



# Enhancing data timeliness through Digitalization and achieving access to data

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- IEA produced a '**Digitalization and Energy**' report last year
- Digitalization is everywhere; digital and energy worlds are intersecting
- All energy demand and supply sectors are feeling the effects
- Fundamental transformation of electricity – “smart energy systems”
- Emerging risks need to be managed, including building digital resilience
- Report suggested 10 no-regrets policy recommendations

1. Build digital expertise within their staff.
2. Ensure appropriate access to timely, robust, and verifiable data.
3. Build flexibility into policies to accommodate new technologies and developments.
4. Experiment, including through “learning by doing” pilot projects.
5. Participate in broader inter-agency discussions on digitalization.
6. Focus on the broader, overall system benefits.
7. Monitor the energy impacts of digitalization on overall energy demand.
8. Incorporate digital resilience by design into research, development and product manufacturing.
9. Provide a level playing field to allow a variety of companies to compete and serve consumers better.
10. Learn from others, including both positive case studies as well as more cautionary tales.

# Maximizing new opportunities for new statistics and data

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- But what has this all got to do with Energy Statistics?
- A potential game changer for availability of energy data
- Already increasing use of GIS
- Data matching (e.g. UK's NEED matching data to understand energy efficiency)
- Significant potential with the appropriate regulatory/legal framework

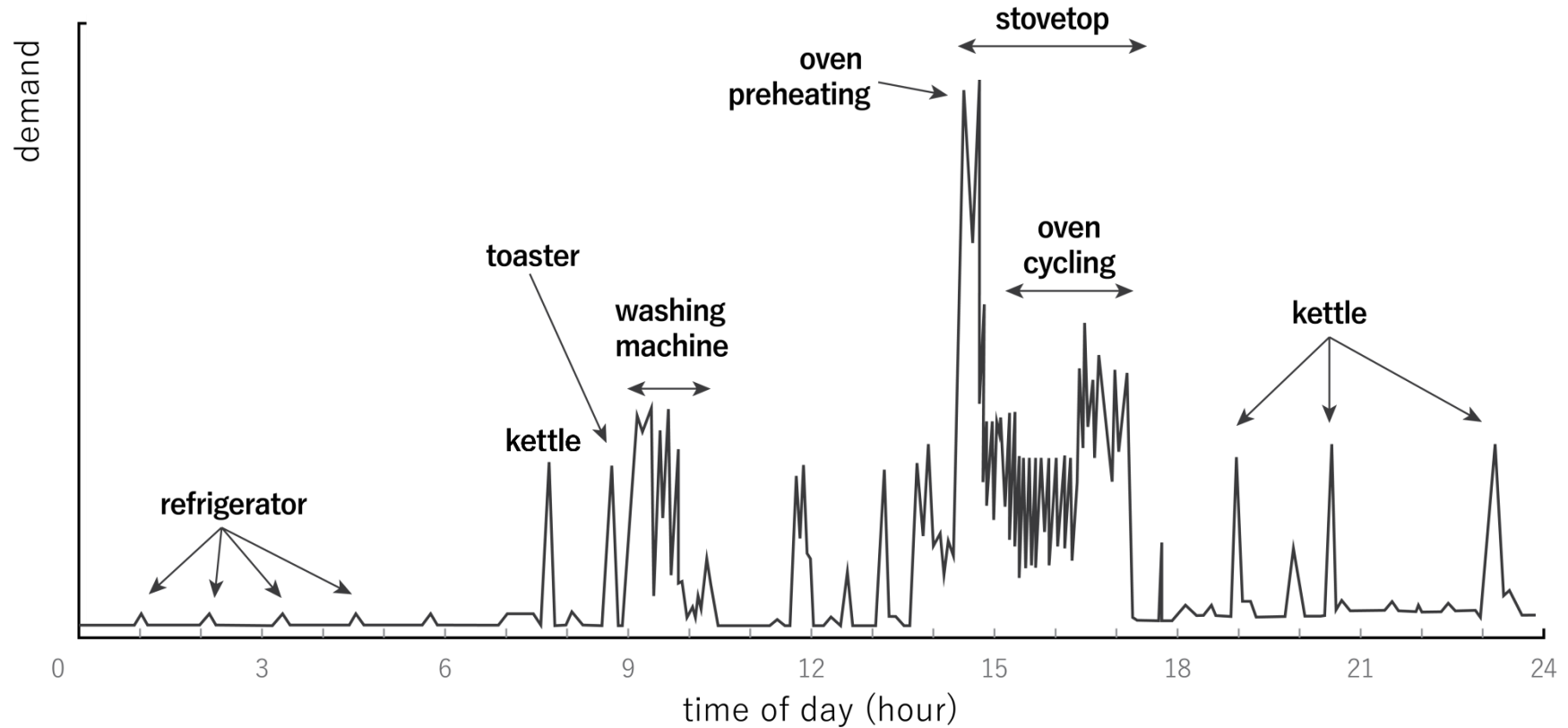
# A 'digital twin' for each power station?





**Nest 3rd Gen. Screen**

# Managing privacy concerns



Source: Newborough and Augood (1999), "Demand-side management opportunities for the UK domestic sector" (reproduced courtesy of the Institution of Engineering and Technology).

# Blockchain in energy – what is it and what can it offer?

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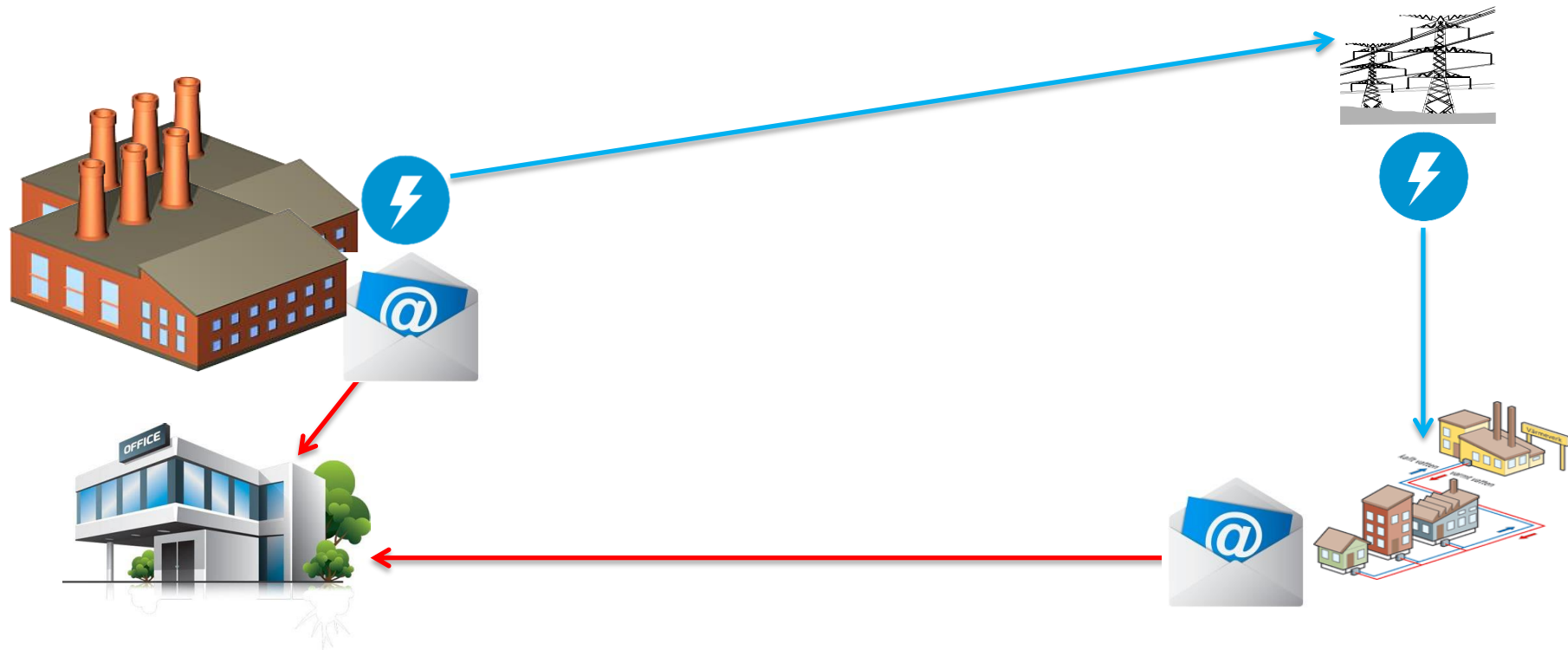
- Neighbours sell solar energy to each other via blockchain technology (US)
- Pilot to authenticate and bill customers at EV charging stations (Germany)
- Utility companies trialing use of blockchain energy trading (Austria)
  
- All provide a rich source of data, perhaps unimaginable when most of us started to be involved in energy statistics!

- 1. Distributed Database
- 2. Peer-to-Peer Transmission
- 3. Transparency with “Pseudonymity”
- 4. Irreversibility of Records
- 5. Computational Logic

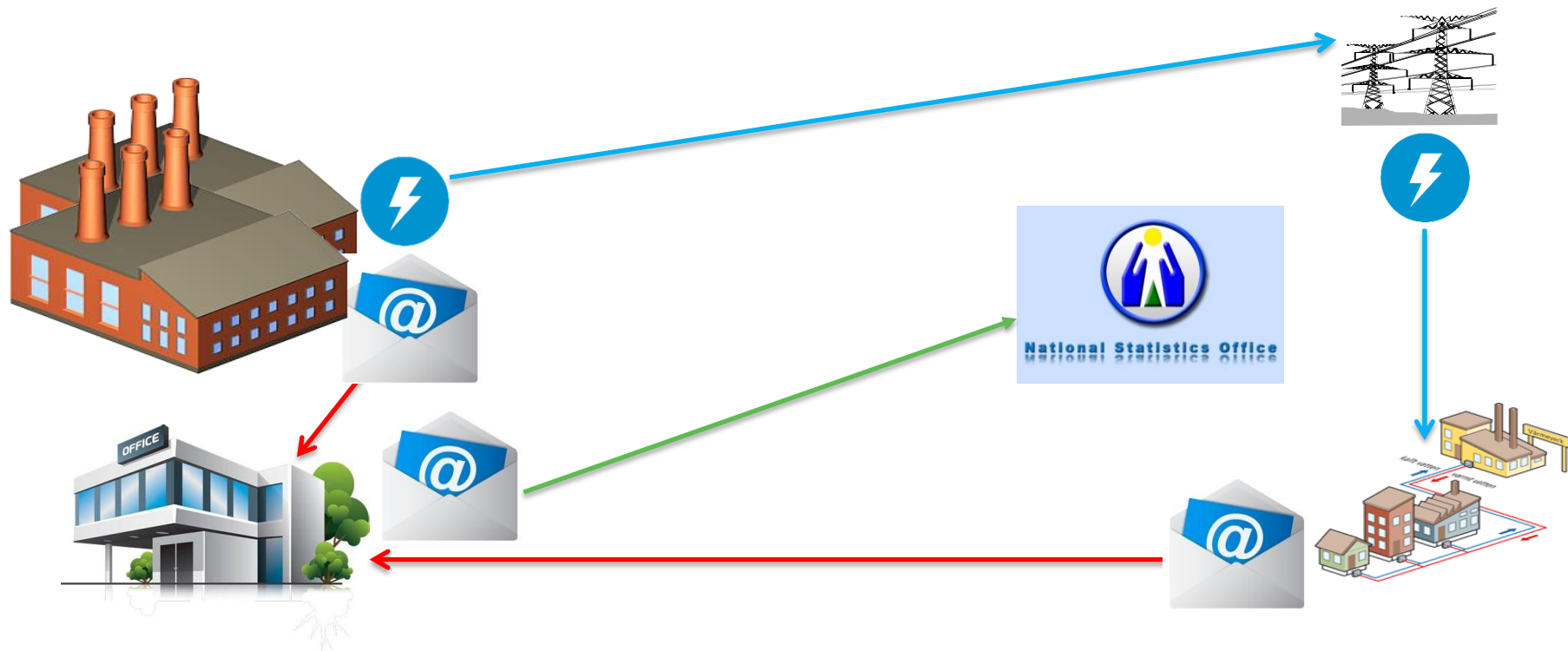
# How could digital change energy statistics?

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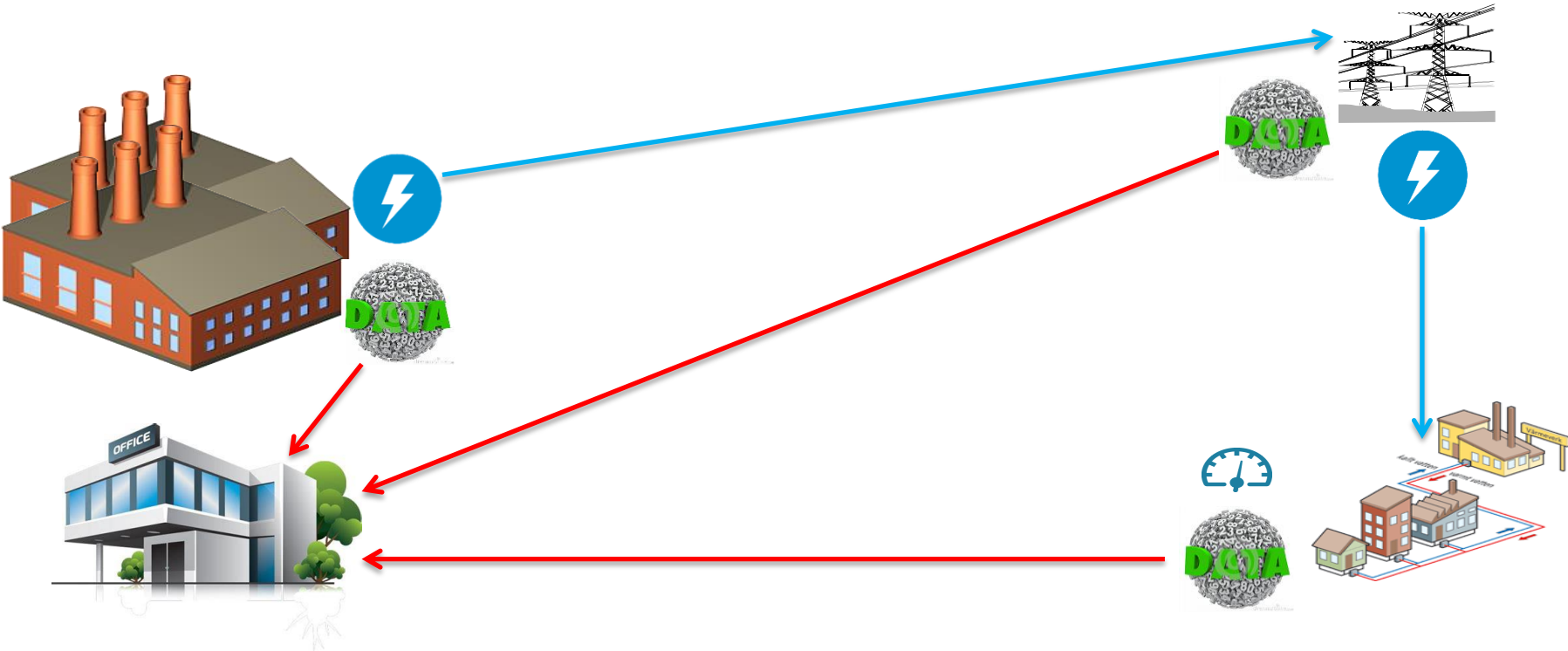
# Electricity: power flows in a non-digitalized system



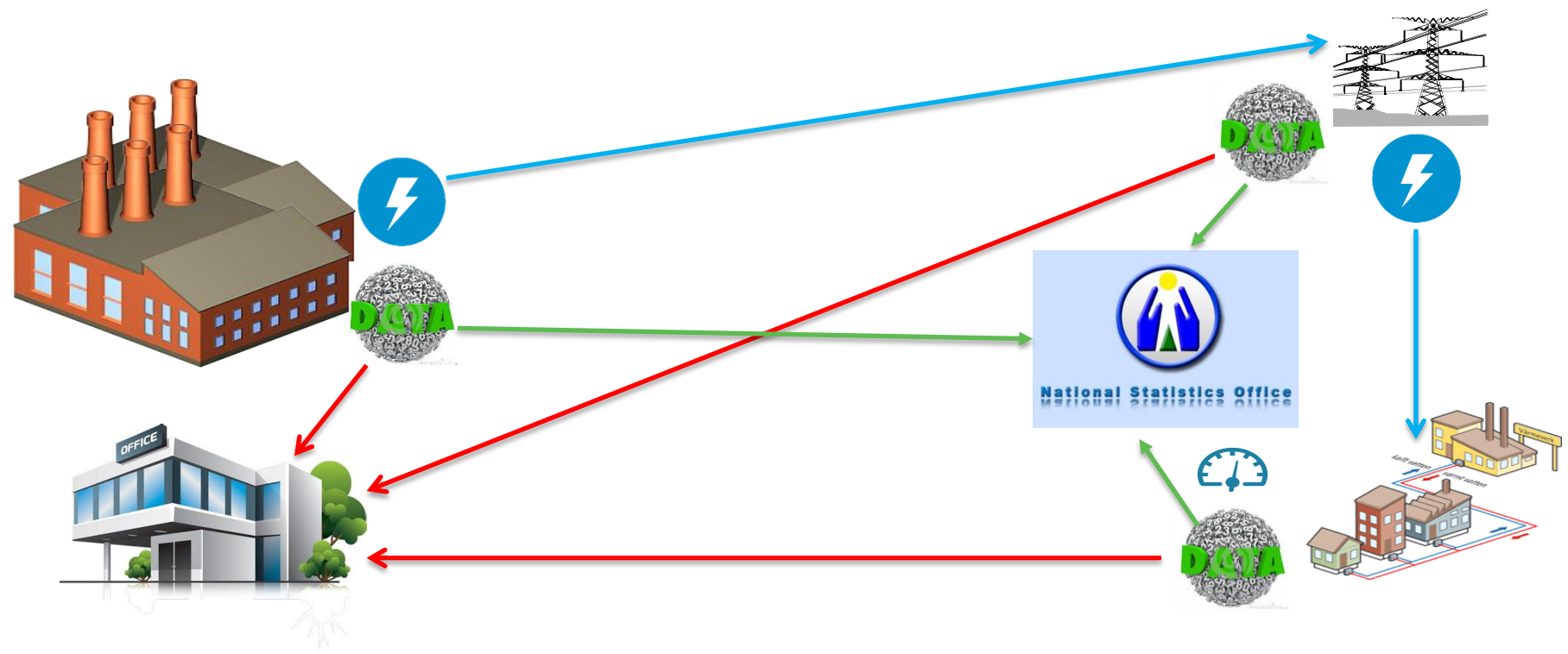
# Electricity statistics in a non-digitalized system



# Electricity: power flows in a digitalized system



# Electricity statistics: in a digitalized system?



- 1st phase?
  - Business have more timely data (e.g. digital twin of power stations, direct monitoring of networks)
  - Official data still dependent on collection from business (monthly) and consumers (annual with large lags)
- 2nd phase?
  - Automatic flows of data from digital systems in homes and businesses to statistical offices?
- Could it happen?
  - Official stats do not need time critical data, aggregation over time periods (e.g. 1 hour) or time lags (weeks) still a real benefit
  - Detail data could have a longer lag of months
  - Need legislation to maximize the benefit of using data whilst ensuring data protection
- Are countries preparing for these potential new sources of data – and the statistics / policy benefits they will undoubtedly bring?



- An opportunity for – but a challenge – to statistics.
- We need to encourage countries to prepare for these potential new sources of data – and the statistics / policy benefits they will undoubtedly bring!
- Can we work to help influence the regulatory framework to achieve data access for statistics?
- Any updates on relevant activity welcomed.



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