

OntoTrans benefits for Industry

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We are analysing benefits!

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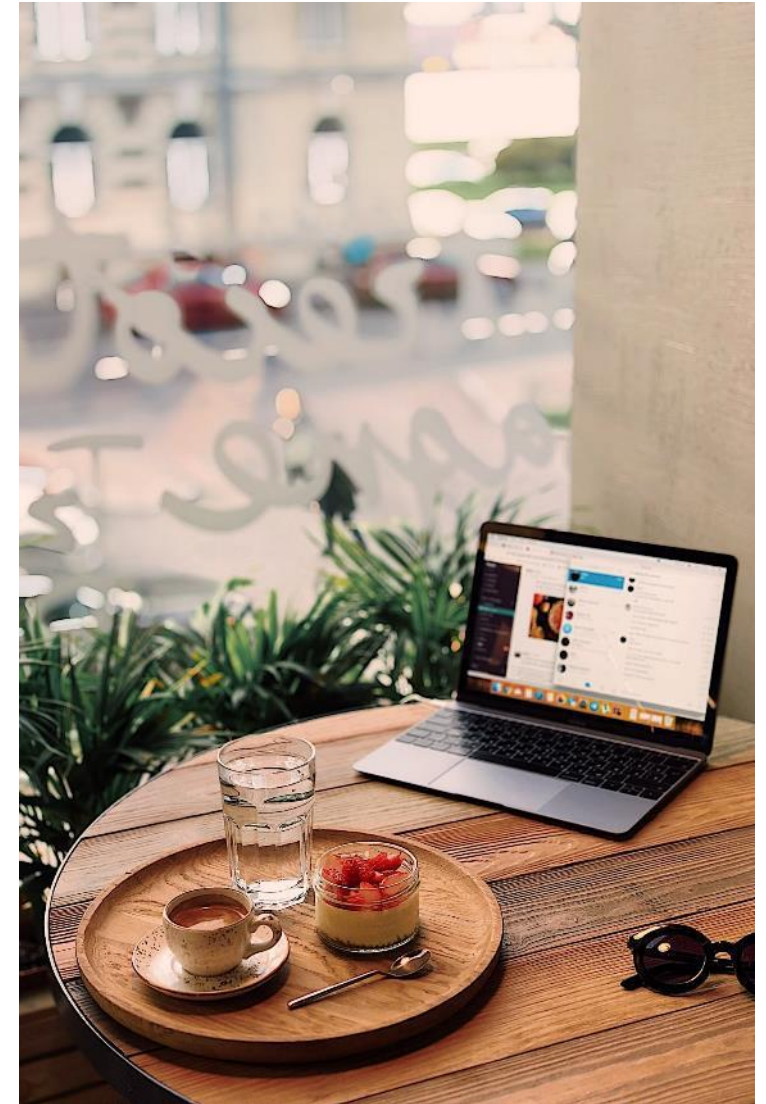
Since 2011, Goldbeck Consulting Ltd bridges existing gaps in the materials modelling ecosystem, connecting communities, supporting the validation and technology transfer of academic developments to industry, translating industrial needs into impactful materials modelling projects and researching the pathways and barriers to economic impact.

Let's talk benefits ...

The Idea of bringing a “new thing” to your company means you will be doing things differently

... maybe you stop doing things (and you've got time for other things)

... maybe you start doing new things



What does “new thing” mean?

- **A new tangible product/tool**

OntoTrans = The new thing!



The Enablers ≠ Benefits



- Enabler (noun) - a person or thing that makes something possible
- Benefit (noun) - an advantage or profit gained from something

Never call your new thing a “benefit” – it is an enabler

For each enabler then work out its advantage or profit – this is the benefit

A “new thing” comes with changes ...

- **People:** a new job role, upskilling, new formation of teams, etc.
- **Tools:** new software, new database, new hardware, new product, etc.
- **Process:** new product/project management style, digitalisation, Industry 5.0, etc.
- **Data:** from analogue to digital, metadata, semantics, ontologies, new concepts – data commons, etc.

There will be change, which ...

- ... comprises **advantages** for you
- ... makes you more **contemporary**
- ... caters for **new job specs**
- ... brings you closer to **Industry 5.0**

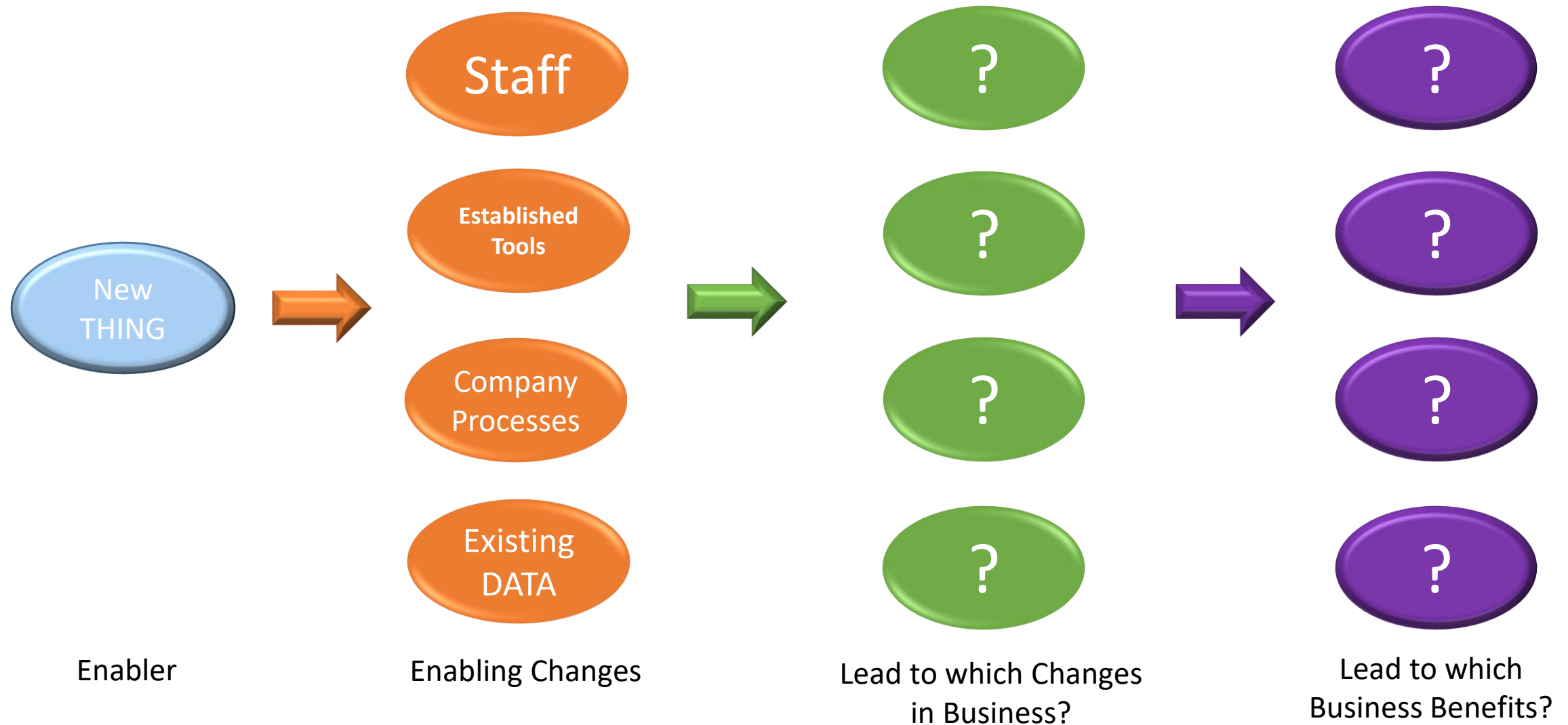


... but you will need to let it happen!
It will **cost you** time, money, people,
resources.

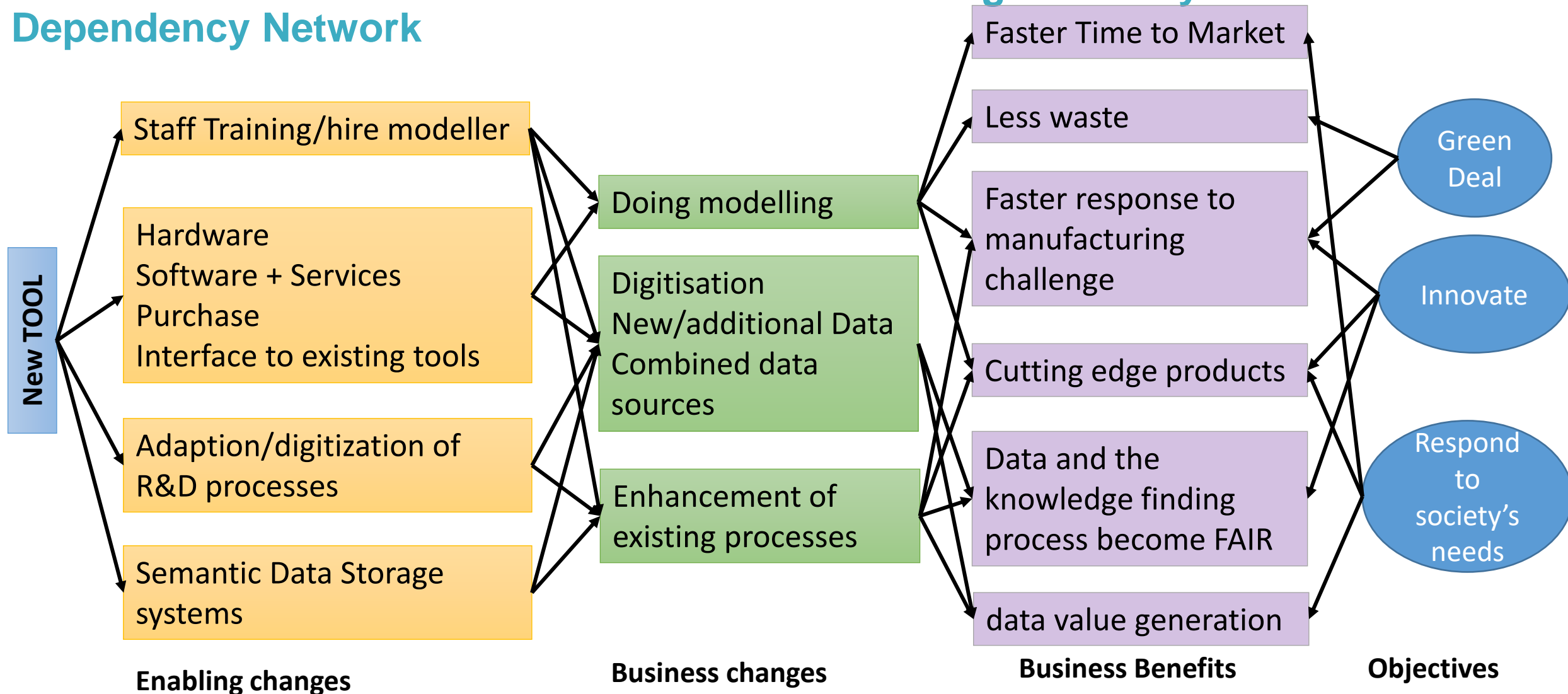
“Doing the right thing is more important than doing the thing right” and “If you want something new, you have to stop doing something old.”

Peter Ferdinand Drucker (1909-2005), Austrian management consultant, educator, and author.

A benefits dependency network, adapted from Ward & Daniel, 2006



Business Benefits are the result of combined changes! Meet your Benefits Dependency Network



Meet our Colleagues from Industry



Lucy Bull
Project Manager
Composites Evolution
UK



Diego Diaz Fidalgo
Global R&D Expert -
Artificial Intelligence
Arcelor Mittal
Spain



Oreste Todini
Research Fellow at
Procter & Gamble
Brussels Innovation
Center (BIC)
Belgium

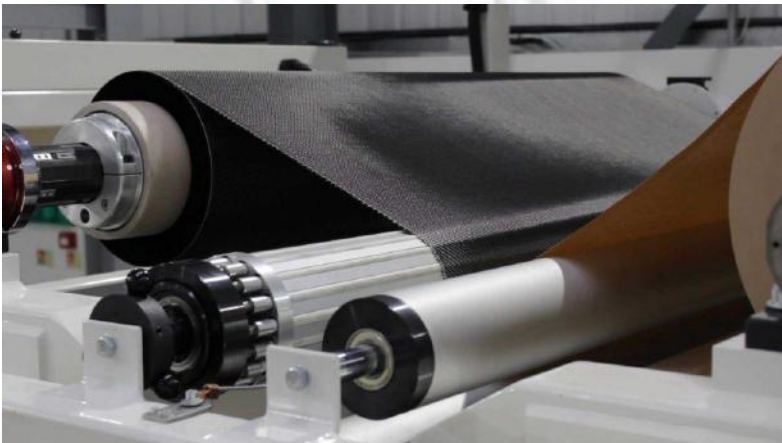
OntoTrans benefits for Industry: Composites Evolution

Lucy Bull, Brendon Weager
Composites Evolution

Vinicius Beber, Welch Cavalcanti, Michael Hoffmann,
Michael Noeske, Peter Schiffels
Fraunhofer IFAM



Company Overview

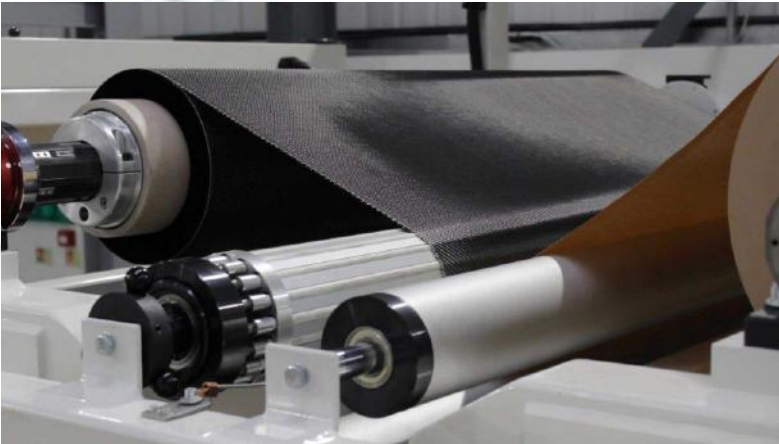


Developer, manufacturer and supplier of composite prepregs established 2009. Based in Chesterfield, UK

- State-of-the-art manufacturing facilities
- In-house prepreg development and testing
- ISO 9001:2015 certified
- Bespoke resin formulations according to customer requirements
- Wide range of reinforcements (carbon, glass, aramid, flax, basalt, etc.)
- Wide range of reinforcement weights: 50 - 1,000 g/m²
- Pilot-scale facilities for short runs
- Extensive suite of polymer and composite testing/analysis facilities
- Technical support to application development



Composite prepregs



Prepregging with woven carbon fibre



Laying up prepreg in a mould



Race car spoiler made from prepreg

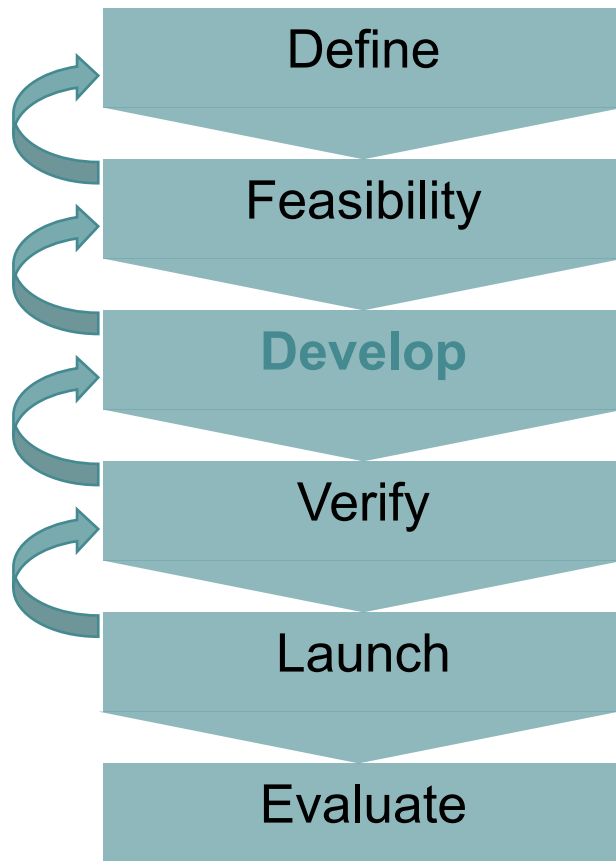
- Fibres (e.g. glass fibre, carbon fibre) pre-impregnated with resin (e.g. epoxy).
- Flexible, tacky 'intermediate' material (partly-cured, 'B-staged').
- Supplied on rolls with release films. Stored in freezer to prevent curing.
- Multiple layers cut, placed in mould and cured in press, autoclave or oven.
- Lightweight, high performance components in aerospace, motorsport etc.

Innovation

- **Challenge solving**
e.g. physical/ chemical/ mechanical properties
- **Process improvement**
e.g. Temperatures, speeds, pressures, improving quality, increasing productivity,
- **New products**
e.g. New reinforcement materials, re-formulated resins, additives, bio-based or recyclable materials
- **To improve efficiency**
e.g. increased line speed, heavier fabric weights, improved energy efficiency, waste reduction,
- **To implement change quickly (make something new faster) – being able to respond to the customer need and reduce the time to market**



Traditional NPI approach



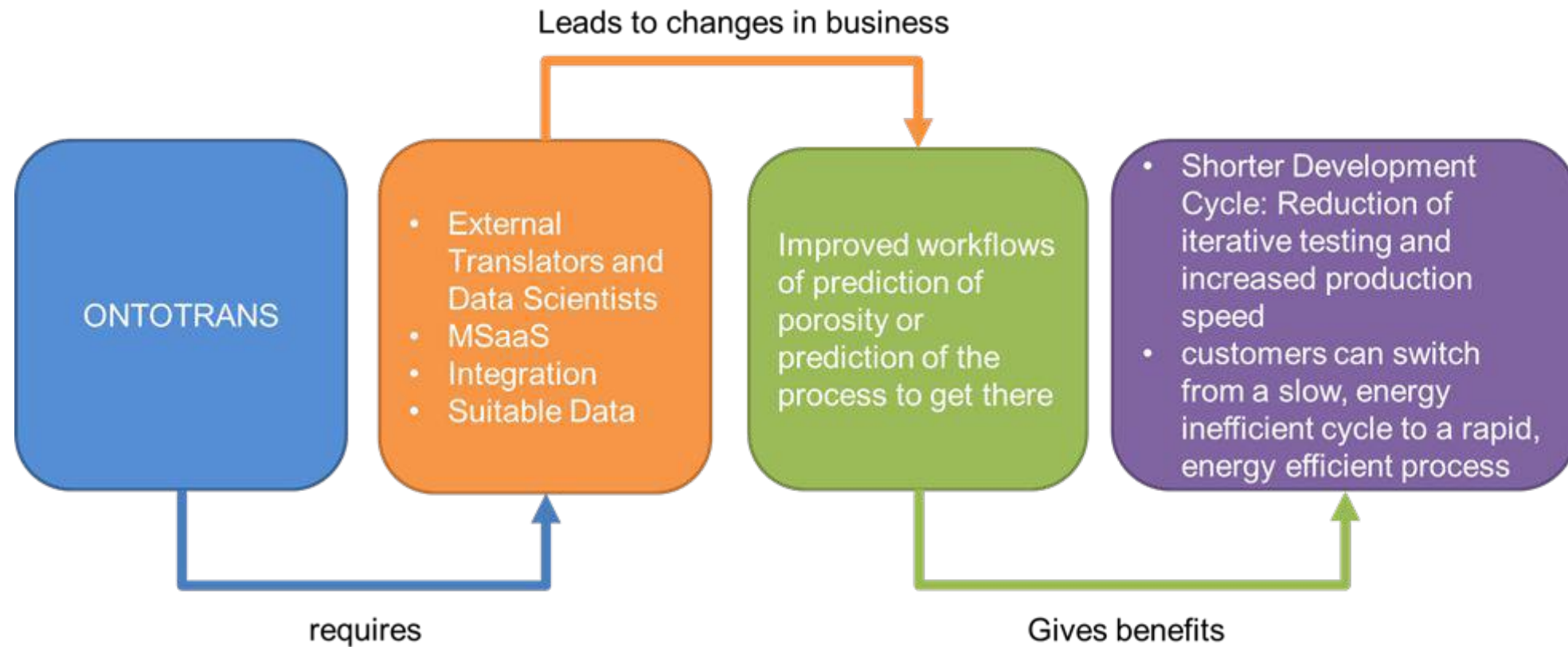
Develop

- Resin formulations and chemistry development
- Mixing trials
- Manufacturing prepregs
- Testing
- Manufacturing parts
- Testing

Costly, labour intensive and slow even with good procedures in place



OntoTrans approach



What we expect from OntoTrans

KPIs communicated to IFAM (an external OntoTrans Translator):

- Improve understanding and control of process
- Improve quality of end products
- Reduce development time and costs
 - i.e. Data/ model-based development stage or at least the rapid identification of key input parameters requiring further physical investigation
- Create model-based approach for future product developments and individual process optimisation for product users

Other Expectations

- User friendly interface
 - SME without in house modelling expertise
 - Needs to be accessible to development engineers/ technicians
- Rapid outputs/ solutions
- The ability to be more responsive and adaptable to our customer requirements
- Foster objective communication involving data-based feedback of user experience

*Thank
you!*



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