New Innovations and Methods of Working

Drone use of surveying and inspection

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Who We Are

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Drone Use of Surveying and Inspection

- Aims and Objectives
  - Why drone technology?
  - Why surveying and inspection?
- Use of Drone Technology for Building Inspection
  - Overview
  - Benefits
- Future Focus
  - Development
  - Limitations
  - Working in partnership

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Why drone technology?

- Global analysis for drone use – huge expected market share
- Global:
  - Goldman Sachs - $100bn USD by 2020
  - PwC – $127bn USD by 2030
- UK:
  - PwC – drone related technology increase of £42bn in GDP
  - 628000 people working in drone economy by 2030

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Why surveying and inspection?

European Drone Industry – Drone Industry Barometer 2018

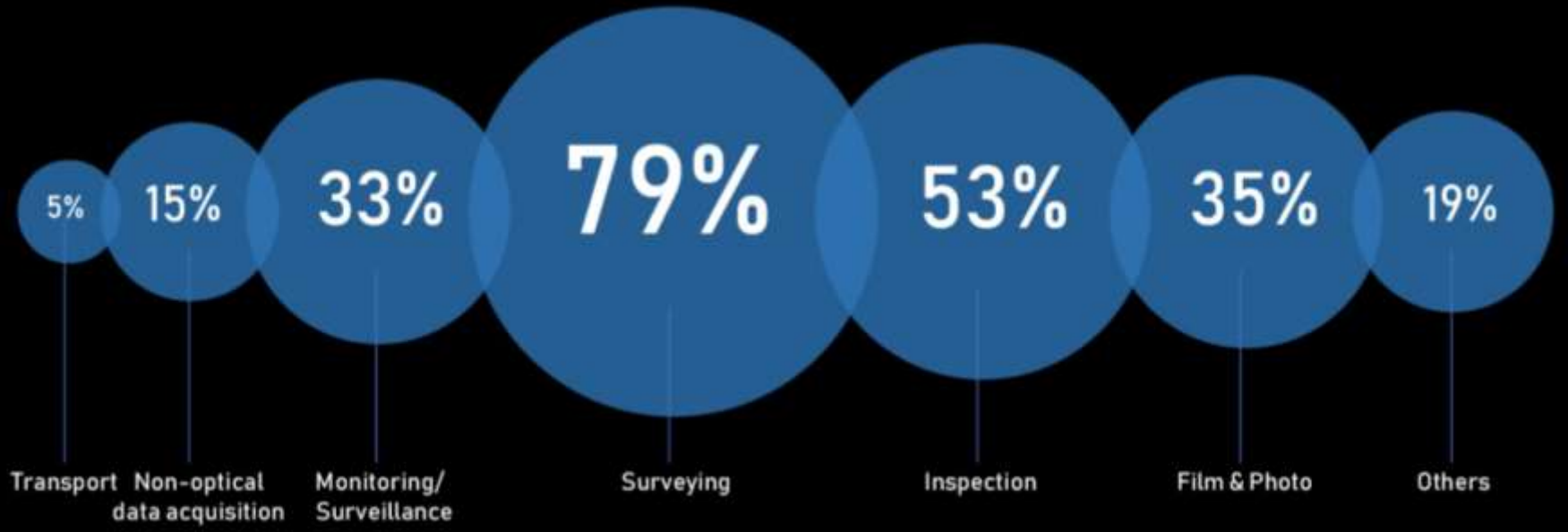

Fig. 1: Use of drones by commercial users

Types of drone use by businesses in Europe in 2018

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Why surveying and inspection?

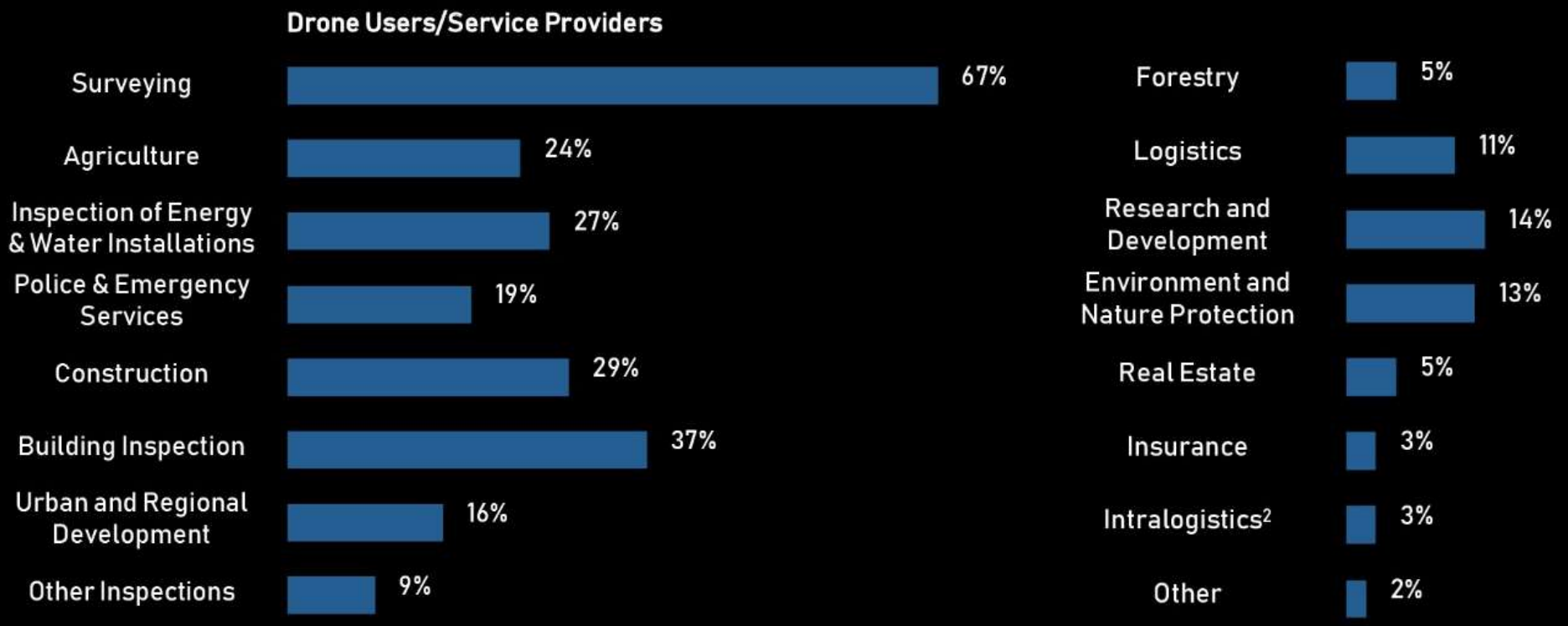

Fig. 2: Areas of application with the greatest growth in the next 12 month

Projected growth for drone use 2018-2019

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Overview of Drone Building Inspection

- Identify (client) – area to be surveyed
- Collect (drone operator) – data from site
- Interpret (building surveyor) – survey data from collection phase

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Benefits of Drone Building Inspection

- Safer
- Inexpensive
- Less time-consuming
- More data that is accurate and can be shared
- Flexibility
- Minimal down time

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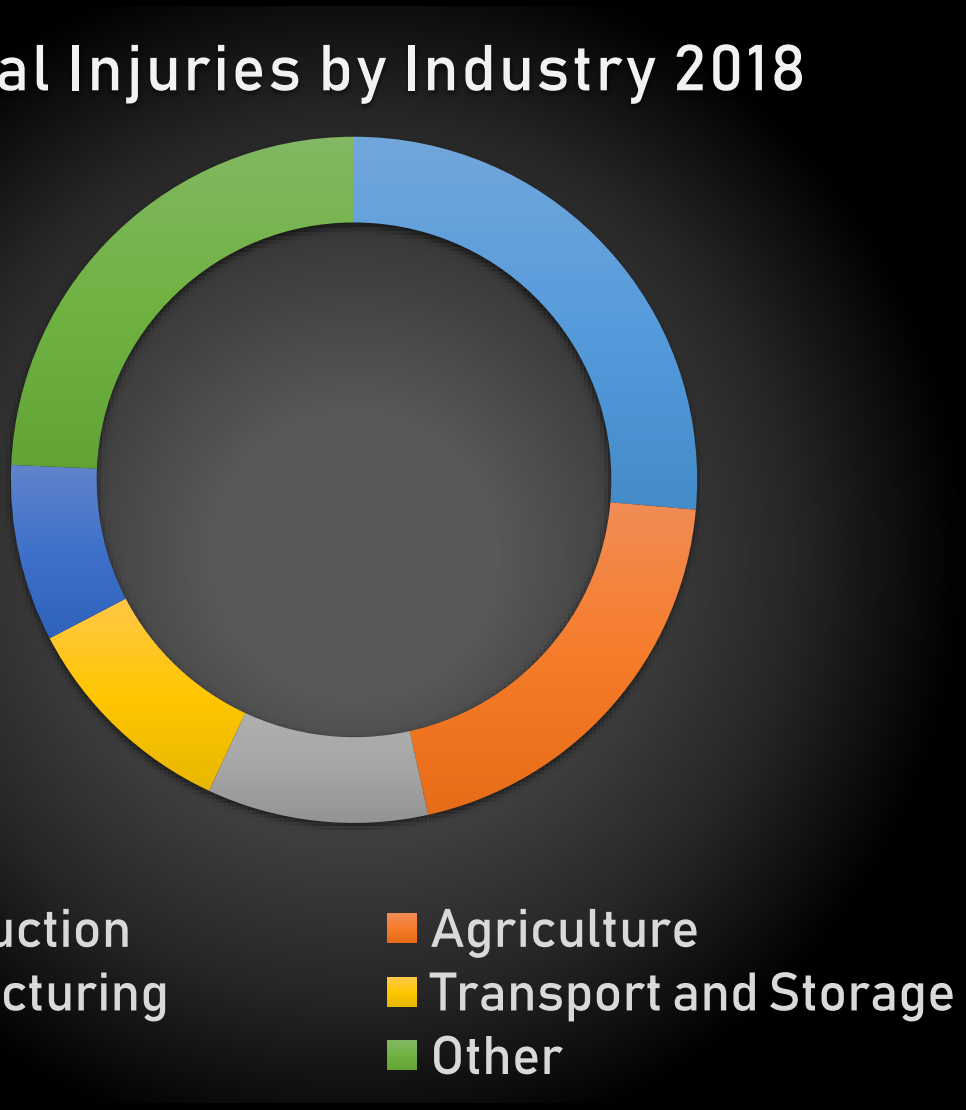
Safer – Minimises Health and Safety Risks



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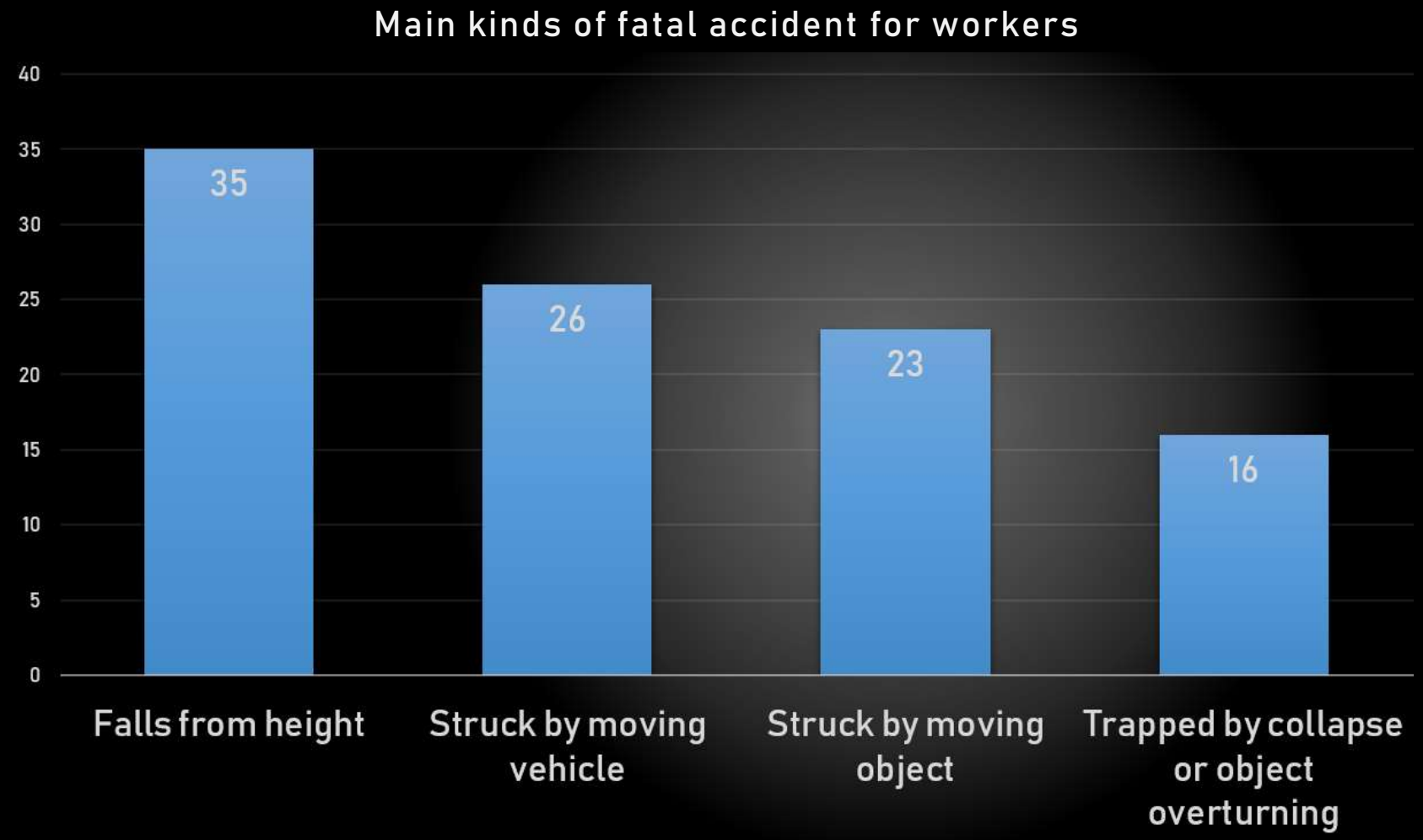
Safer – Health and Safety Considerations



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Inexpensive – Drone vs Traditional

- Traditional methods
  - Scaffolding
  - Ladders
  - Rope access inspection
  - Access platform
- Drone survey
  - Space to deploy drone – can be from a distance if needed.
  - Line of sight to site

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Less Time Consuming

- Data can be collected within minutes rather than potentially weeks, allowing many more jobs to be completed in a fraction of the time.
- More complicated surveys can be done in minutes compared to days/weeks e.g. church steeple inspection

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More Data

- 4K video
- High Resolution Images
- Thermal Imaging
- Live Data

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More Accurate and Sharable Data

- Multiple angles of data collection and all data recorded on the drone and remotely for security.
- Data collected can be shared and assessed remotely and collaboratively, with individuals across the globe being able to access the data easily.
- Cloud based collaboration.

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Flexibility

- Multiple camera options can be attached to the drone allowing data capture from various sources at once.
- Only limitation for drone flight is extreme weather which would hamper traditional techniques similarly.
- Requires a short weather window.

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Minimal Down Time

- As drones become more popular, more support for maintenance/repairs becomes available.
- Battery power allows almost continual use.

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Future Focus

- Improve the data to make it more client friendly
- Better control of images in flight
- Technology exists for drone + 3D laser scanning potential
- Develop new partnerships – any existing challenges? We are interested in working with you to develop a solution

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- http://www.hse.gov.uk/statistics/pdf/fatalinjuries.pdf
- https://djm-aerial.com/drone-survey-vs-traditional-survey/
- https://www.uasvision.com/2018/01/17/10-benefits-of-drone-based-asset-inspections/
- http://inspectifly.com/advantages-drone-aerial-inspections-traditional-methods/
- https://www.droneii.com/wp-content/uploads/2018/06/The-European-Drone-Industry-v1.1.pdf

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