
4.- Conclusions and discussion

- A **national strategy** to make public procurement innovation-enhancing endorsed at the highest possible political level is crucial.
- The **content** of such a strategy should include:
  - Which **kinds of procurement** to emphasize: Direct/catalytic innovation procurement, functional regular procurement, PCP.
  - What is **required** to implement the chosen kind of procurement: they are different, have different goals and are partly governed by different regulations.
- Since **functional specifications** are needed for all innovation-enhancing procurement, the ability to pursue them is important.
- The **establishment of an organization** to support innovation-enhancing functional procurement is key.

4.- Conclusions and discussion

Capacity building: no 'one fits it all'

Better services!
Wider economic, environmental, and social benefits!



- Capacities needed:
  - **Public entities**: need owner capacity, strategic capacity (internal & political commissioning), procurement procedures/ approaches capacity
  - **Suppliers**: capacity for understanding needs, how to engage, used procurement procedures/approaches
  - **Politicians**: capacity for understanding service quality and wider benefits
  - **Supporters & enablers**: focused expert capacity and/or interplay capacity
- Capacity building services provided:
  - From awareness to training to advice to brokerage (public & private providers)

4.- Conclusions and discussion

- To achieve innovations in public procurement, it is important that the functional specifications are not accompanied by other requirements that may restrict access to the process for small and innovative firms.
  - Examples are:
  - Requirements of references
  - Size of the company
  - Size of the tender
  - Restrictive property right conditions
  - Disproportionate financial and technical guarantees from tenderers
  - Requirements of previous deliveries in procurement deals (Sic!)

- Functional procurement properly pursued may lead to increased creativity, more innovation, increased competition, and better public services.

4.- Conclusions and discussion

- **Identified societal needs and problems** need to be recognised as a legitimate target for public procurement (as well as best value for money) that these require innovation.
  - This should be recognised in innovation-related procurements in the form of, for example, the **functional specifications**.

- Obstacles to innovation/functional procurement:
  - Weakening of public organizations
  - Identification of needs/problems
  - Specification of functions
  - Competence-building in procurers and procurement support
  - Risk/risk aversion
  - Lack of interactive learning and the role of procurement rules

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