UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT

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The impact of a low-cost drone with an open configuration on the Sustainable Development Goals

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The market is just taking off

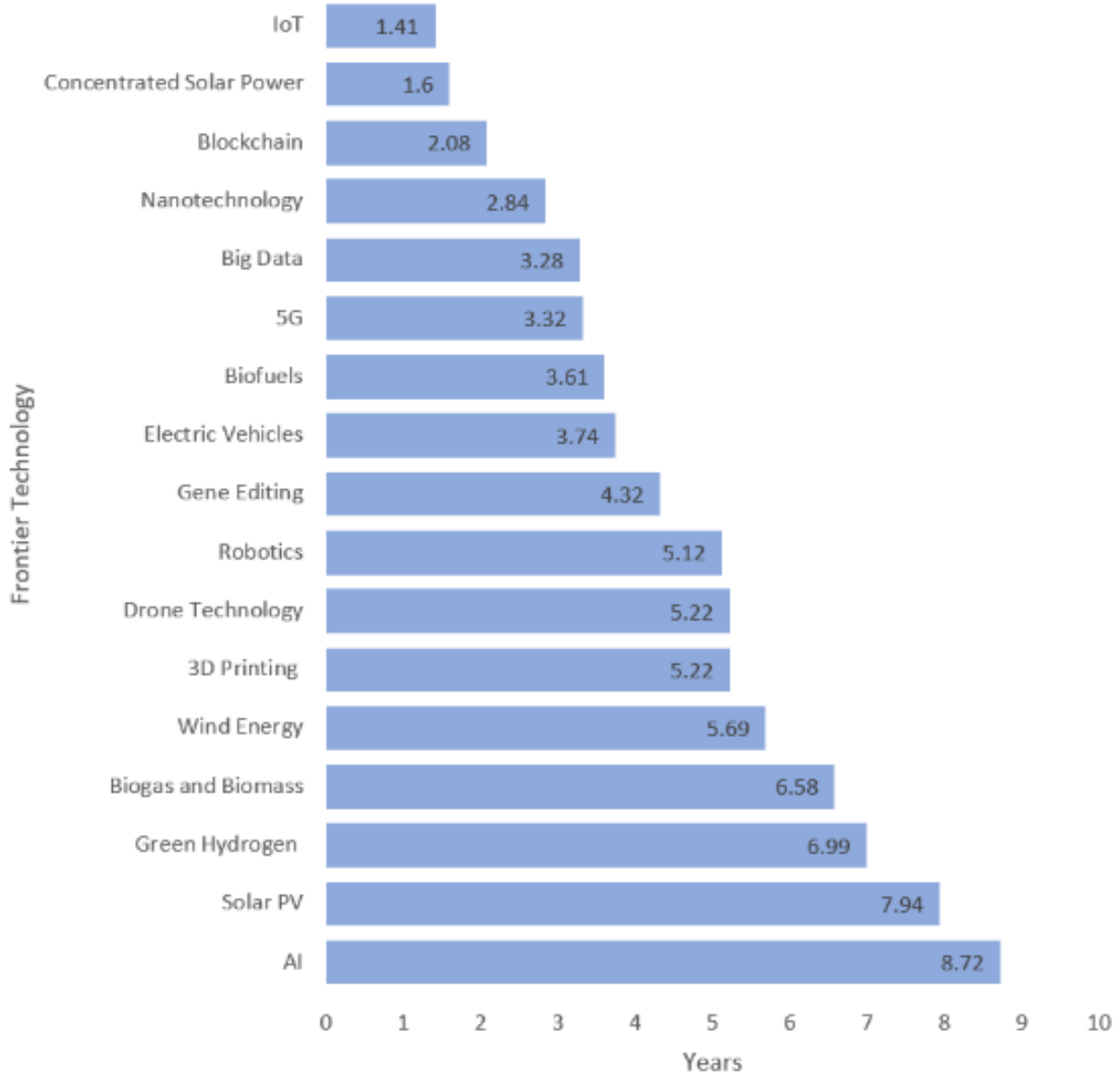
- US market: from around $40 million in 2012 to around $1 billion in 2017

- Expected annual impact: $31 to $46 billion on the country’s GDP

Drone: Innovation and market facts

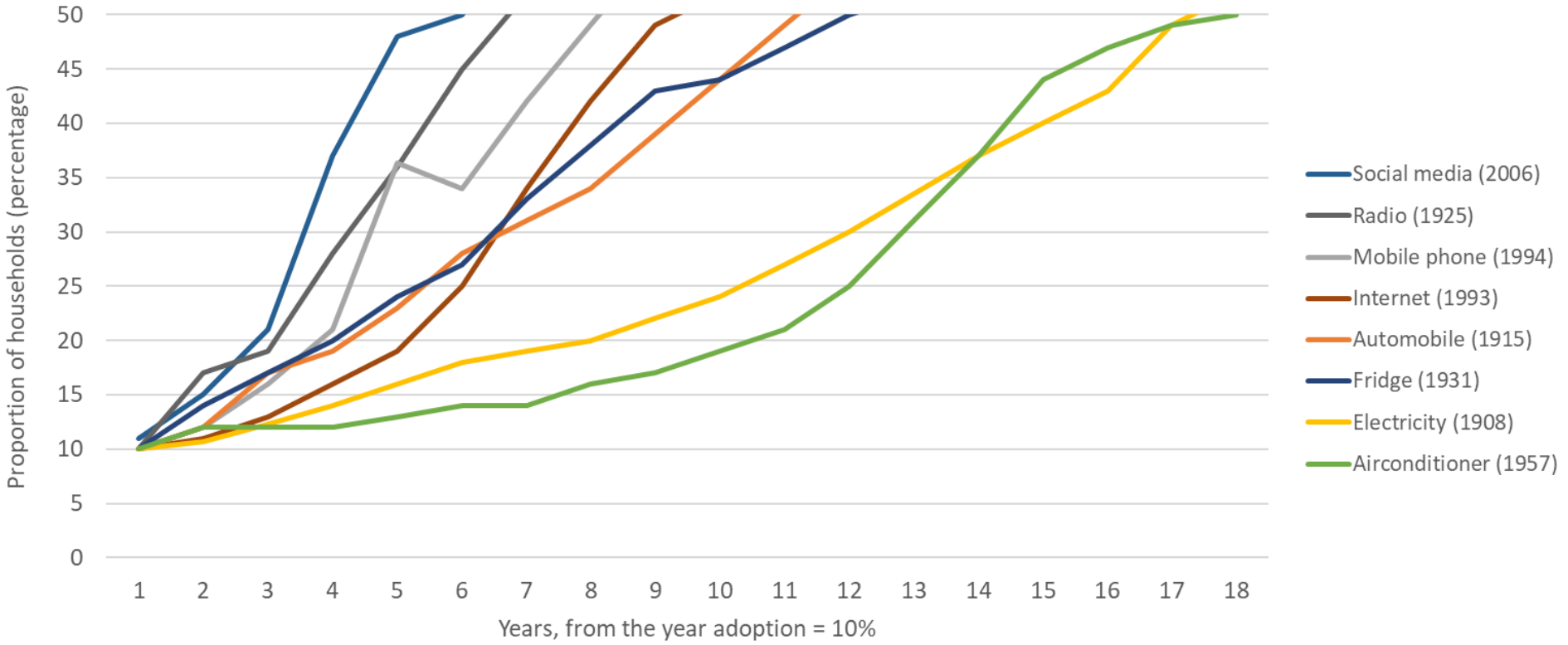
	Drones
Publications (2000-2021)	23 526
Patents (2000-2021)	48 613
Price	Commercial drone: $2000+
Market size estimates	$19 billion (2020) $102 billion (2030)
Major providers	3D Robotics, DJI Innovations, Parrot, Yuneec, Boeing, Lockheed Martin, Northrop Grumman
Major users	Utilities, construction, discrete manufacturing and Agriculture

Patent maturity of frontier technologies



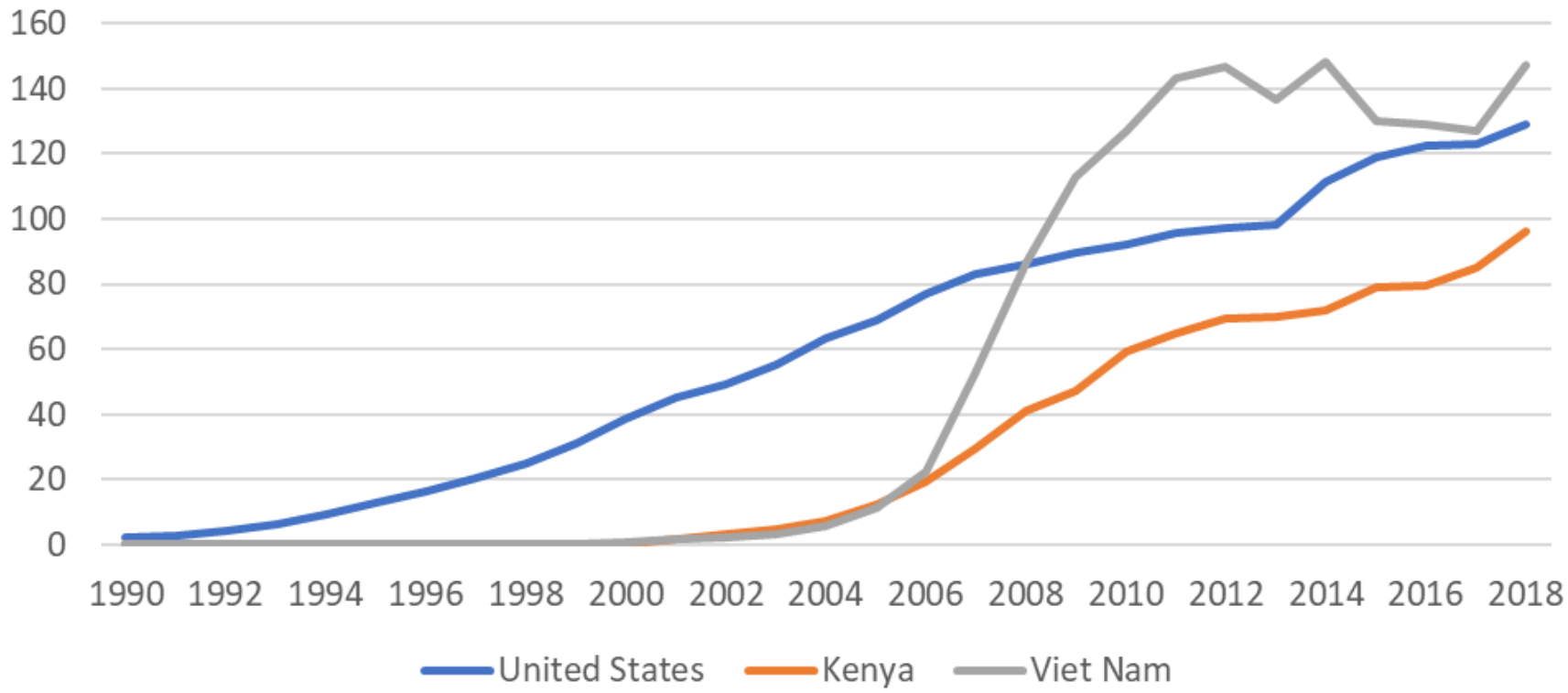
Source: UNCTAD.
Note: For each technology, the number in the bar graph shows the patent maturity, which is the difference between the weighted average patent application year and the weighted average year of the 20 most cited patents between 2000 and 2021.

Diffusion of selected technologies, the United States



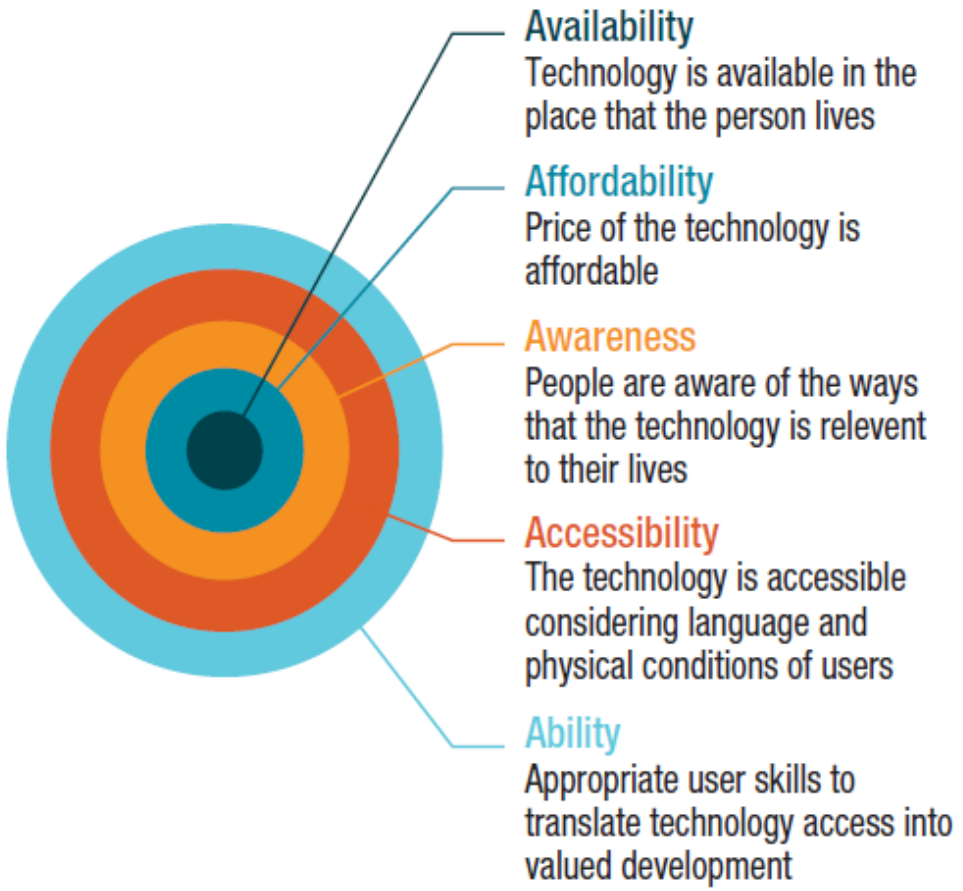
Source: UNCTAD based on (Ritchie and Roser, 2017)

Mobile cellular subscriptions, selected countries (per 100 persons)



Source: UNCTAD based on World Bank Development Indicators.

Five as of technology access



Source: UNCTAD based on Roberts (2017) and Hernandez and Roberts (2018).

BUSINESS MODEL PATTERNS

Digitally enabled and accessing new customer segments

Digital	Degree of digitization	Purely digital: 7	Digitally enabled: 16	Not necessarily digital: 1		
Value proposition	Product type	Physical: 13	Financial: 15	Human: 16	Intellectual property: 9	Hybrid: 19
	Differentiation strategy	Quality: 17	Customization: 11	Combination: 19	Access/convenience: 18	Price: 17	Network effects: 6
Value delivery	Target customers	Specific new customer segment: 22	Lock-in existing customers: 3	Other companies (B2B): 6		
	Value-delivery process	Brand and marketing: 9	Sales channel: 5	Sales model: 11	Customer relationship: 21	
Value creation	Sourcing	Make: 20	Buy: 4	No impact on sourcing: 2		
	Third parties involved	Suppliers: 5	Customers: 7	Competitors: 0	Multiple parties: 2	No one else involved: 14
	Value-creation process	Research and design: 16	Supply: 15	Production: 12	Multiple steps: 15	
Value capture	Revenue model	Sell: 18	Lend/lease: 5	Intermediate: 8	Advertising: 0	
	Pricing strategy	Premium: 1	Cheap: 14	Dynamic: 4	Non-transparent: 8	
	Profit	For-profit: 20	Not for-profit: 2			
	Direct profit effect	Increase revenue: 9	Reduce cost: 6	Multiple effects: 3	No direct profit impact: 12	

Source: UNCTAD, based on Remane et al. (2017)

Developing a low cost drone that contributes to the SDGs

Open Source Software Innovations

Open Source Hardware innovations

Developing a low-cost drone

3d Printers could help on Open Hardware development

Standardization

Use recycled pieces

Integrated R&D with all stakeholders

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