



From the Enlightenment to Business Models Season III

Episode 7 The Enlightenment and Science

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From the Enlightenment to Business Models

Our Outline for Season III

Season 3
Fall-Winter 2023

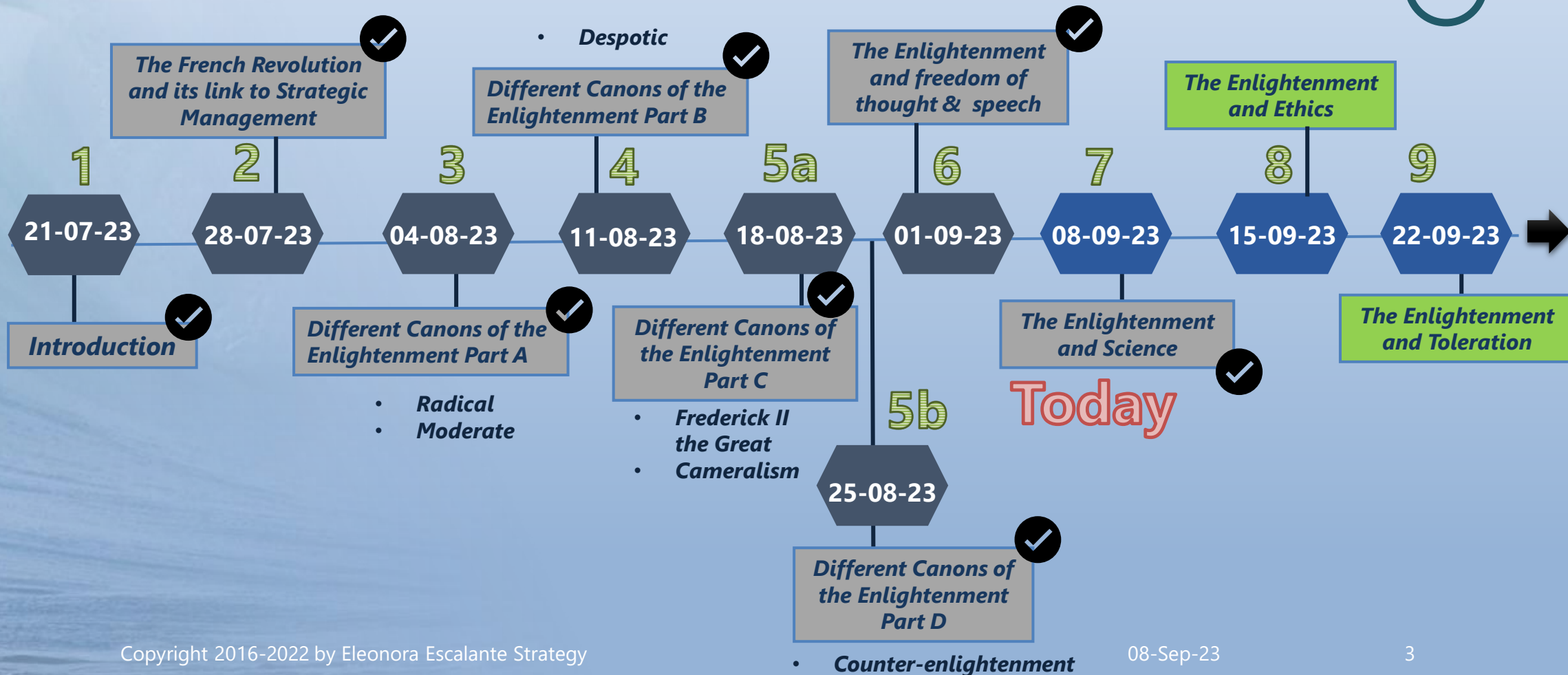
1. *Introduction* 🌱
2. *The French Revolution and its link to Strategic Management* 🌱
3. *Different Canons of the Enlightenment Part A: Radical & Moderate* 🌱
4. *Different Canons of the Enlightenment Part B: Despotism* 🌱
- 5a. *Different Canons of the Enlightenment Part C: Frederick II The Great and the Cameralism* 🌱
- 5b. *Different Canons of the Enlightenment Part D: Counter-enlightenment* 🌱
6. *The Enlightenment and freedom of thought & speech* 🌱
7. *The Enlightenment and Science* 🌱 **Today**
8. *The Enlightenment and Ethics*
9. *The Enlightenment and Toleration*
10. *The Enlightenment and Racial Differences/Slavery*
11. *The Enlightenment and Woman*
12. *The connection of the Enlightenment and Strategic Management*
13. *The Enlightenment philosophical premises found in Contemporary Strategy Analysis*
14. *The Enlightenment unearthed in corporate strategy formulation*
15. *The Enlightenment uncovered in corporate portfolio analysis*
16. *The Enlightenment found in Business Modeling*
17. *The Enlightenment and the Value Proposition Canvas*
18. *The Enlightenment premises in the MNCs value propositions*
19. *The Enlightenment found in the concept of Synergies*
20. *Research agenda for the transformation of Corporate Strategy Syllabus in Business Schools*
21. *Summary and Conclusions.*



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Our Proposed Timeline. We will publish every Friday. It is subject to change.

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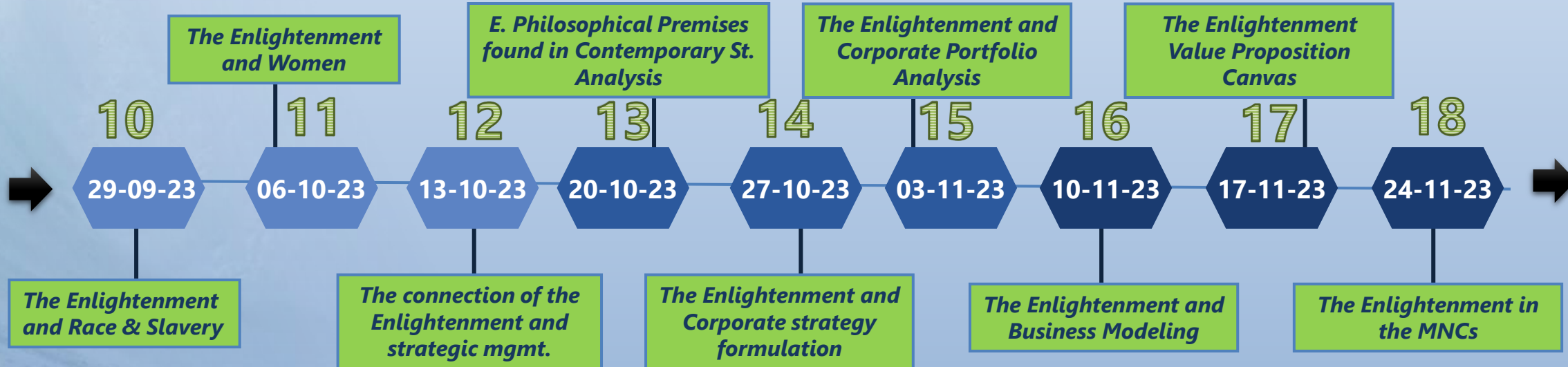




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The centuries of our studies: 17th and 18th centuries

The first peak of the Enlightenment

17th Century
The Century of Genius



18th Century
The century of Pause and Political Revolution



19th Century
The century of Industrialization

- A creativity unparalleled century in history before or since, from science to the arts, from philosophy to politics.
- The Age of Genius was the foundation for the forces of democracy, secularism, enlightenment and science. The origin that dethroned divine-right monarchy, religious faith, ignorance and tradition.

- A century of pause and diffusion.
- No new discoveries were made to rival those of Newton and Leibniz
- This century was a pause for diffusion of what the 17th century disclosed in science and philosophy
- Only Britain was applying early capitalism.
- It was a war-violent century with dramatic political transformations.

- The production of manufactured goods was enhanced by steam power and many other inventions in other industries.
- New factories (textiles, steam trains, etc). Britain established the coal & iron industries, heavy engineering for rail-roads, and large-scale manufacturing factories
- The first industrial revolution was coming out of Britain and in waves spread out to Continental Europe.



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The Route of Science between the 15th and 17th centuries

J.D. Bernal prepared a route of science between 1440 to 1690. Slides 7 to 9

Year	Historical Events	Philosophy	Navigation	Mathematics and Astronomy	Optics	Mechanics and Hydraulics	Chemistry	Physiology, Medicine and Natural History
	Authorities reinstated:	Plato, Archimedes, Aristarchus, Alhazen, Philoponos, Lull						
	Authorities dethroned	Aristotle, Ptolemy and Galen.						
1400	End of Schism Hussite Revolt	Nicholas of Cusa- Speculation on the Earth's Movement		Ulugh Beg – Smakand Observatory				
1440	<ul style="list-style-type: none">Italian RenaissancePlatonic Academies in FlorenceGrowth of Trade and Arts	Humanism return to the classics	<ul style="list-style-type: none">Portolan mapsSchool of SagresPortuguese along African CoastColumbus discovers AméricaVasco de Gama Reaches India	<ul style="list-style-type: none">Recovery of Greek MathFeurbach revival of AstronomyMuller nautical almanacs	Development in painting and perspective	Developments in metallurgy, mining and pumping	Beginnings of chemical production, alcohol, gunpowder, alum	





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1500	Italian Wars				Leonardo Da Vinci Scientific Painting	Leonardo Davinci Engineering, waterworks		Leonardo Da Vinci Drawings of Anatomy and Natural History
1540	Francis I College de France Reformation: Luther, Calvin	More: Utopia Vives, Erasmus Rabelais criticism of medievalism	Magellan round the world		Durer Perspective	Development of gunnery	• Paracelsus revival of chemistry • "De re metallica" by G. Agricola	Surgery Paré "De Fabrica" from Vesalius
1550	• Great Inflation • Counter Reformation • Religious wars in France • Revolt of the Netherlands • Elizabethan age • Gresham College	Montaigne Scepticism Bruno Plurality of Worlds	• Nuñez maps and navigation • Problem of longitude • Mercator's maps • Norman magnetic dip	• Copernicus Solar System • Tartaglia, Cardan, Algebra revived • Vieta Symbolic algebra • Tycho accurate observations		• Tartaglia Ballistics Development of dykes, canals, locks in Holland • Stevin statics and hydraulics		• Servetus pulmonary circulation • Collection of rarities • Development of gardening and agriculture
1600					Spectacle-makers invent telescope			

Source: <https://www.amazon.com/Science-History-Scientific-Industrial-Revolutions/dp/B000FF8OGM>




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1600	<ul style="list-style-type: none"> Pre-capitalism entrance Academia de Lincei Thirty Years War Civil Wars in Britain Informal meetings of scientists 	<ul style="list-style-type: none"> Bacon experimental Philosophy Gassendi atomism Descartes mechanical philosophy Hobbes materialism 	Gilbert on magnet	<ul style="list-style-type: none"> Kepler planetary orbits Napier logarithms Descartes analytical geometry Fermat number theorem 	<ul style="list-style-type: none"> Galileo telescopic observation "Two chief systems" trial 	Pendulum "Two new sciences" Dynamics	Van Helmont gas	
1650	<ul style="list-style-type: none"> Royal Society Louis XIV in France Académie des Sciences Expulsion of the Huguenots 	<ul style="list-style-type: none"> Spinoza rational morality Leibniz pre-established harmony 	Gericke frictional electricity	<ul style="list-style-type: none"> Newton Calculus Theory of Gravitation Leibniz differentials 	<ul style="list-style-type: none"> Newton theory of colour Romer velocity of light Huygens wave theory of light 	Torricelli barometer Guericke vacuum Boyle gas law Hooke experimental physics		
1690								

Source: <https://www.amazon.com/Science-History-Scientific-Industrial-Revolutions/dp/B000FF8OGM>

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The Route of Science of the 18th century

J.D. Bernal prepared a summary of the main events of science during the 18th century.



Year	Historical Events	Philosophy	Economics	Engineering and Metallurgy	Electricity	Chemistry	Biology and Geology
1690		Locke liberty, private property, toleration	Bank of England founded	• Savery steam pump	• Hauksbee frictional electricity	<i>Stahl phlogiston</i>	Camerarius sex in flowers Woodward fossils relics of flood
1700	<ul style="list-style-type: none">• War of Spanish Succession• Peter the Great ascends to power• Rise of Russia 	<ul style="list-style-type: none">• Berkeley Idealism• Hume scientific scepticism	Growth of small-scale manufacture in Britain and Northern France Agricultural improvements, enclosures	<ul style="list-style-type: none">• Darby iron smelted with coke• Newcomen steam engine• Reaumur theory of iron and steel• Smeaton scientific engineering 	<ul style="list-style-type: none">• Gray electrical conductivity• Dufay two kinds of electricity	Hales begins the pneumatic revolution	<ul style="list-style-type: none">• Boerhaave teacher of medicine• Linnaeus classification system of nature
1750	<ul style="list-style-type: none">• Frederick the Great ascends to power in Prussia	<i>The philosophes:</i> <ul style="list-style-type: none">• Diderot <i>Encyclopaedia</i>• Voltaire <i>time</i>	• In Britain, begins the first industrial revolution		<ul style="list-style-type: none">• Musschenbroek electric condenser and shock• Franklin electricity, lightnings conductor	<ul style="list-style-type: none">• Lomonosov physical chemistry• Black carbon dioxide	<ul style="list-style-type: none">• Trembley invertebrates• Buffon <i>Natural History and Theory of the Earth</i>• Haller physiology




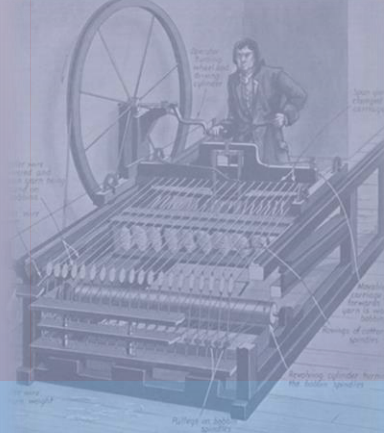
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1760	<ul style="list-style-type: none"> British Conquest of India American Revolution French Revolution 	<ul style="list-style-type: none"> Rousseau Social Contract Lunar society in Birmingham Kant philosophy of duty Goethe Naturphilosophie 	<ul style="list-style-type: none"> Adam Smith Wealth of Nations Early capitalism in Britain: foundations for Iron and Coal exploitation at grand scale First factories in Britain Malthus on Population 	<ul style="list-style-type: none"> Roebuck Carron iron works Black latent heat Hargreaves, Arkwright, Crompton: Cotton spinning machinery Boulton metal factory Wilkinson ironmaster Watt rotary engine Cort wrought iron Rumford heat from work 	<ul style="list-style-type: none"> Coulomb laws Galvani, Volta, current electricity Davy electrochemistry 	<ul style="list-style-type: none"> Priestley, Scheele discover oxygen Lavoisier reverses phlogiston theory founds modern chemistry Dalton atomic theory Hauy crystallography 	<ul style="list-style-type: none"> Werner cataclysms Hutton geology without miracles Bichat tissues Lamarck evolution by modification
1800	<ul style="list-style-type: none"> Napoleonic Wars Holly Alliance peace 			<ul style="list-style-type: none"> Trevithick high pressure engine 			<ul style="list-style-type: none"> Oken Morphology Cuvier Palaeontology
1815							

Source: <https://www.amazon.com/Science-History-Scientific-Industrial-Revolutions/dp/B000FF8OGM>

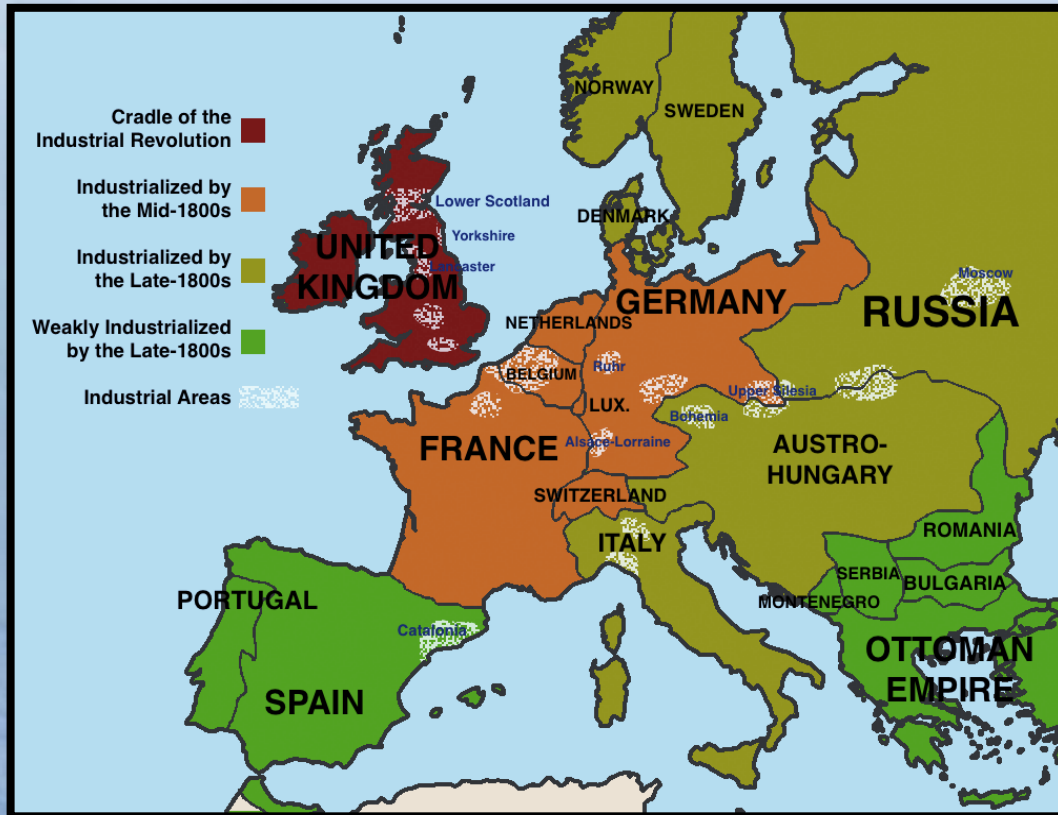


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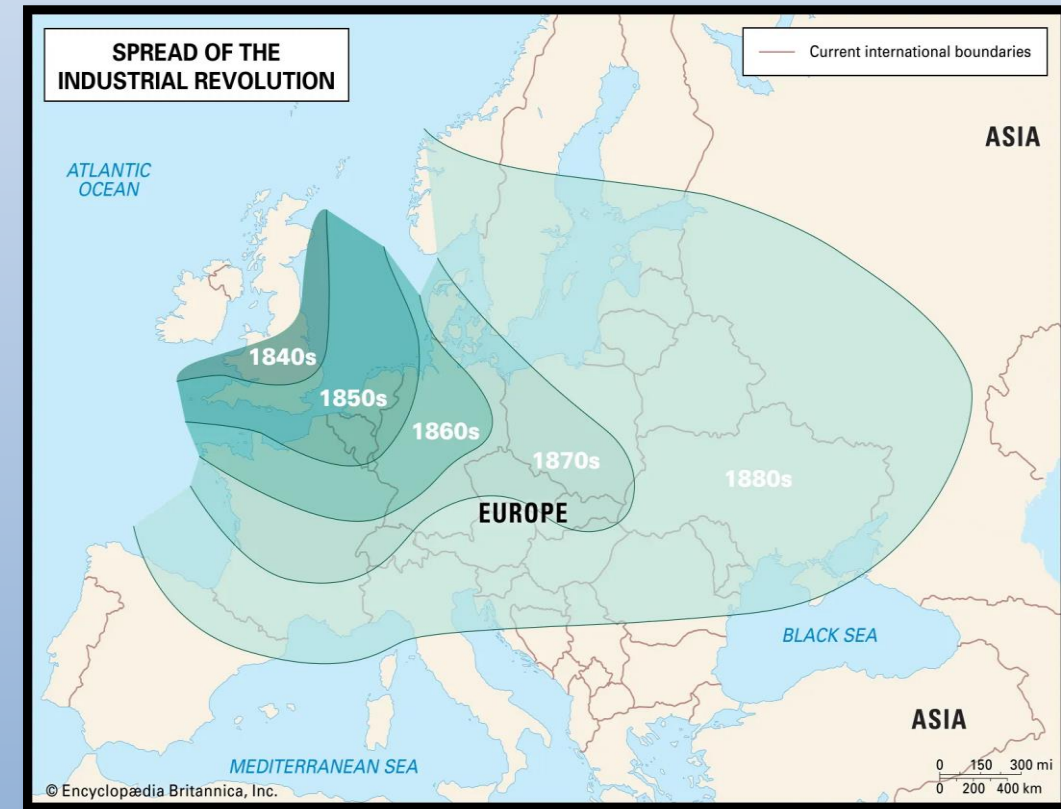
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The First Industrial Revolution was a process in several waves.

After the Napoleonic wars came to an end, the spread of the First Industrial Revolution came out of Britain.



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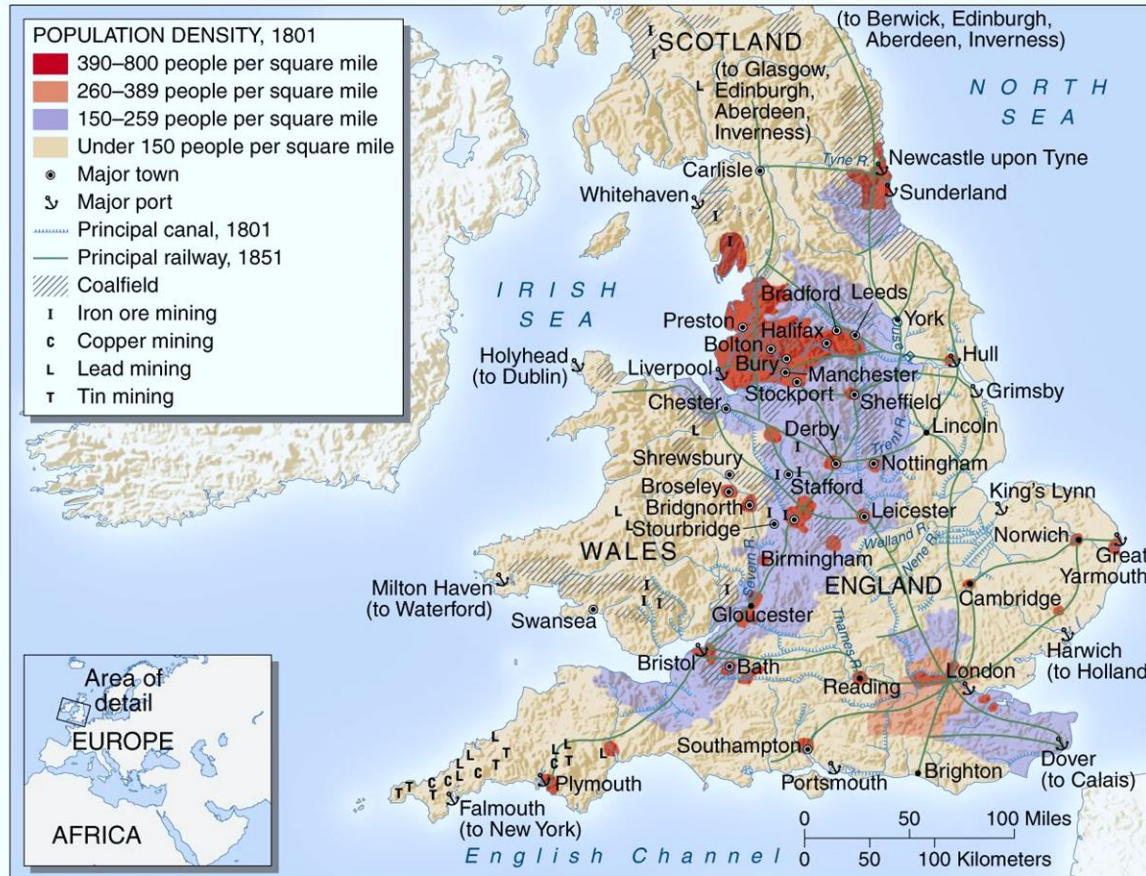
<https://cdn.britannica.com/90/198190-050-97332EE2/map-spread-Industrial-Revolution-Europe.jpg>



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Next Week: The Enlightenment and Ethics



MAP 19.1 The First Industrial Nation

Western Civilizations, Sixteenth Edition
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*We will stop here today.
Our next publication will be
about the Enlightenment and
Ethics.
Thank you. Have a nice
weekend. See you next week.*