

#UKSPACE2015

OPPORTUNITIES FOR BUSINESS



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LIVERPOOL FROM SPACE DMCii



The space value-chain explained

UK Space Conference 2015, Liverpool
'Opportunities for Business' session
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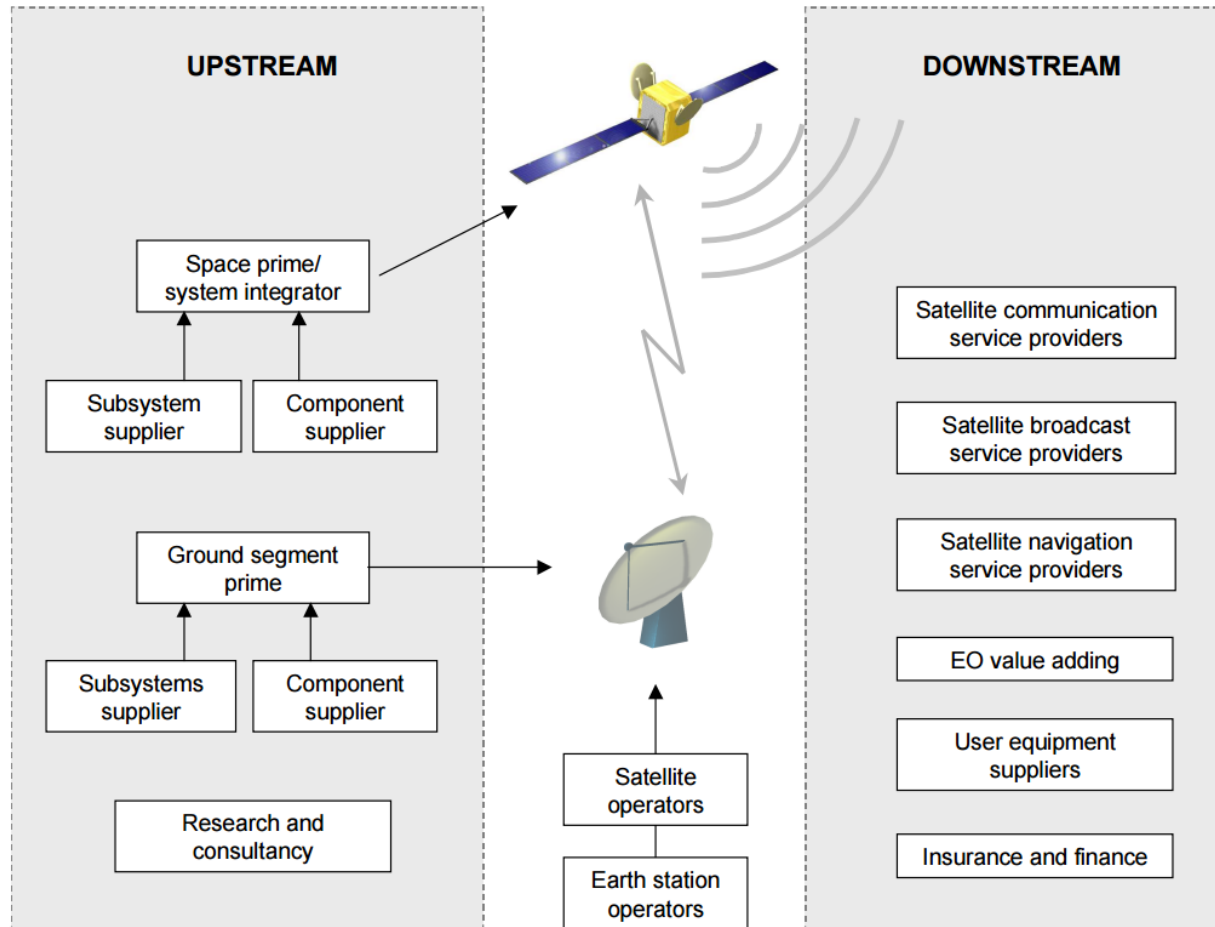
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Traditional view: the 'Space Industry'

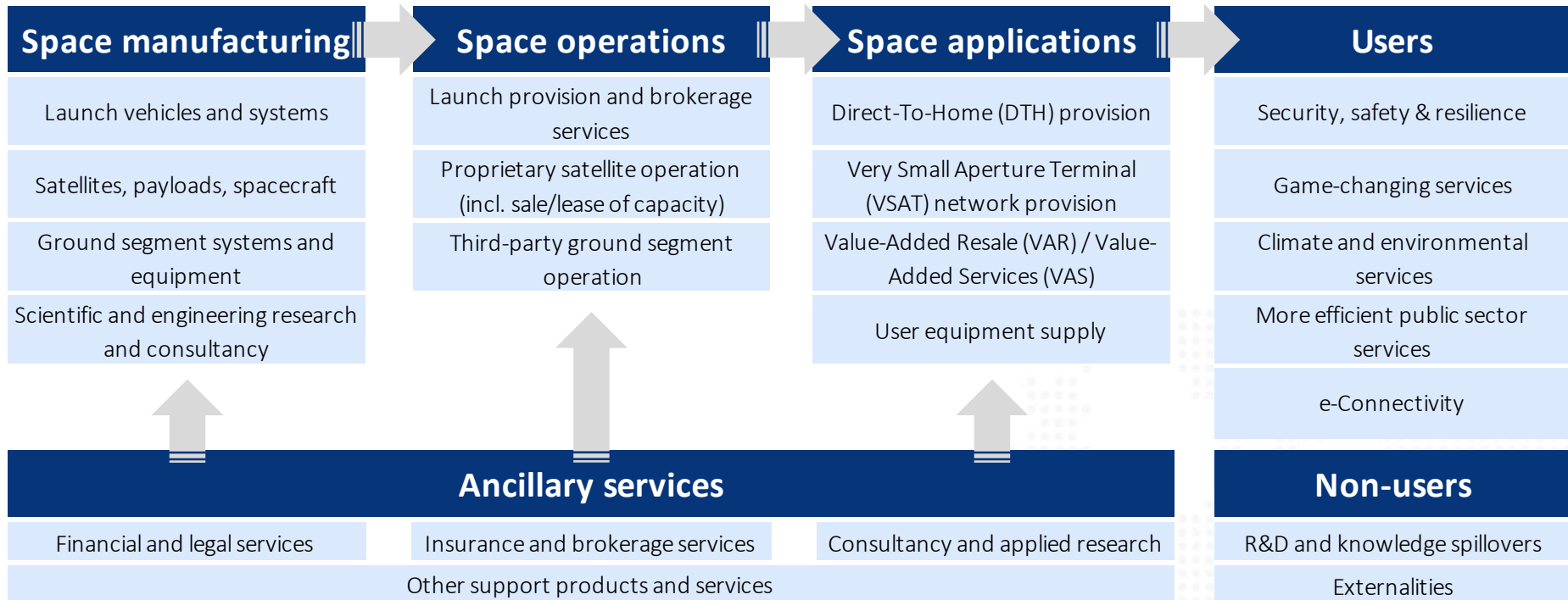


Source: UK Space Agency (2008, 2010, 2012) *The Size and Health of the UK Space Industry*

Modern view: the 'Space Economy'

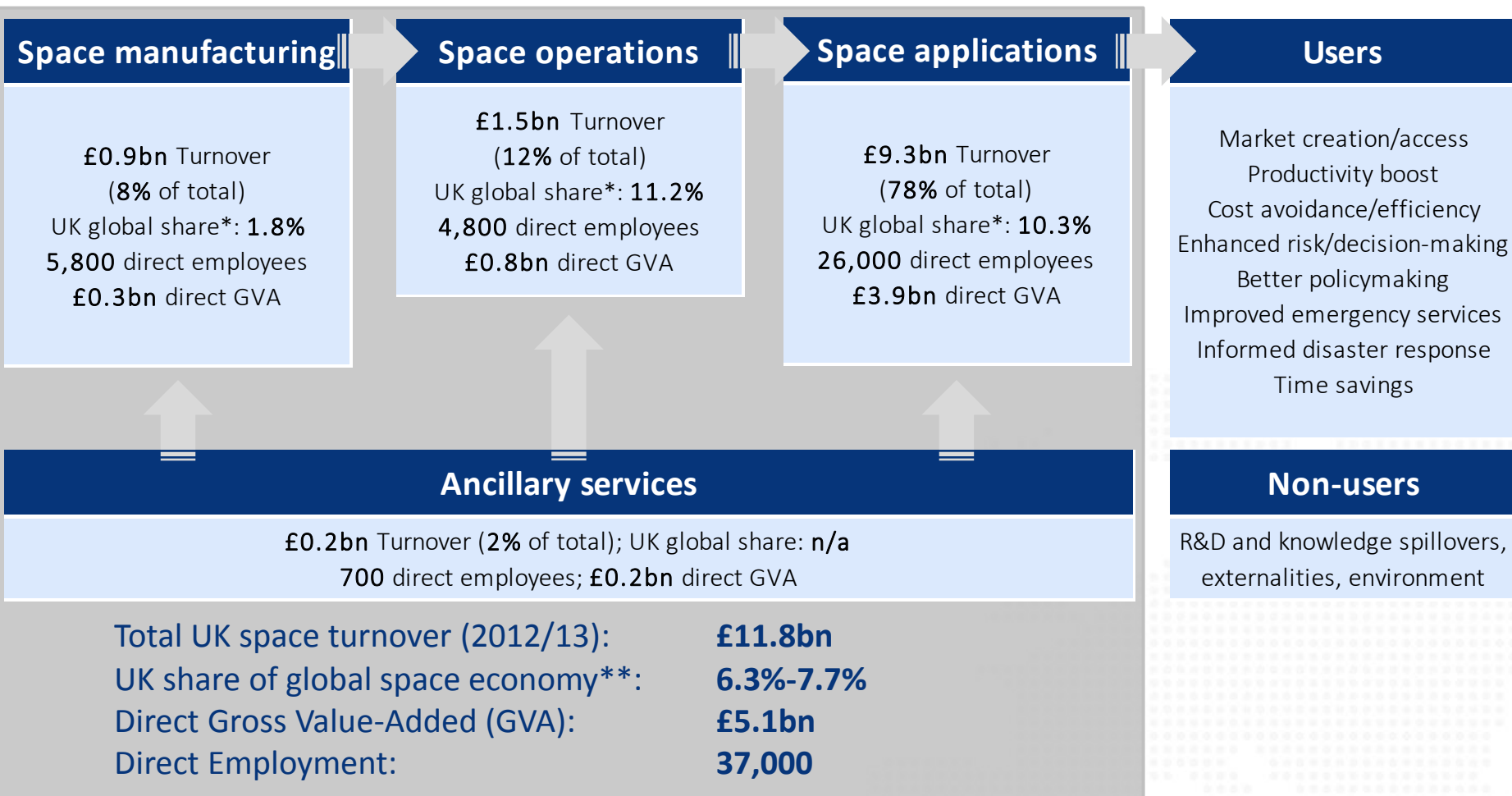
“The Space Economy is the **full range of activities and the use of resources** that create and provide value and benefits to human beings in the course of **exploring, understanding, managing and utilising** space. Hence, it includes all **public and private** actors involved in **developing, providing and using space-related products and services**, ranging from **research and development**, the **manufacture and use of space infrastructure** (ground stations, launch vehicles and satellites) to **space-enabled applications** (navigation equipment, satellite phones, meteorological services, etc.) and the **scientific knowledge generated** by such activities. It follows that the Space Economy goes well beyond the space sector itself, since it also comprises the increasingly pervasive and continually changing impacts (both quantitative and qualitative) of **space-derived products, services and knowledge** on economy and society.”

The 'Space Economy' Value Chain



Source: London Economics (2015) *The Case for Space 2015*

UK Space Economy (2012/13)



Source: London Economics (2015) *The Case for Space 2015*

* Estimate compared to OECD *The Space Economy at a Glance 2014* (adopts a similar segmentation).

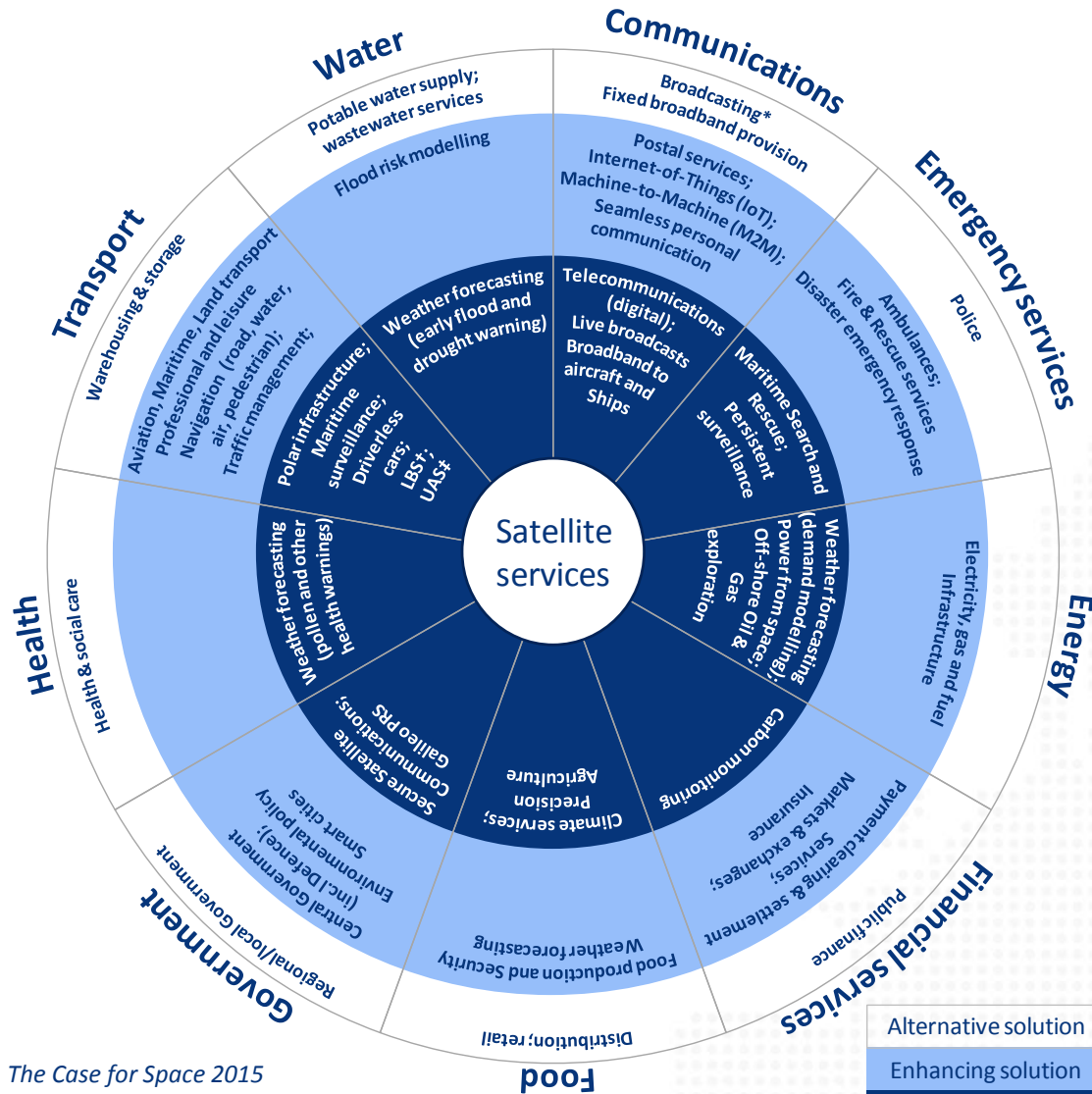
** Estimate compared to The Space Foundation *The Space Report 2014* and OECD *The Space Economy at a Glance 2014*, respectively.

Space ... enables a wide array of applications/users



etc ...

... supports all 9 National Infrastructures



Source: London Economics (2015) *The Case for Space 2015*

Enabling solution: Applications for which satellite services are essential (current practice).

Enhancing solution: Satellite services offer clear cost efficiency and/or performance superiority.

Alternative solution: Application could be achieved with terrestrial (non-satellite) solutions, but satellite services may be chosen based on cost or performance grounds.

*: Alternative solution for recorded broadcasting, but enables live broadcasting. **: Location-Based Services. ***: Unmanned Aerial Systems.

... supports almost all other sectors of the UK economy

Economic sectors supported by space-enabled services (2013)

SIC section	Sector	Intensity of satellite use†
A	Agriculture, forestry and fishing	●●●○
B	Mining and quarrying	●●●○
C	Manufacturing	●○○○○
D	Electricity, gas, steam and air conditioning supply	●●○○○
E	Water supply, sewerage, waste management, and remediation activities	●○○○○
F	Construction	●●●○
G	Wholesale and retail trade; repair of motor vehicles and motorcycles	●○○○○
H	Transport and storage	●●●○
I	Accommodation and food service activities	●○○○○
J	Information and communication	●●●○
K	Finance*	●●●○
L	Real estate activities	●○○○○
M	Professional, scientific and technical activities	●●○○○
N	Administrative and support service activities	●●○○○
O	Public Administration and Defence; Compulsory Social Security**	●●●○
P	Education	●●○○○
Q	Human health and social work activities	●●○○○
R	Arts, entertainment and recreation	●○○○○
S	Other service activities	○○○○○
T	Activities of households	○○○○○
	Total	-

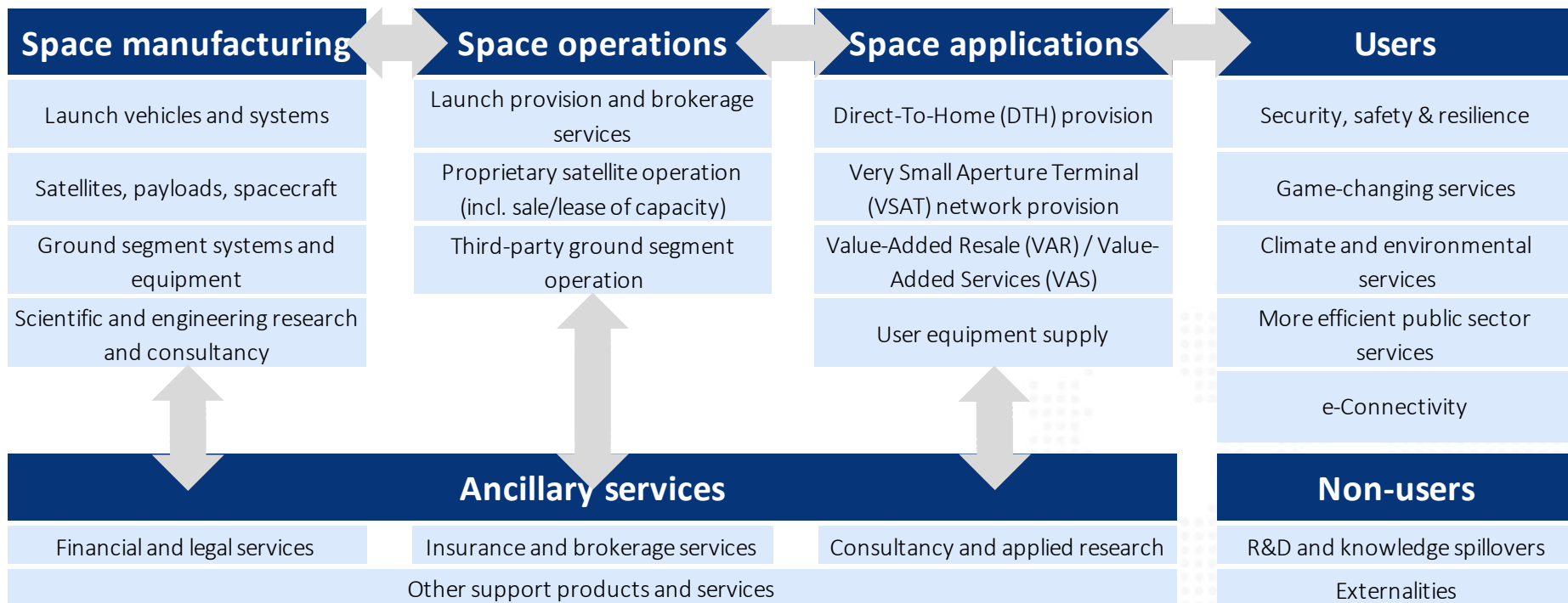
Legend: ●●●●●: The whole sector is fully enabled by space; ●●●●○: space plays a strong, central role (it cannot be inferred that space generates 4/5=80% of activity); ●●●○○: space plays a support role; ●●○○○: space plays a minor, but not negligible role; ●○○○○: space influences the sector in indirect fashion (e.g. supporting supplies, generating footfall); ○○○○○: space plays no role. Values quoted do not infer a valuation of the utility of space services, but rather the total value of sectors supported. † Each sector has been assigned an 'intensity of satellite use' factor using subjective judgement based on industry knowledge.

*: data from House of Commons Library, Financial Services: contribution to the UK economy, 2015; **: data from Public Administration, Defence and Compulsory Social Security Industry Review – 2014.

Source: London Economics analysis of ONS data

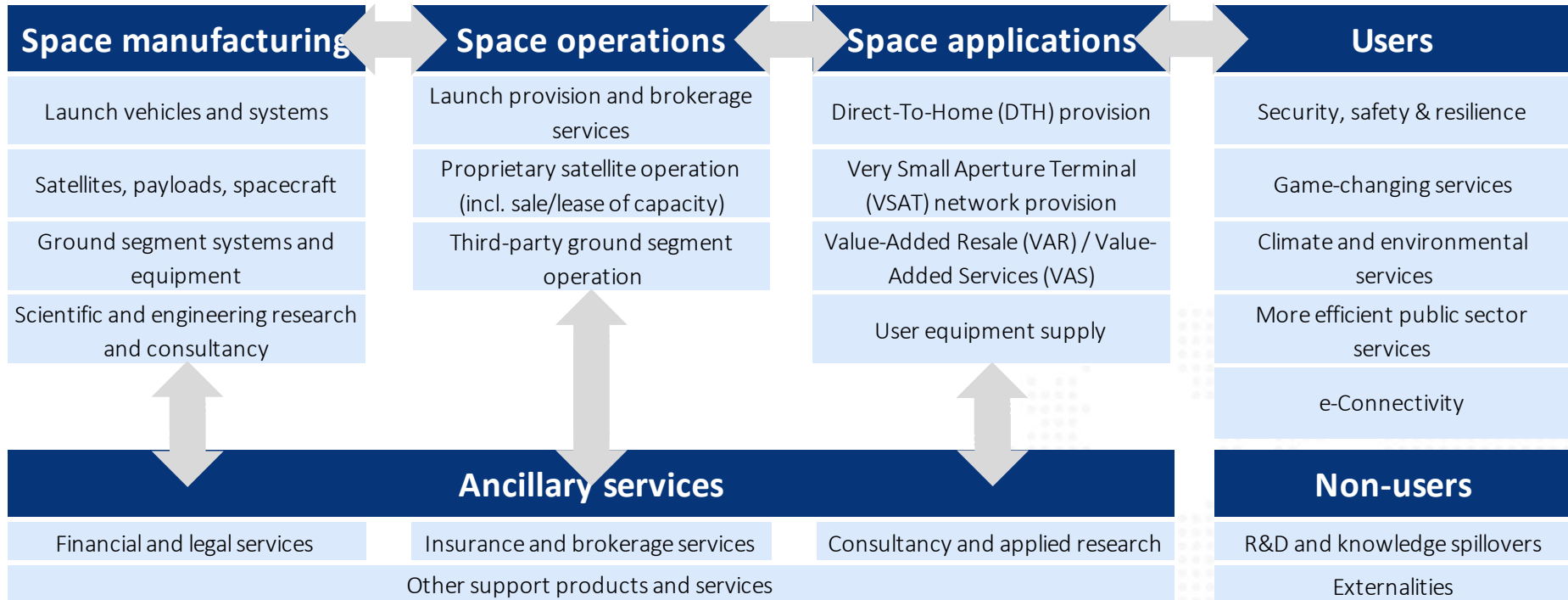
Space eco-system: Linkages and sustainability

Inter-linkages between Upstream and Downstream



Space eco-system: Linkages and sustainability

Re-investment Upstream is critical for the sustainability of the eco-system



Thank you.

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