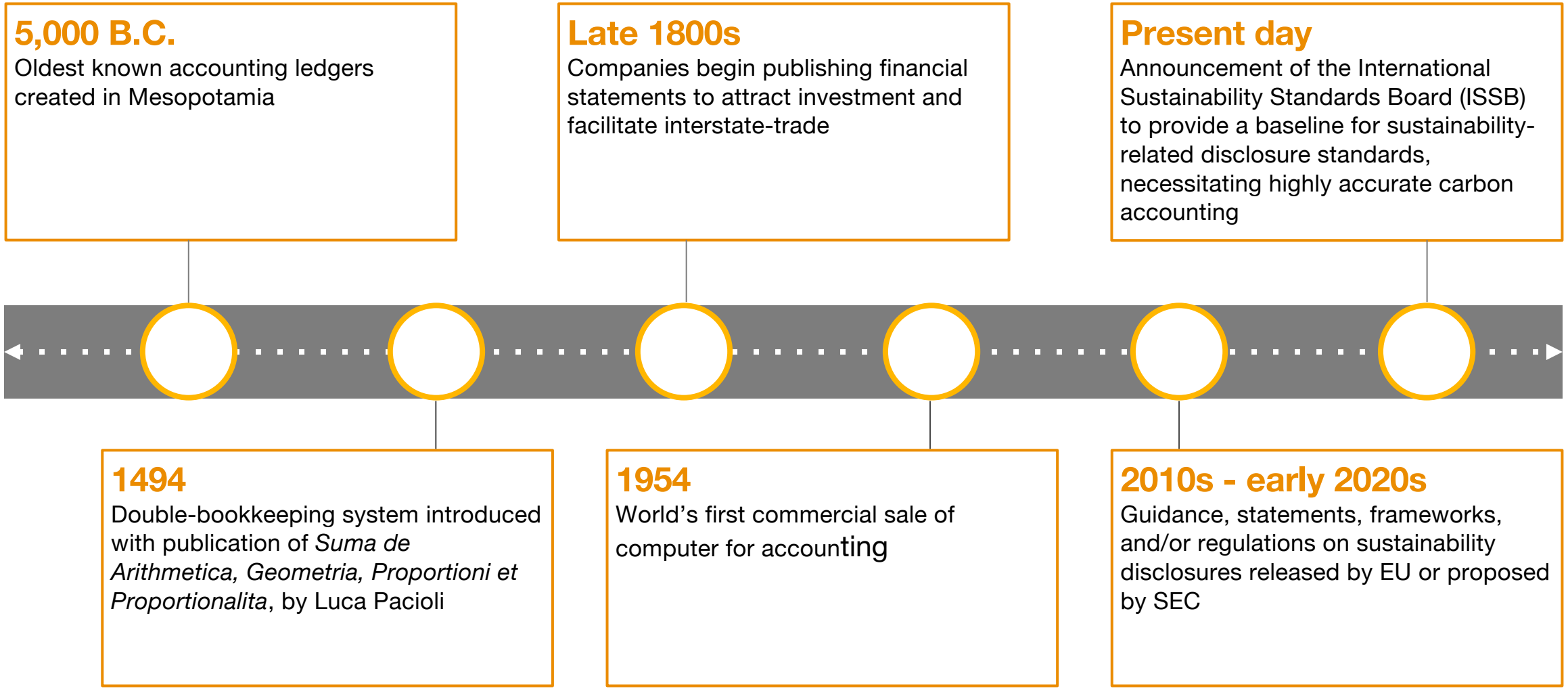
April 22, 2022

# Criticality of a data model within a carbon ledger

# The origins of accounting ledgers…



# Need for carbon data is important for 6 key stakeholder groups

## Customers

Demand low carbon inputs and define required ESG information/approved vendors

## Internal operations

Successful net zero delivery helps drive enterprise-wide transformation.

## Inorganic Opportunities

Business and customer segments are expected to disrupt significantly by 2030 - net zero will create winners and losers.

**Carbon Accounting**

**Trusted, actionable carbon data**

## Investors

Investors are factoring carbon into their decisions, seeking to shift portfolios and understand systemic risks.

## Lenders

Banks are becoming more risk-averse to exposures to carbon-intensive assets.

## Regulators

Major regulatory changes to promote low carbon will affect companies across geographies.

# The increased reliance on high quality carbon data necessitates a source of truth - a carbon ledger

- Enable informed carbon-embedded decisions with trusted and transparent view of carbon related data (emissions, credits, allowances, etc.)
- Navigate evolving regulations requiring more precise carbon accounting and disclosure with the same level of accuracy and transparency seen in financial disclosures
- Achieve decarbonization targets with auditable data and defend against claims of “greenwashing”
- Accurately quantify carbon-associated costs (e.g., border adjusted tariffs) to the correct cost center, location, product, etc
- Share carbon information with key stakeholders (e.g., customers, investors) to support their net zero agendas

# Managing carbon is not without its set of challenges

**Today, carbon data are largely:**

- Stored in siloed, disparate systems that make it difficult to gain insights from a comprehensive overview of data
- Divorced from core infrastructure and architecture that corporations use to manage their business
- Based on varying methodologies that lack the granularity, transparency and actionability needed to remove carbon emissions from products, operations and value chains

A carbon ledger is a record that aims to solve these issues, creating a bridge to a future in which carbon accounting has the same rigor and trust as financial accounting.
**A robust data model is key to a working carbon ledger…**

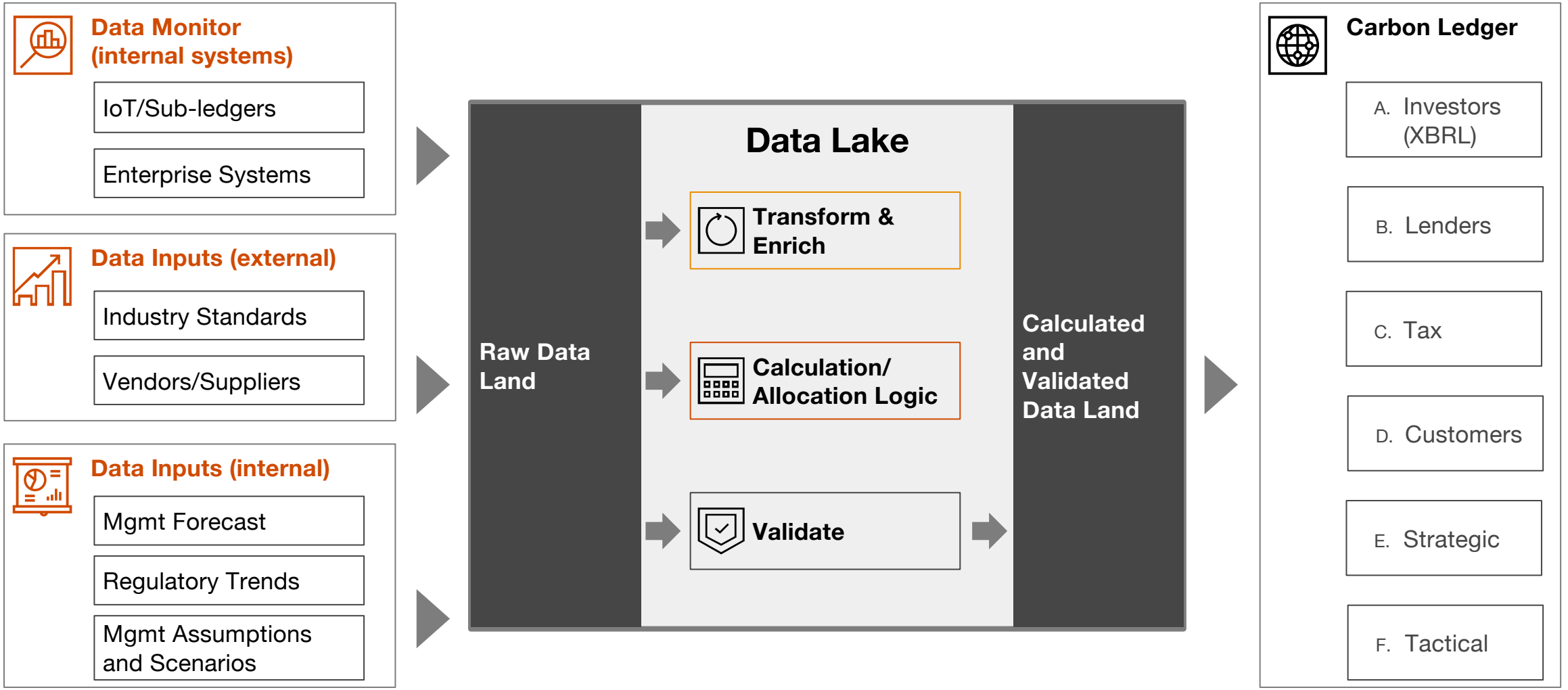
# The role of data model in a carbon ledger?

Represent carbon data in a consistent and harmonized manner for use within an organization and across the value chain

Enable trust and verifiability of data from its origination and the associated transformations/treatments throughout its life-cycle

A data model can ensure the right data is collected in the right way, at the right time, by the right people, so companies confidently use it for public and private disclosures to regulators, investors or customers

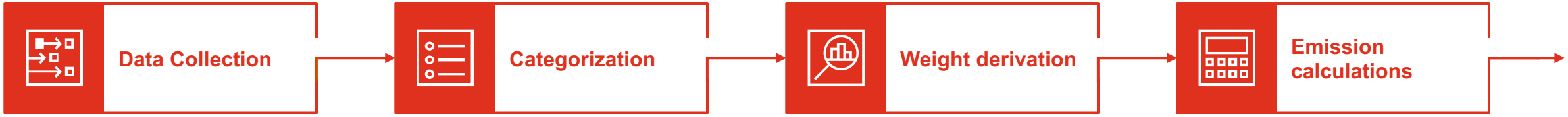
# CFOs need to report to stakeholders, so the data platform needs to seamlessly feed high-quality data into a carbon ledger



# Challenges of obtaining and feeding high quality Scope 3 data into the data model

## Category 1: Outcomes

Procurement data collected is categorized and further analyzed before calculating emissions using average data approach




- Supplier base surveyed: minimal suppliers capable of providing emissions data
- Analyzed different data sets collected to understand the gaps in information Identified an approach for categorization and aligned with the **1 MM** transaction lines over 1 year of data analyzed for purpose of categorization

- Able to approach **80%** of target spend categories by developing **600+ classification rules**
- Transaction lines with distinguishable standard codes/universal identifiers were identified and categorized
- Rest of the data categorized based on part description and PO line description
- Set stage for supplier provided emissions data

- Weight derivation was required to select appropriate emission factor and due to absence of weight information in the data provided.
- Weight derivation carried out through **regression analysis** and **industry averages approach**

- Emission calculated for **categorized purchased products**
- Detailed calculation model built to **automate $CO_2$ emissions calculation**
- Leveraged publicly available emissions database to select appropriate emission factors

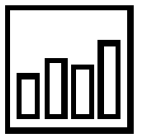
Source: PwC Research

# Working together to create a common data model through the Open Footprint™ Forum (OFP)

OFP is a cross-industry collaboration to create a common data standard for carbon-related information, such as organizational and product footprints - with an aim to create a single set of standards for data collection and management across all industries, that includes:

A reference architecture, with associated data model

Open source-based reference implementation



One data platform built for scalability and evolution

Aligned set of data definitions

APIs to share and access data

OFP helps facilitate accurate, streamlined carbon accounting for organizations working together to achieve their decarbonization goals

# Thank you

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