

### What is innovation?



### >Oxford Dictionnary?

- 1. The action or process of **innovating**.
- 2. A **new** method, idea, product, etc.

### >Cambridge Dictionnary?

- 1. a new idea, method, design or product, etc.
- 2. the use of new ideas and methods
- 3. the <u>development</u> of new ... (<u>products</u>, <u>designs</u>, or <u>ideas</u>:

### What is innovation?



### > Wikipedia?

• Innovation can be simply defined as a "new idea, creative thoughts, new imaginations in form of device or method".[1] However, innovation is often also viewed as the application of better solutions that meet new requirements, unarticulated needs, or existing market needs.[2] Such innovation takes place through the provision of more-effective products, processes, services, technologies, or business models that are made available to markets, governments and society. The term "innovation" can be defined[by whom?] as something original and more effective and, as a consequence, new, that "breaks into" the market or society.[3] Innovation is related to, but not the same as, invention,[4] as innovation is more apt to involve the practical implementation of an invention (i.e. new/improved ability) to make a meaningful impact in the market or society,[5] and not all innovations require an invention. Innovation often[quantify] manifests itself via the engineering process, when the problem being solved is of a technical or scientific nature. The opposite of innovation is exnovation.

### Innovation in our world?



### INNOVATION IN ANIMAL HEALTH

#### 1910s (

I\*US veterinary licence issued for production of antihog-cholera serum

#### 1761

ff veterinary school founded in Lyon, France

#### • 1950s

It'veterinary antibiotics licensed in the US and Europe Development of rinderpest vaccine Brucelosis virtually eliminated in the US

### 1960s

Rabies vaccine widely available in Western world, leading to effective control of disease Discovery of thiabendazole, the t<sup>st</sup>

#### 2000s

Development of west nile virus vaccine for horses Development of avian flu vaccine in response to human and bird flu pandemic

### 2005

t<sup>a</sup> DNA vaccine authorised, pioneering a new technology now also used in human medicine

#### 2005-2010

1º authorised cance treatment for pets

















benzimidazole anthelmintic













### • 1880s

t<sup>st</sup> anthrax vaccine andrables vaccine developed

### 1930s

1º foot and mouth disease vaccine developed 1º brucelosis vaccine developed

### 1970s

Discovery of avermedins revolutionising parasitecontrol in veterinary and human medicine

### • 1990s

Intense development of modern veterinary therapeutics better pain management, better anaesthetics for surgery and 1<sup>st</sup> behavioural medicine for pets

### • 1980s

Development of new mechanisms for antiparasitics for livestock and pets as well as products for reproduction management

Development of modern foot and mouth disease vaccine

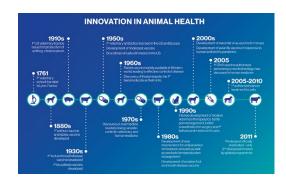
#### 2011

Rinderpest officially eradicated – only 2<sup>rd</sup> disease eliminated by global programmes

### Innovation in our world?



- There is not one innovation
  - "New new" or "development"?
  - Usually not a big bang...
    - First in class compound or best in class
    - Market size (MUMS, minor markets)
    - New species and / or formulation
    - New indication...
- Global Benchmarking Survey 2015 defines it as follows:
  - Innovation is generally recognised as the development of new molecules, new technologies, new formulations and routes of administration.
  - However innovation may also be seen as a new product for a company using an existing active ingredient.



## The "right" regulatory environment for innovation?



- > In line with mission of agencies,
- > while safeguarding the health of animals, human and the environment, via appropriate requirements on quality, safety and efficacy,
- > stimulating the approval of new, better, more appropriate solutions for the health and welfare needs of animals everywhere...



## The "right" regulatory environment for innovation?

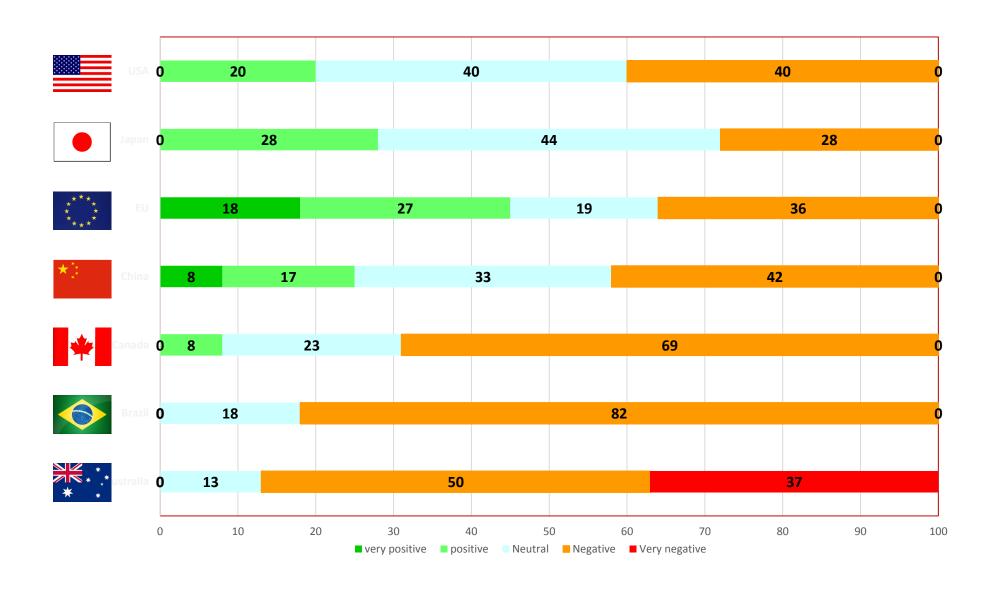


- >Clear but flexible requirements
  - Clarity on current product requirements
  - Flexible enough...
    - To cope with new technology
    - To perform an scientific benefit risk assessment
    - To recognize work done by (other) competent authorities



## Perception of impact of the regulatory environment on innovation (GBS 2015)





## The "right" regulatory environment for innovation?

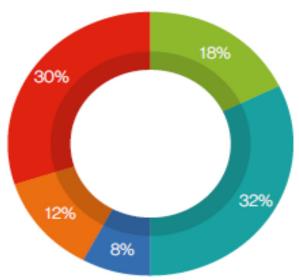


- >The biggest concerns for industry are...
  - ✓ increasing cost & time for development of a new product
    - Impact protection IP and technical data
  - ✓ creation of significant uncertainty or unpredictability
    - Science based decision making
    - Duration development requires stability

## Stimulating innovation: what companies wish for.... (GBS 2015)



### Regulatory changes companies want (GBS survey 2015)



- 30% agency efficiency, ↑ staffing (in some places)
- 32% risk-based policies, innovation fast-track
- 18% specific processes streamlined
- 12% internationalization of data requirements
- 8% improved consultation agency industry

### Some more wishes...

- expanding, harmonized e-submissions
- more inter-agency working + mutual recognition
- acceptance of high-quality foreign data from wellregulated countries
- regional collaboration on simultaneous assessments
- mutual recognition of GMP
- fast-track, conditional licenses

# Stimulation of innovation : a closer look at some topics



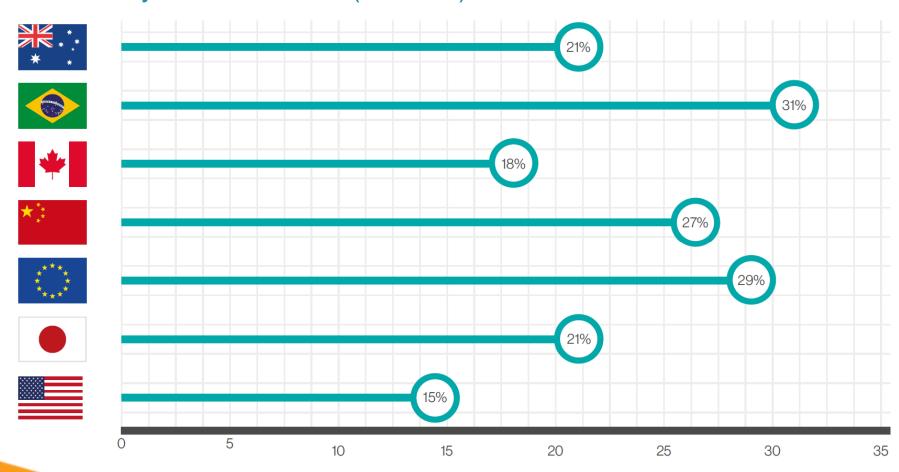
- > Appropriate spending on maintenance:
  - defensive R&D and administrative burden
- > Sufficient consultation possibilities
- > Sufficient protection of technical documentation
- > Convergence of regulatory guidelines



## Stimulating innovation by appropriate spending: defensive R&D



> Mandatory Defensive R&D (MDR&D) as a % of total R&D



# Stimulating innovation by offering sufficient consultation options...

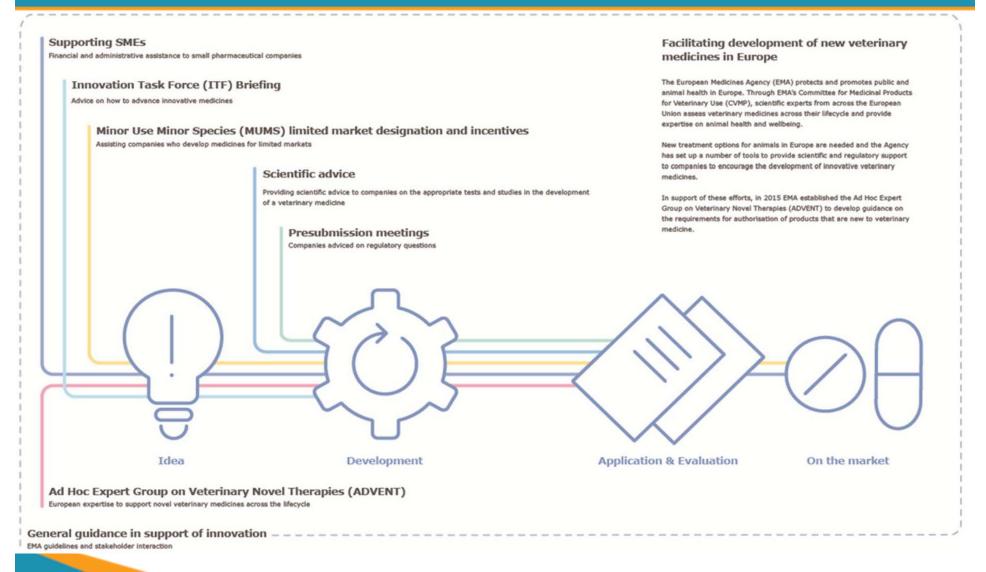


- > Aim: better quality dossiers
- > Industry sometimes doesn't know...
  - New technology
  - New company
  - New geography
- > More on how than on what...
  - No guarantee...
- > Consultation throughout the development of a product
  - Or even earlier



## EMA slide on facilitating development of new veterinary products





# Stimulating innovation by sufficient protection of technical documentation



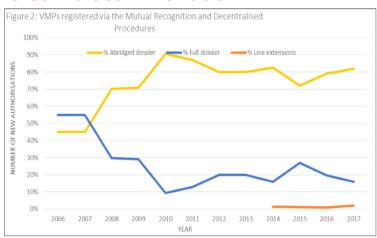
- > Needed for fair return on investment for innovation.
- > Maintaining confidentiality of data as well as awarding appropriate protection of data where significant new data are generated.
- > Big differences between geographies:
  - from zero to 10-18 years
  - Where must innovation go first?
  - But also: where will innovation go?



## Stimulating innovation by sufficient protection of technical documentation



- Need balance between appropriate protection and access for "generic" products
- > What is appropriate time?
  - "ROI", so smaller market equals more time
  - Different for bigger (new product) vs. smaller investment (new species/claim,...)
    - Also new claims to stimulate on label use
  - Even in big EU market: prolongation to save/stimulate innovation



# Stimulating innovation by improved regulatory convergence



- > Alignment with international standards critical
- > Allows for recognition of assessments
  - Done by other competent authorities
  - Sharing the same guidelines
  - Saves resources and facilitates submissions
    - Example: Canada-Australia-New Zealand
    - Example: Mutual Recognition Procedures:
      - EU
      - Africa



## In summary: some elements of a good regulatory environment from an innovation perspective?



### >A regulatory environment that is:

- Protective for animal health, human health and environment (one health)
- Stimulating innovation, big and small, by appropriate IP and data protection and appropriate requirements reducing administrative burden and defensive R&D
- Stimulating innovation by appropriate early consultation options
- Stimulating innovation by sharing the work and recognizing each other's work (assessment)

