

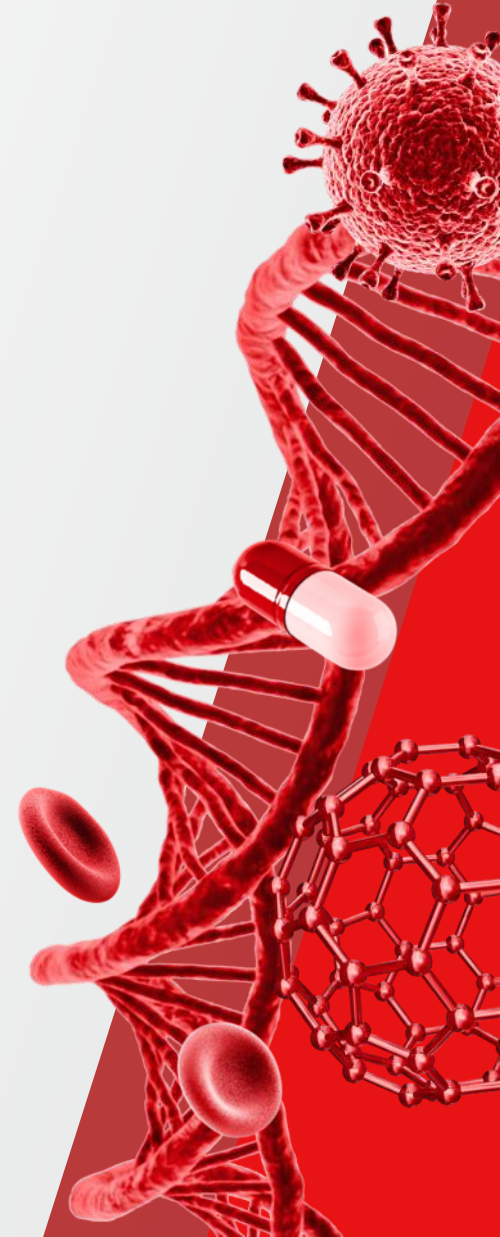
Allotrope Connect:  
**Navigating data challenges and the pace of change**

Ryan Snyder

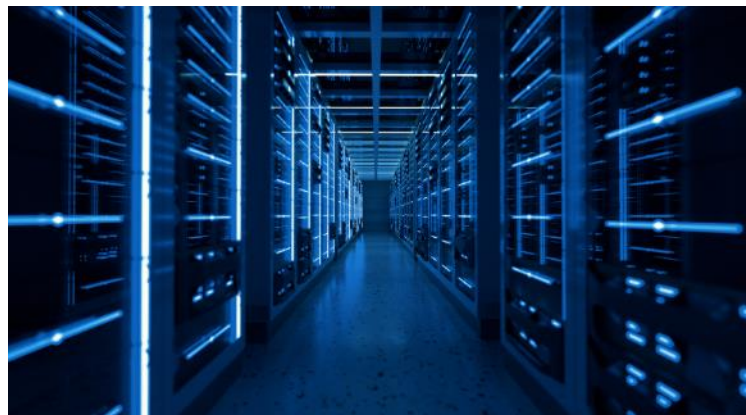
Senior Vice President & Chief Information Officer, Thermo Fisher Scientific

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 The world leader in serving science



# Thermo Fisher Scientific shares our customers' pain points



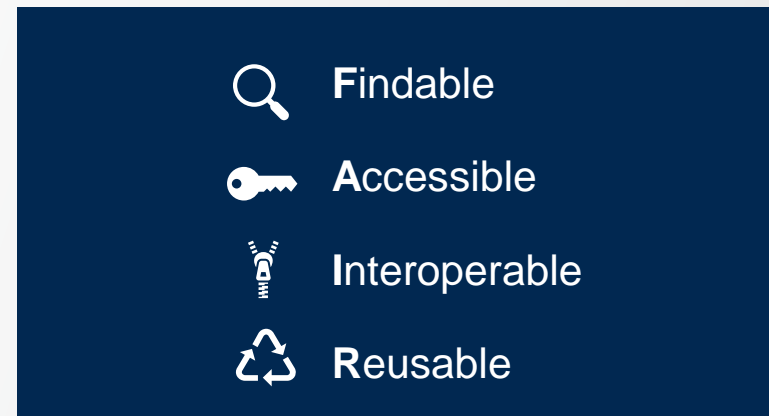
## Large amount of data

Our instruments and techniques are generating an enormous amount of data, frequently overwhelming users



## Siloed data and instrumentation

Data is siloed by instrument, vendor, modality, technique—making one system difficult to access by another



## Lack of 'FAIR' data

Lack of data interoperability prevents harmonized data platforms and a cross-lab solution design

# With science moving faster, data volume is growing and increasingly complex to manage

Average published scientific articles<sup>1</sup> by year



If we consider all data generated for these articles **and all that was discarded....**

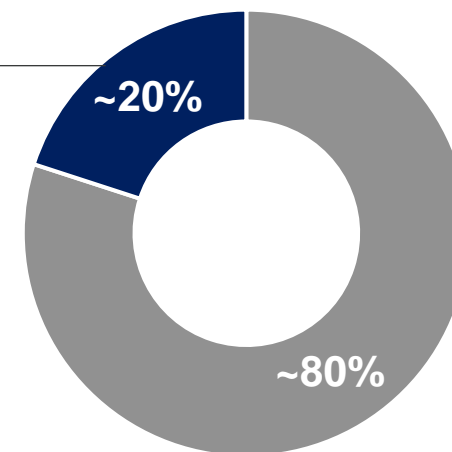
- How much is useful today?
- Tomorrow?
- What data are we not using?



"Science gathers knowledge faster than society gathers wisdom." – Isaac Asimov

Average Data Scientist time allocation<sup>2</sup>

Time available for science and analysis



Time spent finding, cleaning and organizing data

The dramatic growth and impact of AI has underscored the importance of data

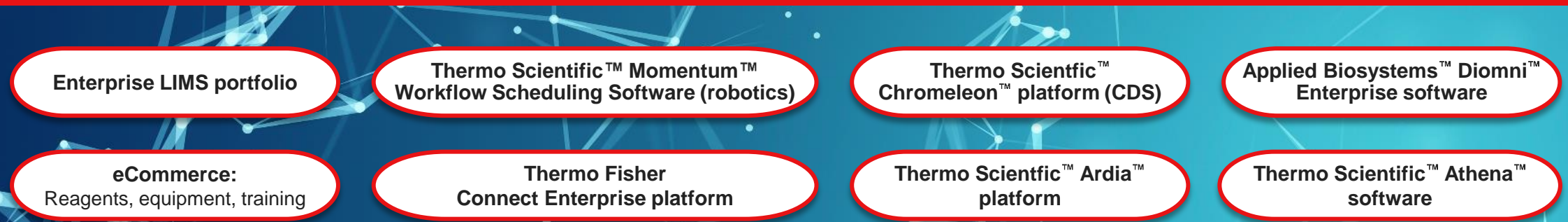
1. <https://ai.sony/blog/Behind-the-Research-How-Sony-AI-Researchers-are-Pioneering-AI-Models-for-Scientific-Discovery/#:~:text=The%20pace%20of%20scientific%20research,rise%20to%20over%202.5%20million.>  
 2. <https://www.pragmaticinstitute.com/resources/articles/data/overcoming-the-80-20-rule-in-data-science/>

# Connected platforms can help mitigate our lab customers' data challenges

Customers want simpler, integrated experiences so they can get answers and scale faster. They also want to bridge tech expertise gap and create productivity with options like AI/ML. **Thermo Fisher is enabling our customers through:**

Regulatory and cybersecurity	Data and AI	Enabling speed and scale through integration	Productivity
<ul style="list-style-type: none"><li>Addressing regulatory needs for data privacy, cybersecurity and validation/compliance</li><li>Continually improving our products to meet the changing cybersecurity landscape</li></ul>	<ul style="list-style-type: none"><li>Empowering scientists to focus on the science and make decisions based on real-time data and AI</li><li>Increasing interoperability, larger data and accessibility of data</li></ul>	<ul style="list-style-type: none"><li>Faster insights are possible through connected data and simplified toolkits</li><li>Integrating scientific domains through our Thermo Fisher™ Connect platforms</li><li>Leading innovative products and services with new integrations</li></ul>	<ul style="list-style-type: none"><li>Automating scientific processes to drive repeatable, reliable results</li><li>Simplifying lab operations: reordering of consumables, scheduling instrument service and executing work</li></ul>

Creating connected platforms simplifies the process for users to get to the data that matters:



# Our data approach creates scale and opportunity

IT and business shared goals:

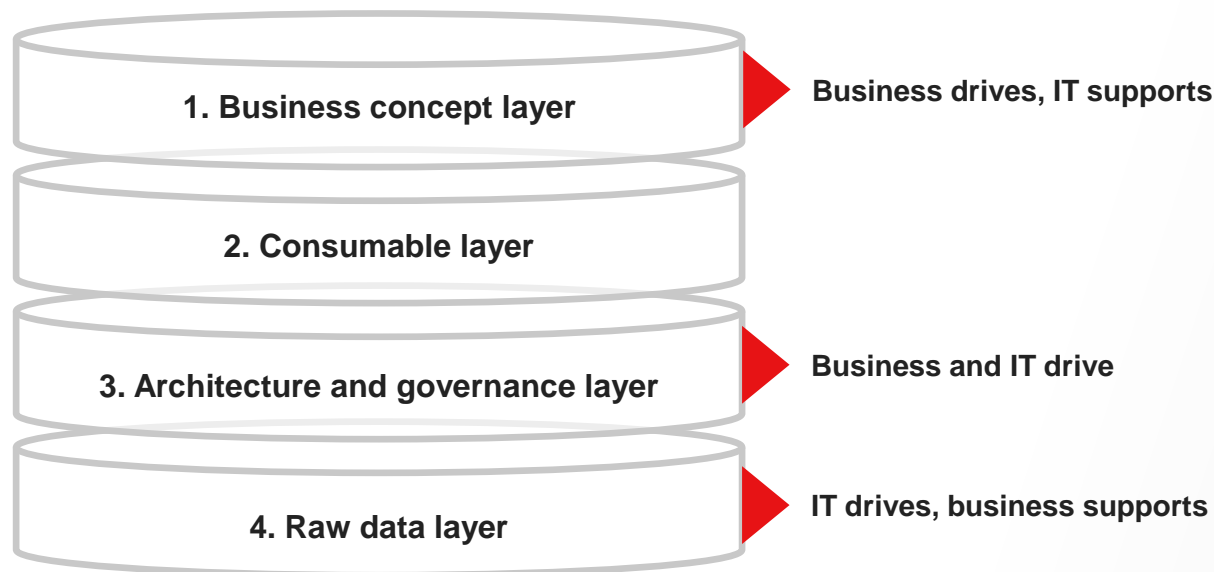
Streamlining our own back office

Advancing scientific discovery

Accelerating clinical outcomes

## Driving data transformation using the layer cake approach:

*Building the layers of IT and business partner collaboration:*



**Alignment between business and IT creates agility, a deep understanding and appreciation of the problems, capabilities and solutions**

## Building consistency, investing for scale:

Aligning with industry data standards for streamlined scientific solutions and more effective business operations

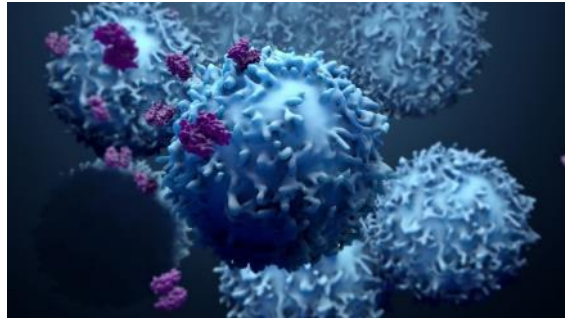
Adopting an ontology framework to bridge external ontologies and standards

Adhering to industry-wide expectations strengthens our commitments to our customers and opens up new possibilities



# With digital, we can enable paradigm shifts for our customers

## Discovery



**Significantly improve the odds of success and reduce the time and cost of discovery,** leveraging *in silico* biology

## Clinical research



**Meaningfully reduce time and costs of clinical development** through digitization, predictive models and data insights

## Production



**Simplification and acceleration of tech transfers** from clinical trials to manufacturing and between manufacturing sites

Thermo Fisher is uniquely positioned to be our customers' strategic partner across science, reagents, consumables, instruments, services and digital—including management and analysis of data

# Thank You

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