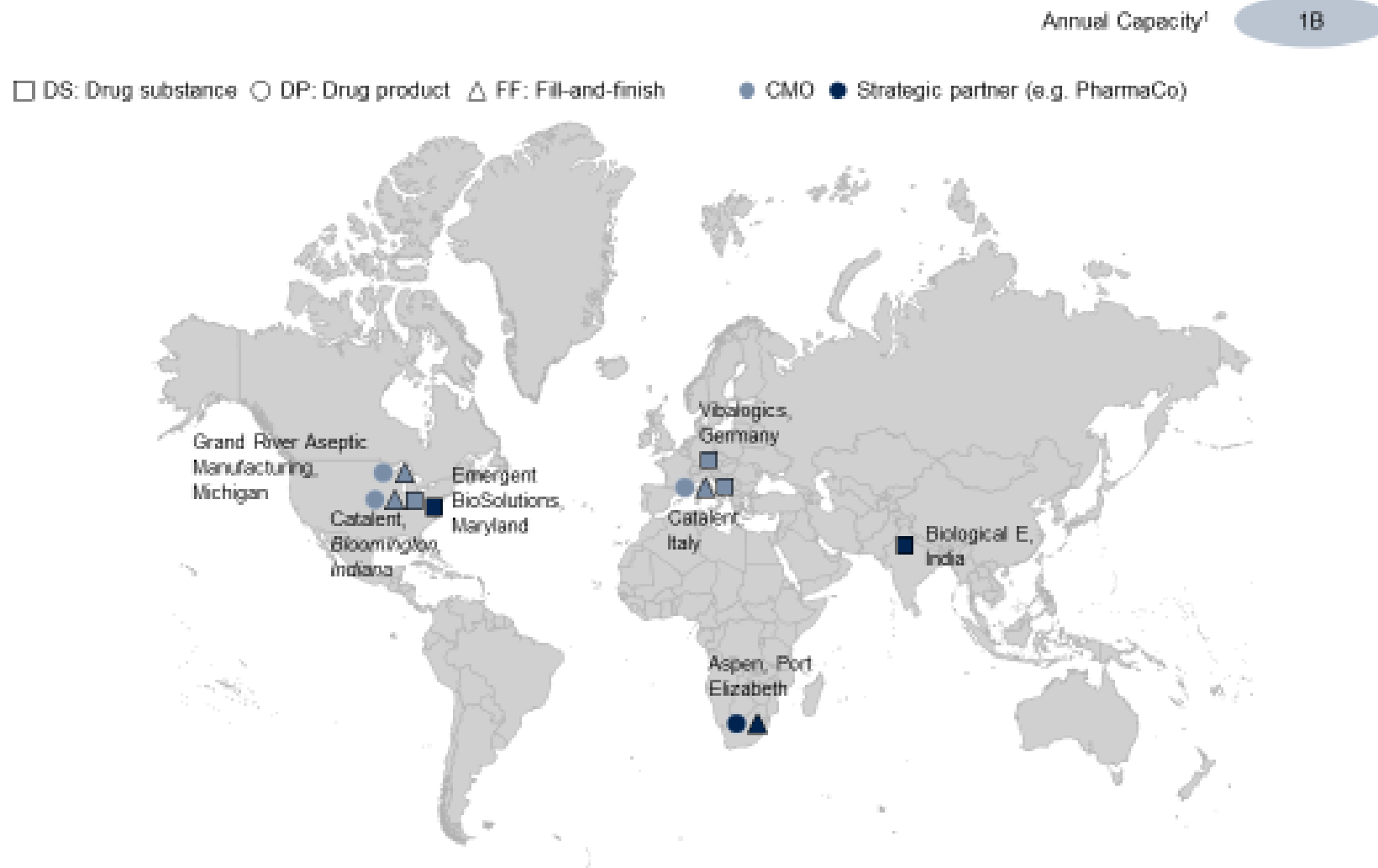


Distribución mundial de la producción de vacunas

Known Vaccine Manufacturing Capacity – J&J

NON-EXHAUSTIVE

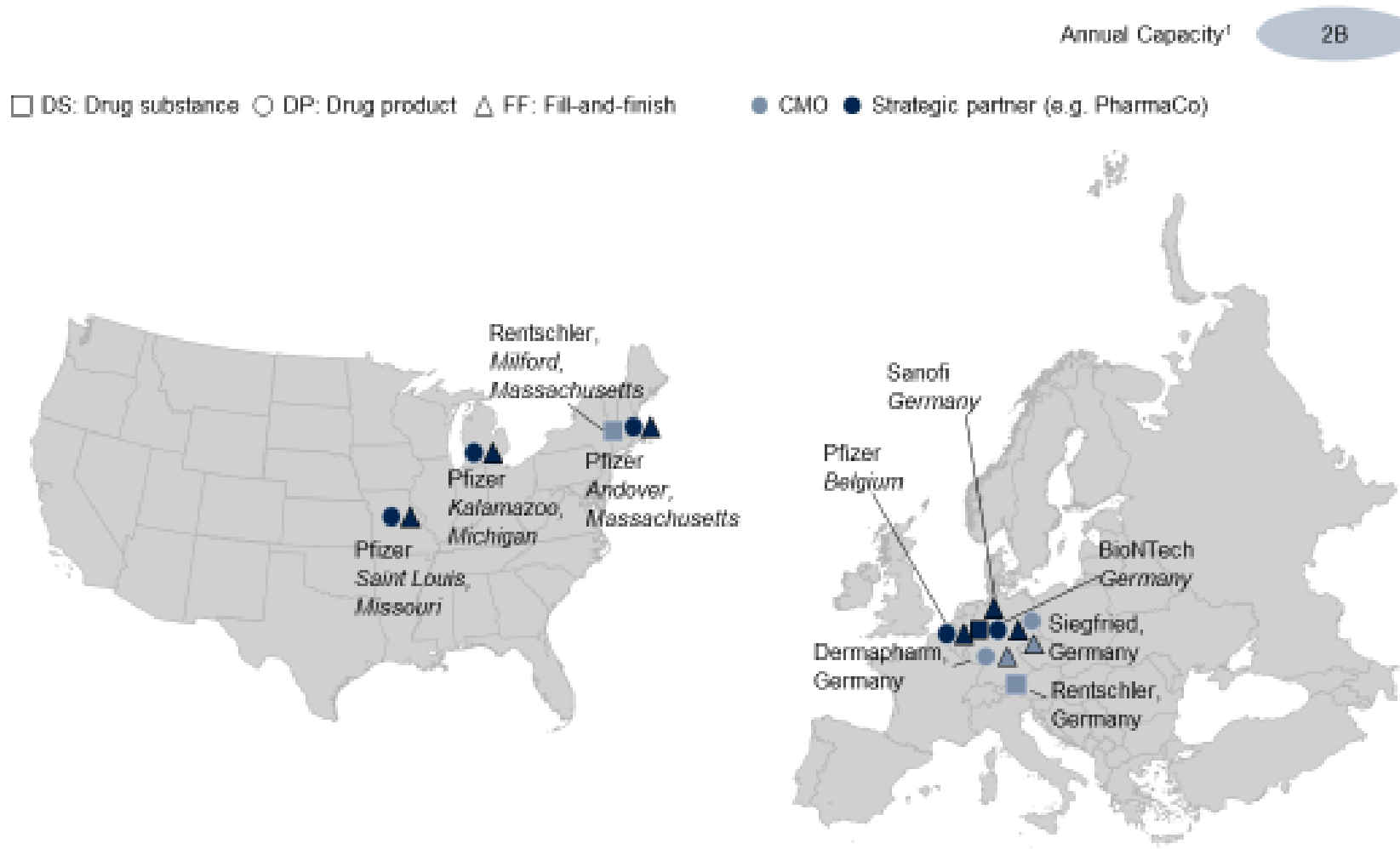
EXAMPLES FOR ILLUSTRATION PURPOSES ONLY



Annualised Capacity by YE 2021

Partner	Location	Capacity	New or existing
Vibologics	Cuxhaven, Germany	Many thousands of doses	Refit/repurposed
Biological E	Acom, India	165M	Refit/repurposed
Emergent BioSolutions	Baltimore, MD, USA	Not disclosed	New plant
Aspen (Pharmaceutical)	Port Elizabeth, South Africa	300M	Refit/repurposed
Grand River Aseptic Manufacturing	Grand Rapids, MI, USA	Not disclosed	Existing
Catalent	Bloomington, IN, USA; Anagni, Italy	Not disclosed	Existing

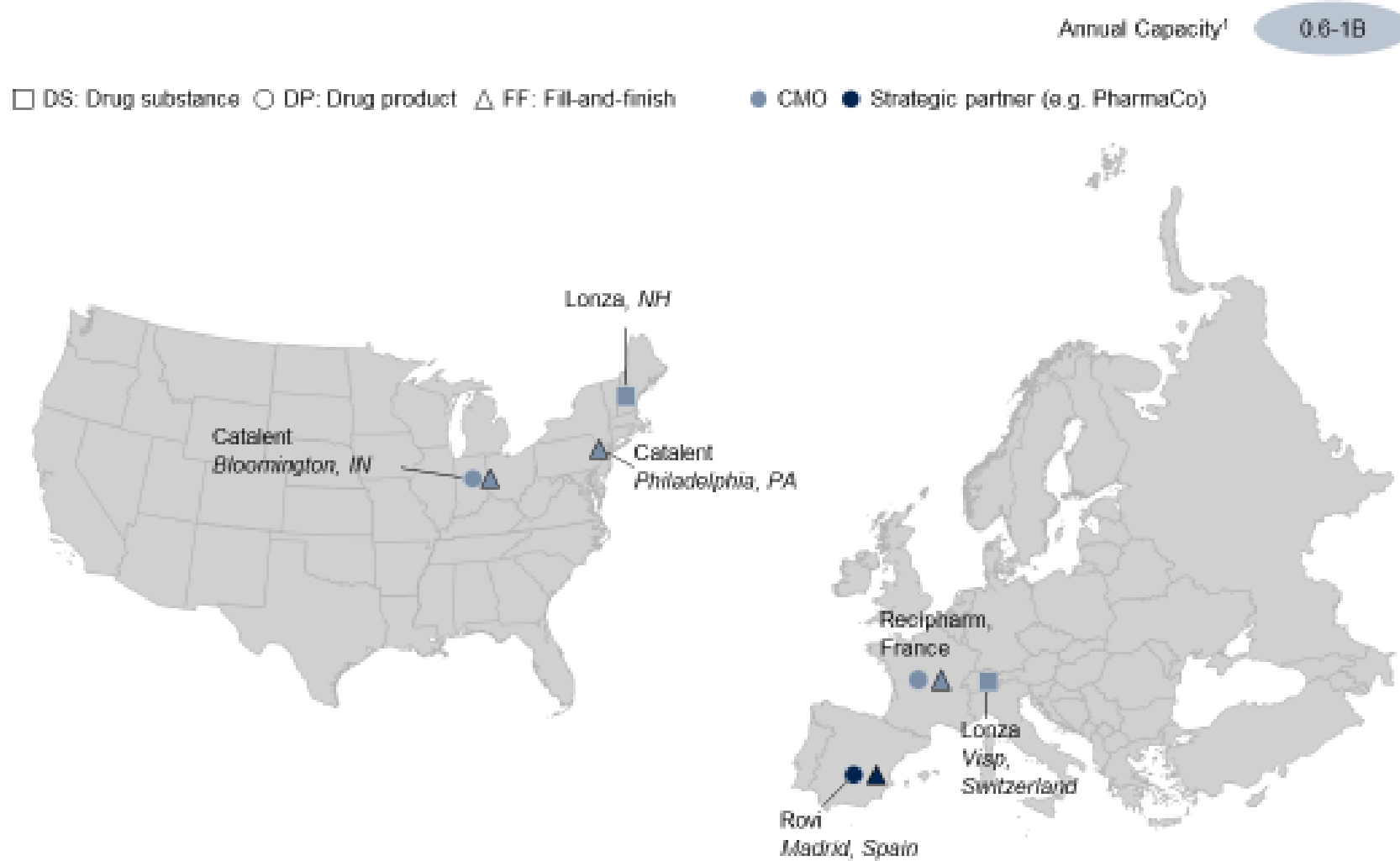
Known Vaccine Manufacturing Capacity – BioNTech/Pfizer



Annualised Capacity by YE 2021

Partner	Location	Capacity	New or existing
Pfizer	Saint Louis, MO, USA;	1.3B	Refit/repurposed
	Andover, MA, USA;		
	Kalamazoo, MI, USA;		
	Puurs, Belgium;		
BioNTech	Marburg, Germany	750m	New purchase
Sanofi	Frankfurt, Germany	125m	Refit/repurposed
Rentschler	Laupheim, Germany;	Not disclosed	Refit/repurposed
	Milford, MA, USA		
Siegfried	Hamel, Germany	Not disclosed	Refit/repurposed
Derma-pharm	Brehna, Germany	Not disclosed	Refit/repurposed
Polymun	Not disclosed	Not disclosed	Refit/repurposed

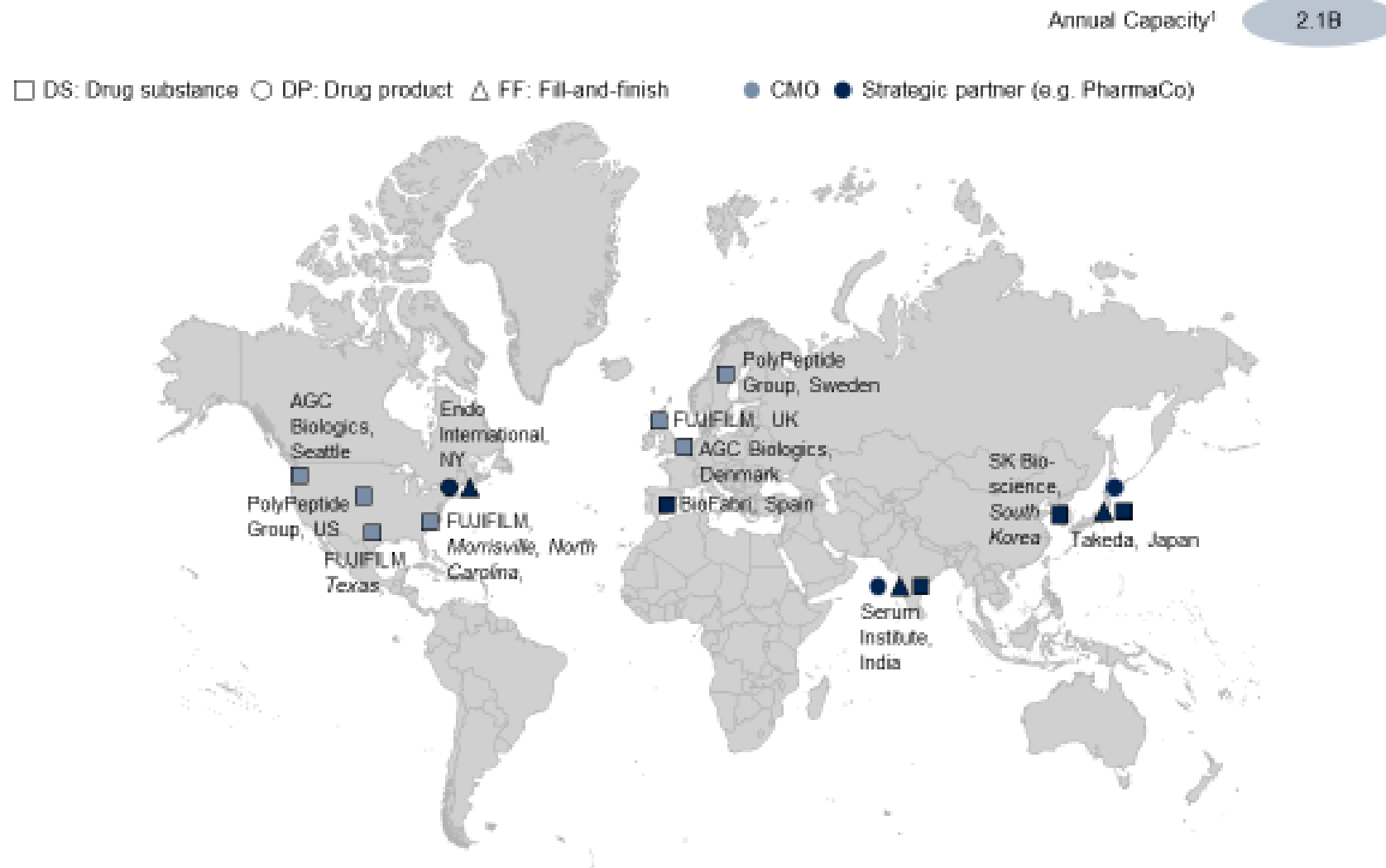
Known Vaccine Manufacturing Capacity – Moderna



Annualised Capacity by YE 2021

Partner	Location	Capacity	New or existing
Lonza	Visp, Switzerland	300M	Refit/repurposed
Lonza	NH, USA	100M	Refit/repurposed
Catalent	Bloomington, IN, USA;	100M	Refit/repurposed
	Philadelphia, PA, USA (packaging and labeling)		Philadelphia, PA is Existing
Rovi	Madrid, Spain	Hundreds of millions	Refit/repurposed
Recipharm	Monts, France	Not disclosed	Refit/repurposed

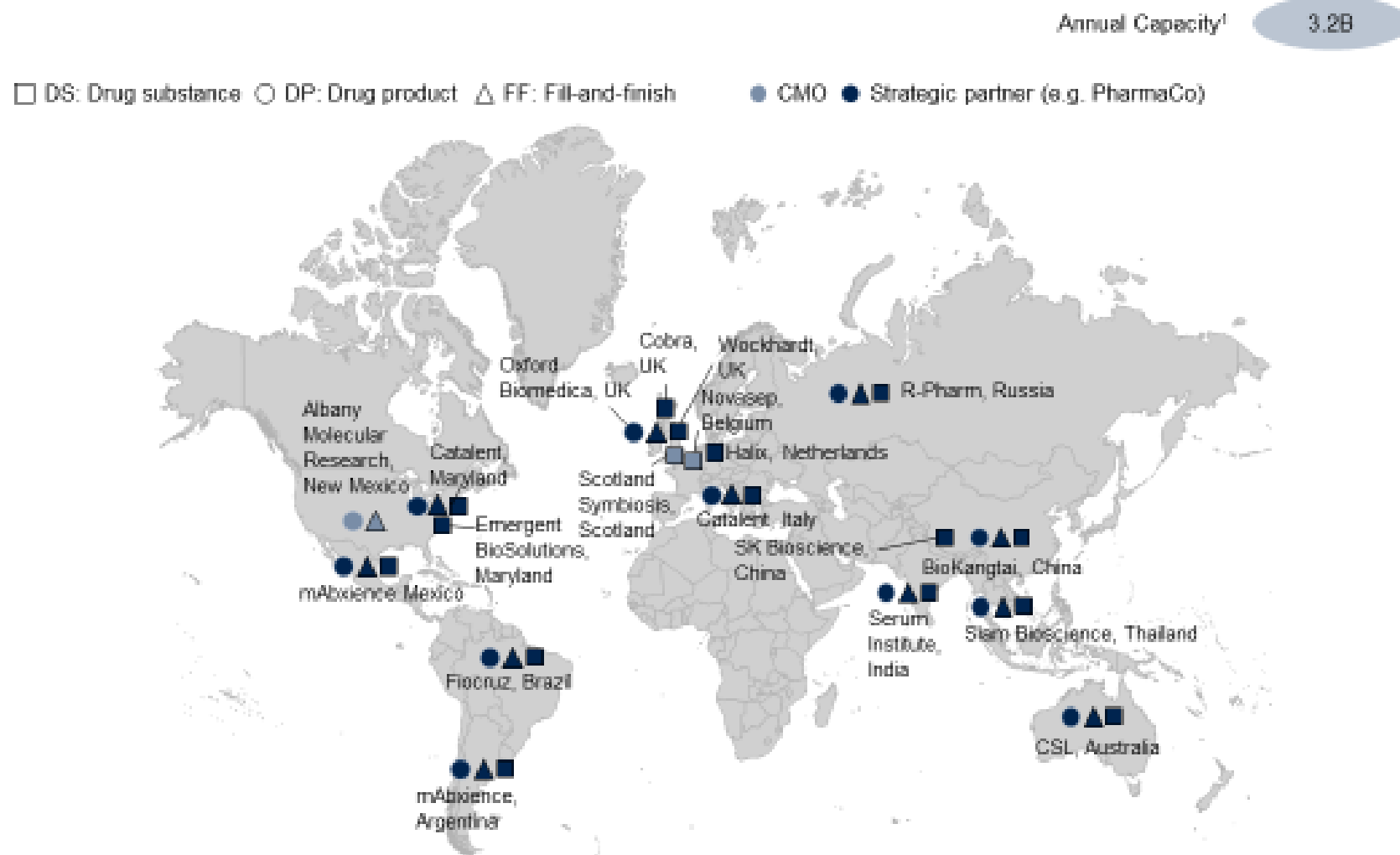
Known Vaccine Manufacturing Capacity – Novavax



Annualised Capacity by YE 2021

Partner	Location	Capacity	New or existing
Takeda	Japan	250M	Refit/ repurposed
Serum Institute of India	Pune, India	1B	Refit/ repurposed
FUJIFILM	Morrisville, NC, USA; Texas, USA; UK	US: 100M UK: 180M	Existing
SK Bioscience	Andong L-house, South Korea	Not disclosed	N/A
Biofabri	Spain	Not disclosed	N/A
PolyPeptide Group	US; Sweden	Not disclosed	N/A
AGC Biologics	Denmark; Seattle, USA	Not disclosed	N/A
Endo International	Rochester, NY, USA	Not disclosed	N/A

Known Vaccine Manufacturing Capacity – AstraZeneca²



Annualised Capacity by YE 2021

Partner	Location	Capacity	New or existing
Scotland Symbiosis	Stirling, Scotland	Not disclosed	N/A
Serum Institute	India	1B	Repurposed
BiKangtai	China	200M	N/A
Siam Bioscience	Thailand	Not disclosed	N/A
R-Pharm	Moscow, Russia	Not disclosed	N/A
Fiocruz	Brazil	480M	N/A
CSL	Australia	30M	Existing
mAbience	Argentina; Mexico	200M	N/A
Emergent BioSolutions	Baltimore, MD, USA	Hundreds of millions of doses	New
Cobra	Newcastle, UK	12M	N/A
Halix	Netherlands	Not disclosed	N/A
Oxford Biomedica	Oxford, UK	Not disclosed	Existing
Catalent	Hammans, MD, USA; Anagni, Italy	Not disclosed	Existing
Novasep	Senefte, Belgium	Not disclosed	Existing
SK Bioscience	Andong, China	Not disclosed	N/A
Albany Molecular Research	Albuquerque, NM, USA	Millions of doses	N/A
Woichardt	North Wales, UK	100M	N/A

¹ For COVID-19 vaccine production; no other mRNA vaccines are currently commercially available

² Reported agreements with 20 contract manufacturing organisations in July 30, 2020 H1 earnings call