

From discovery to delivery:

Navigating partnerships and infrastructure needs

Debby Vermeer

3 June 2025

Agenda

- Introduction
- Drug development cycle
- Interactive discussion on partnerships
- 4DM tool
- Closing summary

MOLECULE 2 BUSINESS EVENT

Next level collaboration | 3 June 2025 | Novitech Campus

SPEAKER: DEBBY VERMEER-KRUIJSEN

Owner DVK biotech and project lead gap analysis Pivot Park



**From discovery to
delivery: Navigating
partnerships and
infrastructure needs**



Powered by
NL Health~Holland



Who am I

- Independent Biotech Consultant, DVK Biotech
 - Project Manager 4DM gap analysis
 - Executive Board Member Oncode Accelerator Workstream Biologics
 - Strategic Alliances Support
 - Biotech Management Support

2006-2023


- General Manager, IPA Therapeutics
- Diverse Project Management/scientific roles, IPA Therapeutics
- PhD, WKZ Utrecht

Europe's foremost biopharmaceutical campus

Navigating partnerships and infrastructure needs

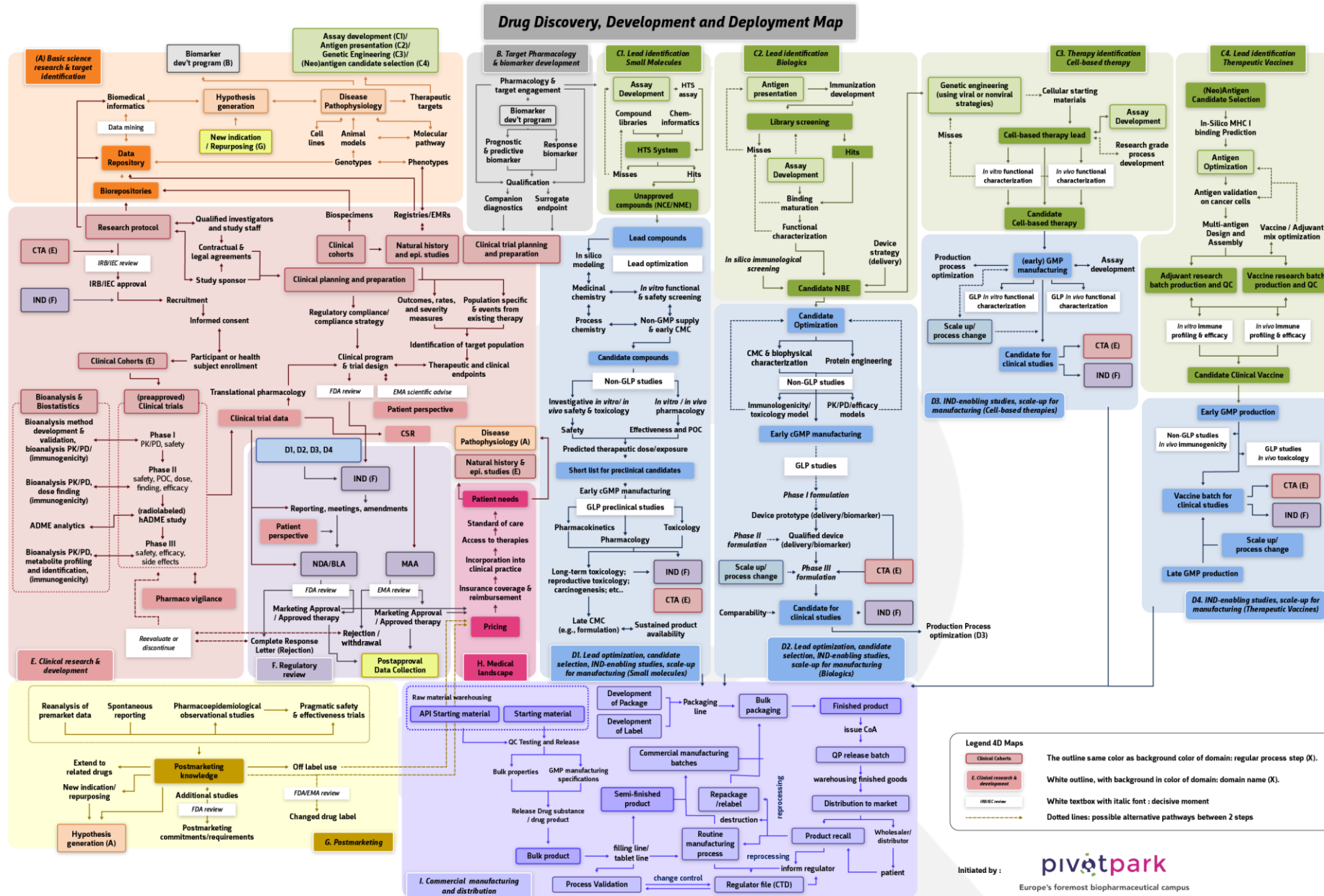
- Growing your business via outsourcing, alliances, joint ventures, acquisitions all require partner search and analysis
- How to find the best partner for your business (partner assessment)
 - Company culture
 - Infrastructure and knowledge
- **Landscape analysis for potential partners**

Navigating partnerships and infrastructure needs

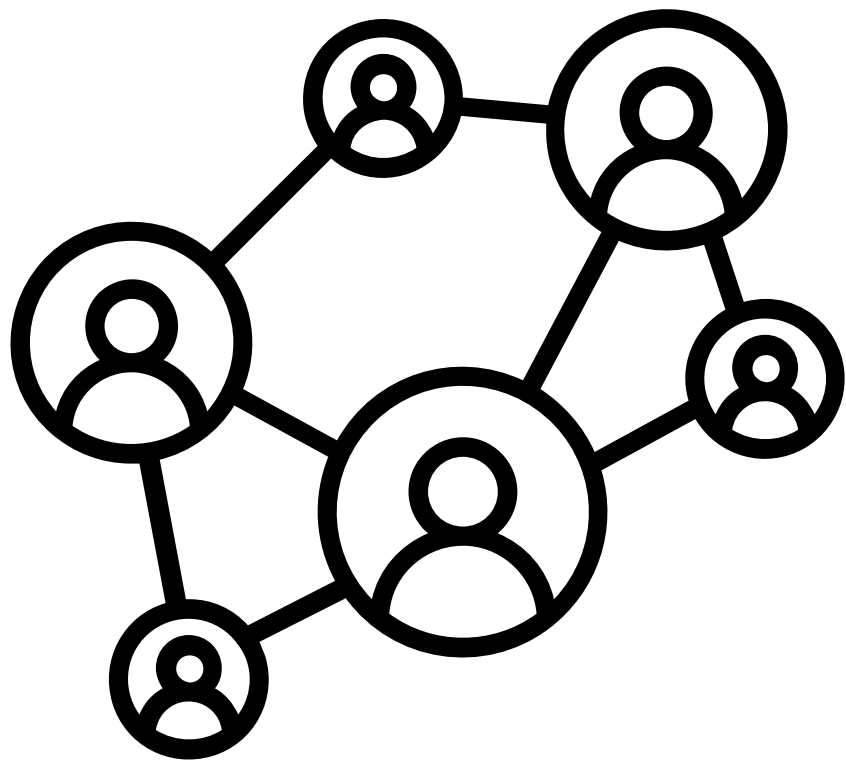
- Molecule 2 Business - Drug Discovery and Development
 - Academia
 - Start-Ups 
 - Small to Medium Biotech
 - Large Biotech
 - Pharma

Drug Development Cycle

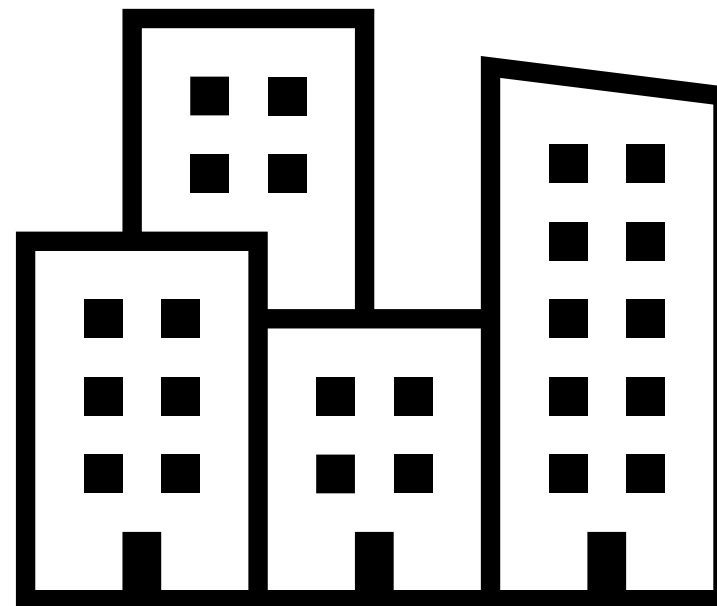




Knowledge



Infrastructure



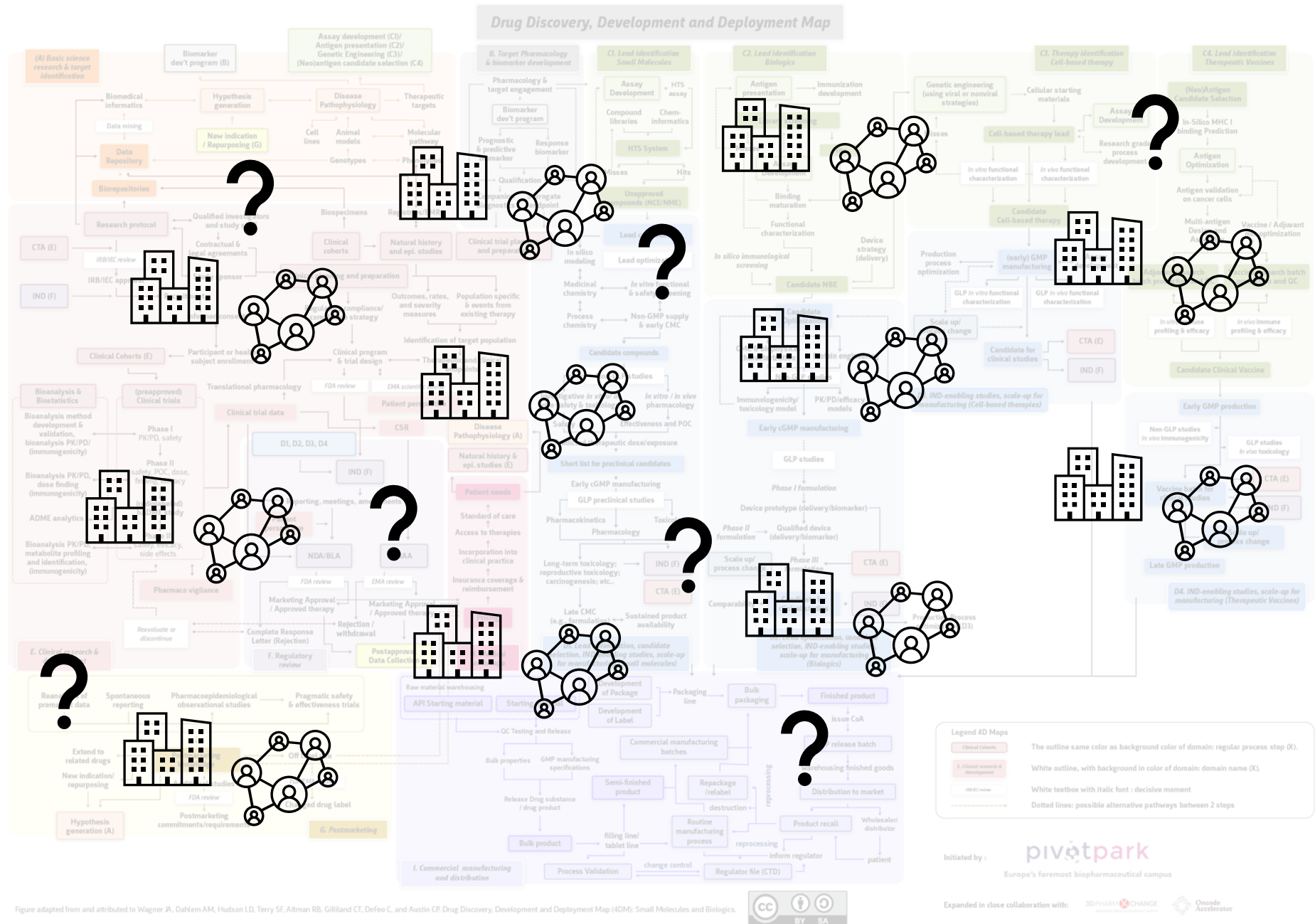


Figure adapted from and attributed to Wagner JA, Dahlem AM, Hudson LD, Terry SF, Altman RB, Gilliland CT, Defeo C, and Austin CP: Drug Discovery, Development and Deployment Map (4DM): Small Molecules and Biologics.

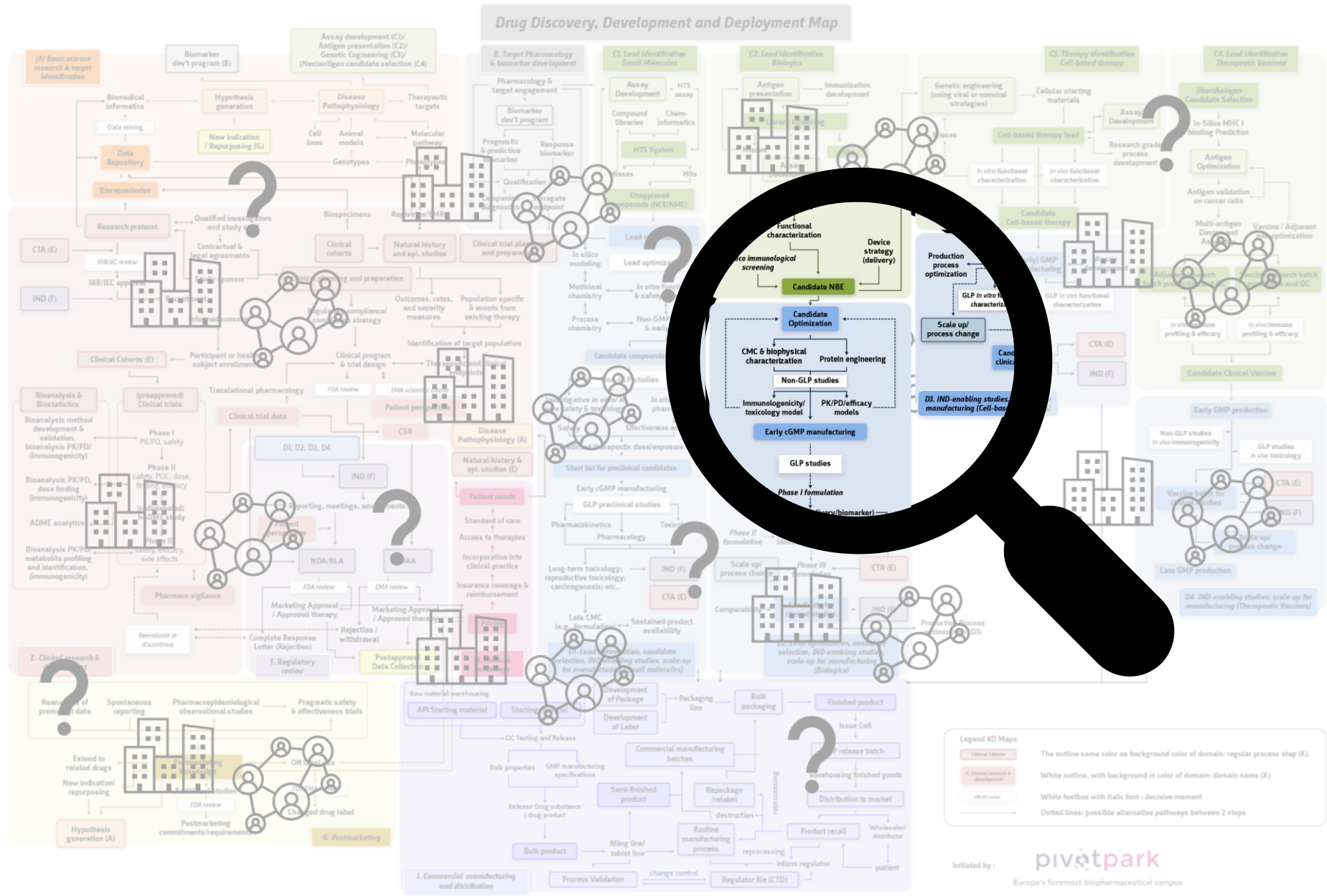


Figure adapted from and attributed to Wagner JA, Dahlem AM, Hudson LD, Terry SF, Altman RB, Gilliland CT, Defeo C, and Austin CP. Drug Discovery, Development and Deployment Map (4DM): Small Molecules and Biologics.



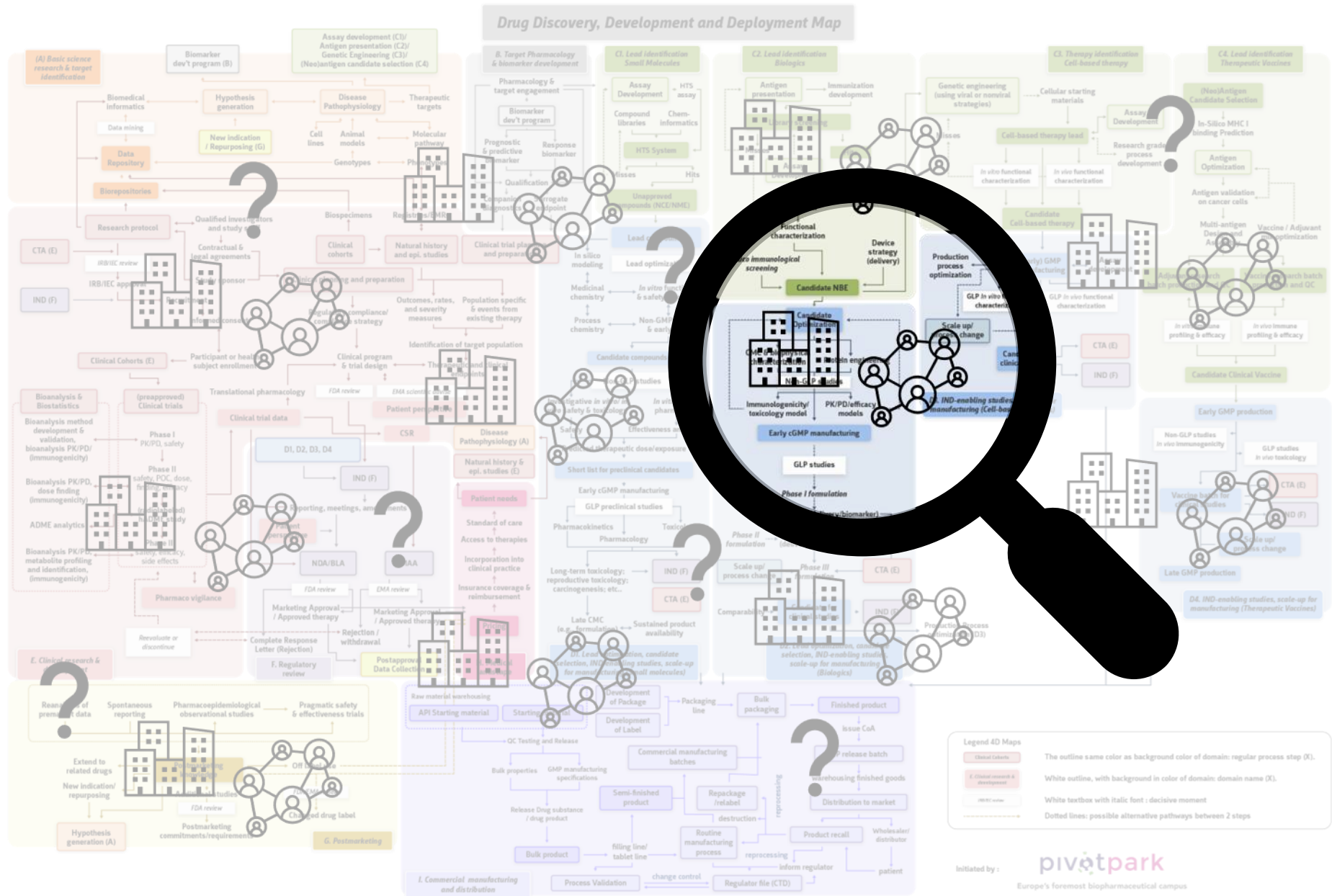
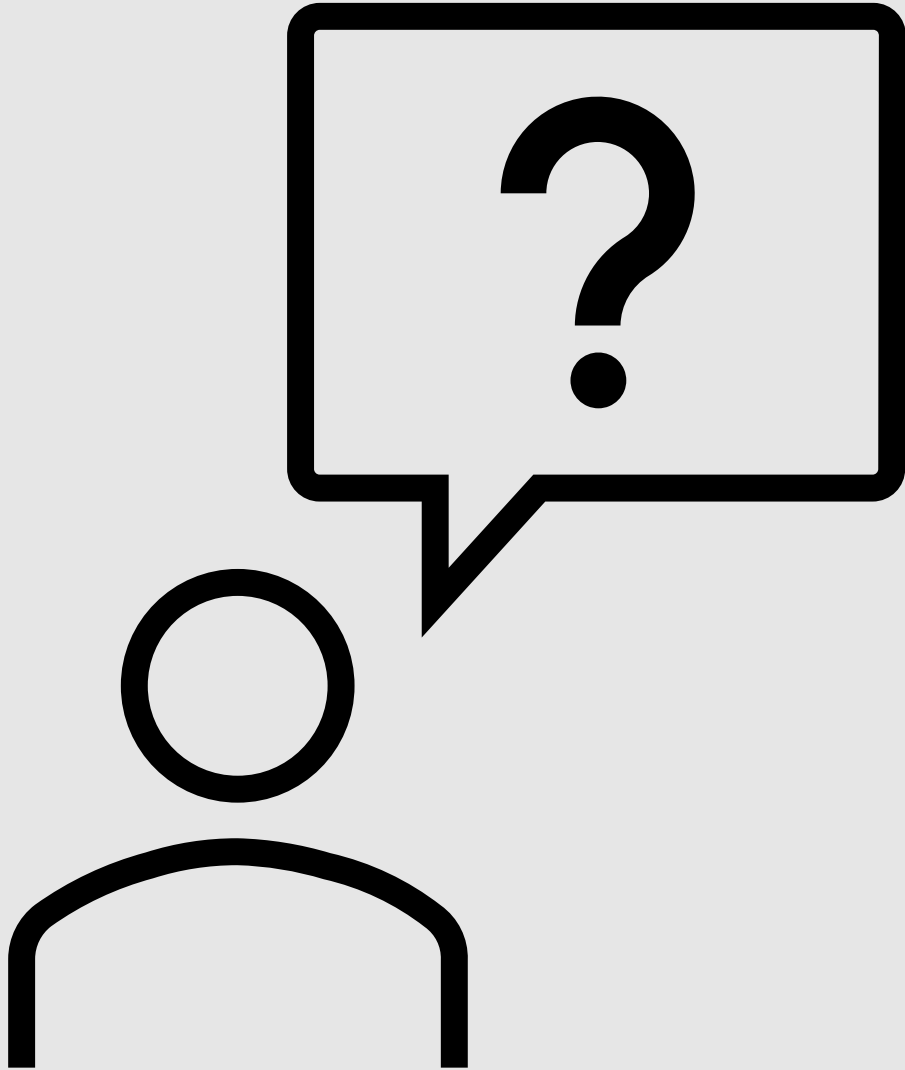
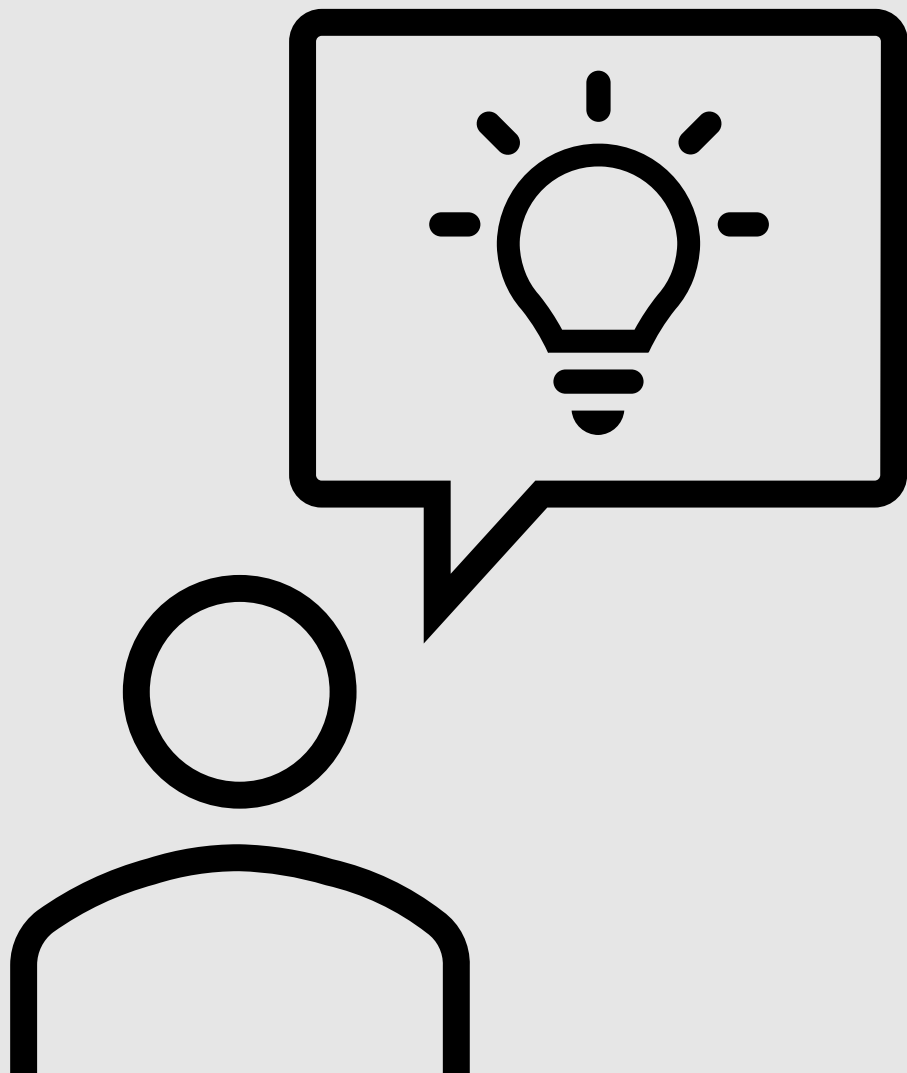


Figure adapted from and attributed to Wagner JA, Dahlem AM, Hudson LD, Terry SF, Altman RB, Gilliland CT, Defeo C, and Austin CP. Drug Discovery, Development and Deployment Map (4DM): Small Molecules and Biologics.



**Navigating the landscape for the
ideal partner**

**How do you search for your
ideal partner?**



4DM

The interactive pharma gap
analysis software tool bringing
together relevant
partners/clients/service providers

Select organization

Organization *

Accon

Match and Message settings

Equipment / Buildings & spaces /
Materials & libraries / Software &
models

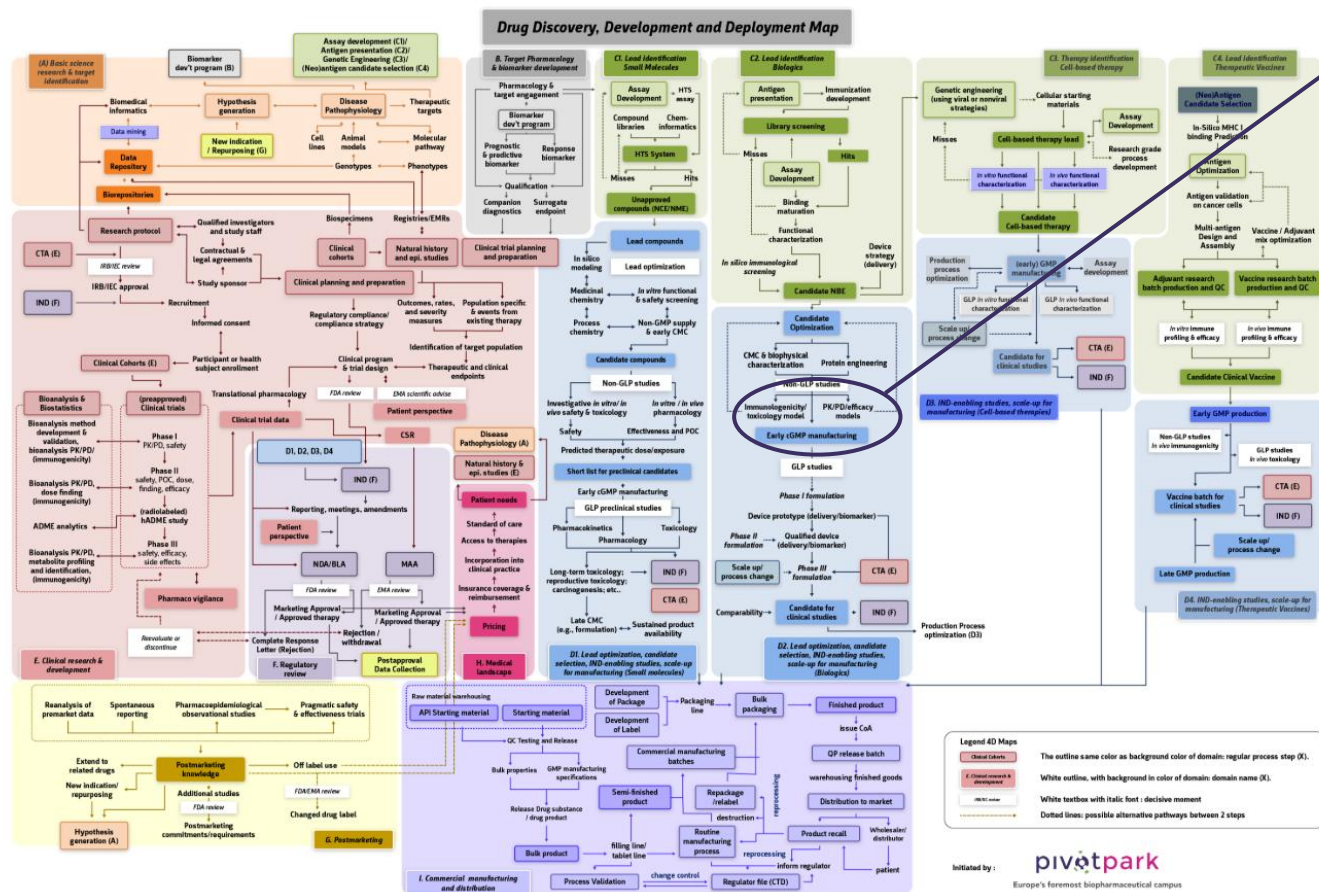


Figure adapted from and attributed to Warner, J., DaHem AM, Hudson LD, Terry SF, Altman RB, Gilliland CT, DeFee C, and Austin CP Drug Discovery, Development and Deployment Map (4DM): Small Molecules and Biologics.

Select domain and process step

Domain *

D2. Lead optimization, candidate selection, IND-enabling studies, scale-up for manufacturing × ▾

Process step

Early cGMP manufacturing

Copy answers from a previous entry

The organization is currently outsourcing the work in this process step to CRO(s), CDMO(s), CMO(s) or vendor(s).

☐ no ☐ yes

The process step is part of the organization's core activity.

☐ no ☒ yes

The organization's involvement in this process step has increased over the last 12 months.

☐ no ☐ yes

The organization's involvement in this process step is expected to increase over the next 12 months.

☐ no ☐ yes

How many FTE in your organization are dedicated to this process step?

Which education levels are required for this process step?

☐ MBO ☐ HBO ☐ WO ☐ PHD

How do employees learn additional skills/knowledge required for this process step?

Please add your comments below

Would you like to change the way employees learn about additional skills/knowledge of this process step in the future?

☐ no ☒ yes ☐ n/a

Are there emerging technologies used in this process step that you think we should bring to / strengthen in the Netherlands?

☐ no ☐ yes ☒

Does the organization currently have the necessary future-proof infrastructure to execute this process step?

Buildings/Space

☐ no ☐ yes 

Which buildings/space types are currently available to your organisation

Metric

Companies that need equipment or machines and are willing to share

Distance: max

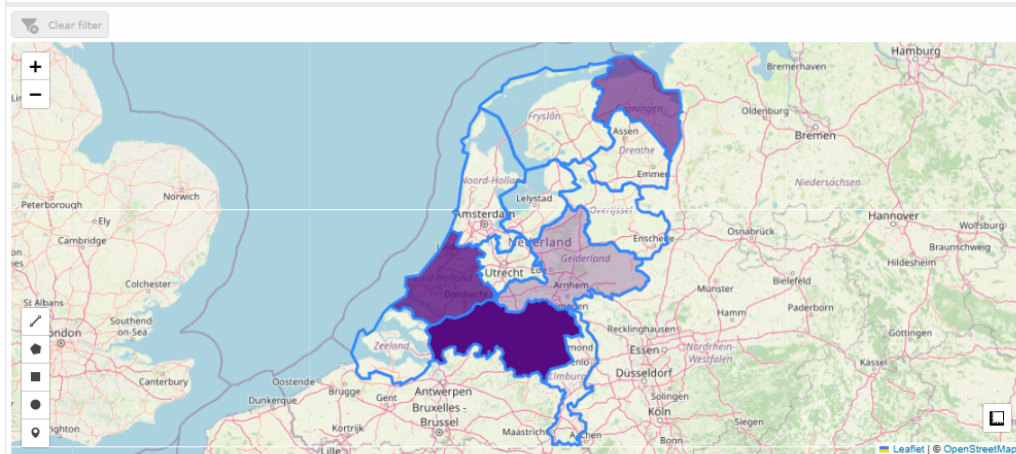
Select...

km from ZIP code

9999

Groups

Nederland



Equipment / machines needed and shareable (# companies)

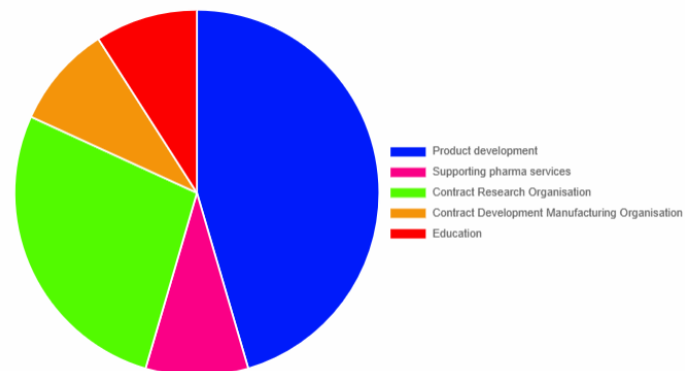
Clear filter

Description	#
Microscope	1
NMR	1
Flow Cytometry	1
Mass Spectrometry	1
Cabinets & Cleanrooms	1
Microplate reader	1
PCR	1
Cell Imaging	1
Centrifuge	1
Liquid Chromatography Mass Spectrometry (LC - MS)	1
HPLC Chromatography	1
Incubator	1
Refrigerators & Freezers	1
Surface Plasmon Resonance	1
Ultra Performance Liquid Chromatography	1
Bioreactor	1

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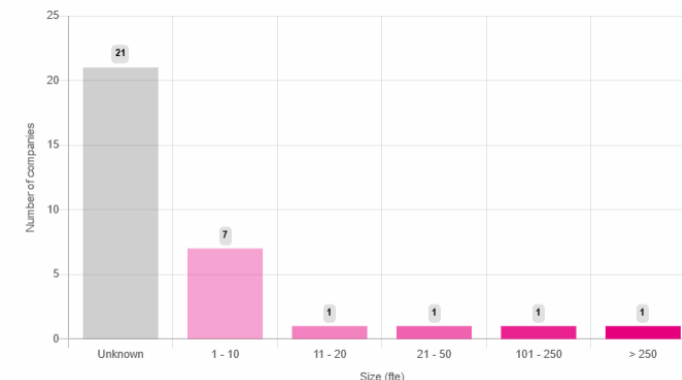
Company types

Clear filter



Company size

Clear filter

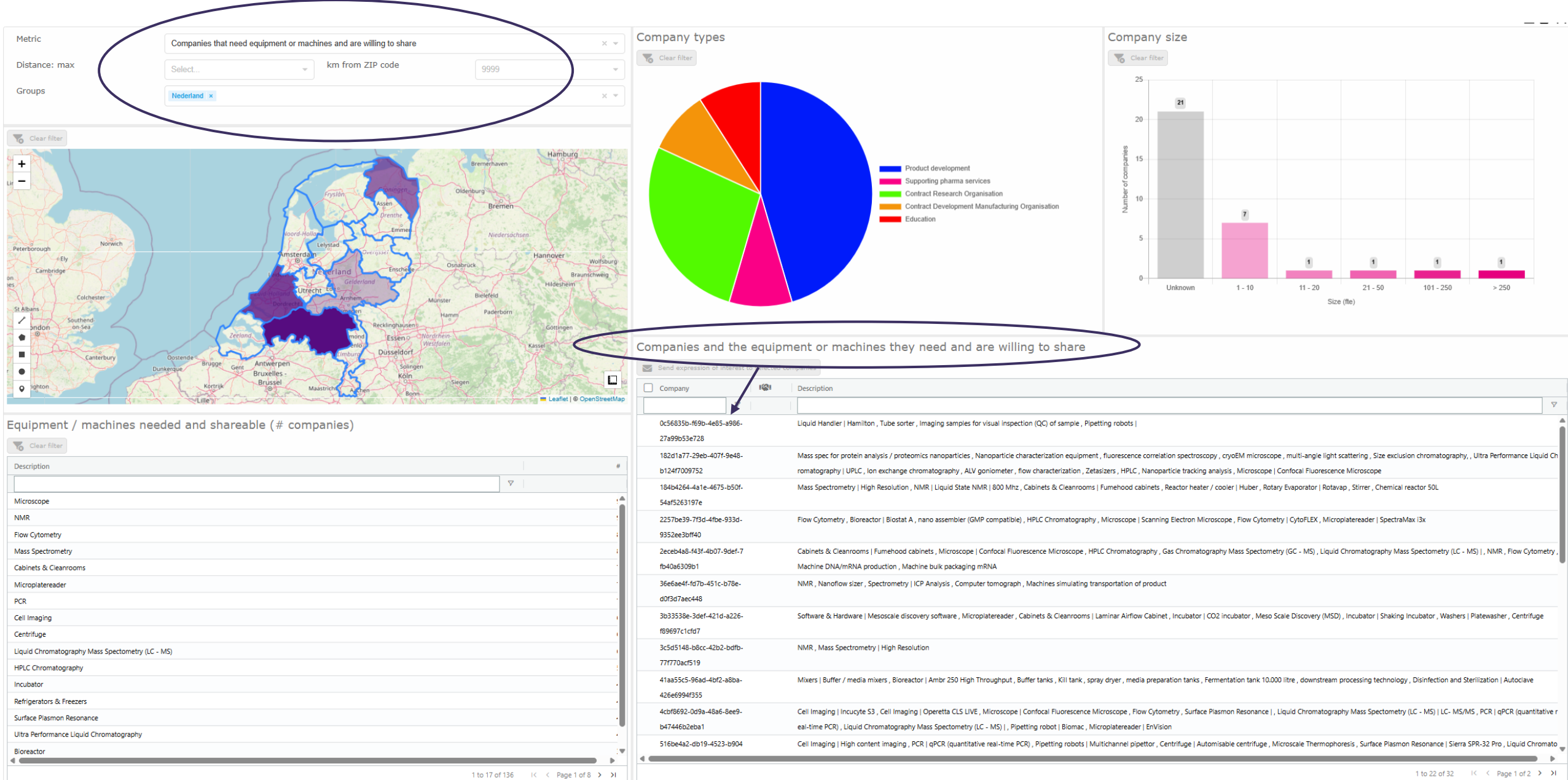


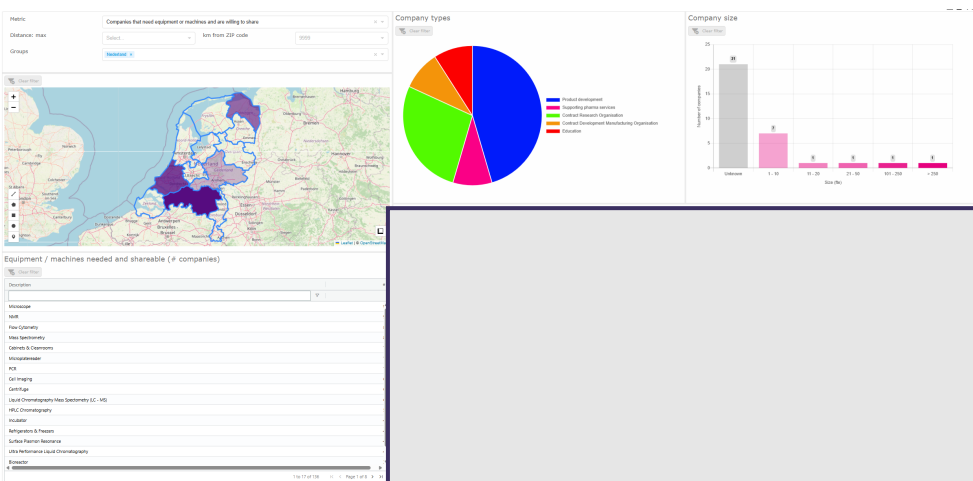
Companies and the equipment or machines they need and are willing to share

Send expression of interest to selected companies

Company	Description
0c56835b-f69b-4e85-a986-27a99b53e728	Liquid Handler Hamilton, Tube sorter, Imaging samples for visual inspection (QC) of sample, Pipetting robots
182d1a77-29eb-407f-9e48-b1247f009752	Mass spec for protein analysis / proteomics nanoparticles, Nanoparticle characterization equipment, fluorescence correlation spectroscopy, cryoEM microscope, multi-angle light scattering, Size exclusion chromatography, Ultra Performance Liquid Chromatography UPLC, Ion exchange chromatography, ALV goniometer, flow characterization, Zetasizers, HPLC, Nanoparticle tracking analysis, Microscope Confocal Fluorescence Microscope
184b4264-4a1e-4675-b50f-54af5263197e	Mass Spectrometry High Resolution, NMR Liquid State NMR 800 Mhz, Cabinets & Cleanrooms Fumehood cabinets, Reactor heater / cooler Huber, Rotary Evaporator Rotavap, Stirrer, Chemical reactor 50L
2257be39-7f3d-4fbc-933d-9352ee3bffa0	Flow Cytometry, Bioreactor Biostat A, nano assembler (GMP compatible), HPLC Chromatography, Microscope Scanning Electron Microscope, Flow Cytometry CytoFLEX, Microplate reader SpectraMax i3x
2eceb4a8-f43f-4b07-9def-7fb40a6309b1	Cabinets & Cleanrooms Fumehood cabinets, Microscope Confocal Fluorescence Microscope, HPLC Chromatography, Gas Chromatography Mass Spectrometry (GC - MS), Liquid Chromatography Mass Spectrometry (LC - MS) , NMR, Flow Cytometry, Machine DNA/mRNA production, Machine bulk packaging mRNA
36e6ae4f-fd7b-451c-b78e-d0f3d7aec448	NMR, Nanoflow size, Spectrometry ICP Analysis, Computer tomograph, Machines simulating transportation of product
3b35338e-3def-421d-a226-f89697c1cfd7	Software & Hardware Mesoscale discovery software, Microplate reader, Cabinets & Cleanrooms Laminar Airflow Cabinet, Incubator CO2 Incubator, Meso Scale Discovery (MSD), Incubator Shaking Incubator, Washers Platemasher, Centrifuge
3c5d5148-b8cc-42b2-bdfe-77f770ac5f19	NMR, Mass Spectrometry High Resolution
41aa55c5-96ad-4bf2-a8ba-426e6994f355	Mixers Buffer / media mixers, Bioreactor Ambr 250 High Throughput, Buffer tanks, Kill tank, spray dryer, media preparation tanks, Fermentation tank 10.000 litre, downstream processing technology, Disinfection and Sterilization Autoclave
4cbf6892-d9a-48a6-8ee9-b47446b2eba1	Cell Imaging Incucyte S3, Cell Imaging Operetta CLS LIVE, Microscope Confocal Fluorescence Microscope, Flow Cytometry, Surface Plasmon Resonance , Liquid Chromatography Mass Spectrometry (LC - MS) LC- MS/MS, PCR qPCR (quantitative real-time PCR), Liquid Chromatography Mass Spectrometry (LC - MS) , Pipetting robot Biomac, Microplate reader EnVision
516be4a2-d019-4523-b904	Cell Imaging High content imaging, PCR qPCR (quantitative real-time PCR), Pipetting robots Multichannel pipettor, Centrifuge Automisable centrifuge, Microscale Thermophoresis, Surface Plasmon Resonance Sierra SPR-32 Pro, Liquid Chromatography

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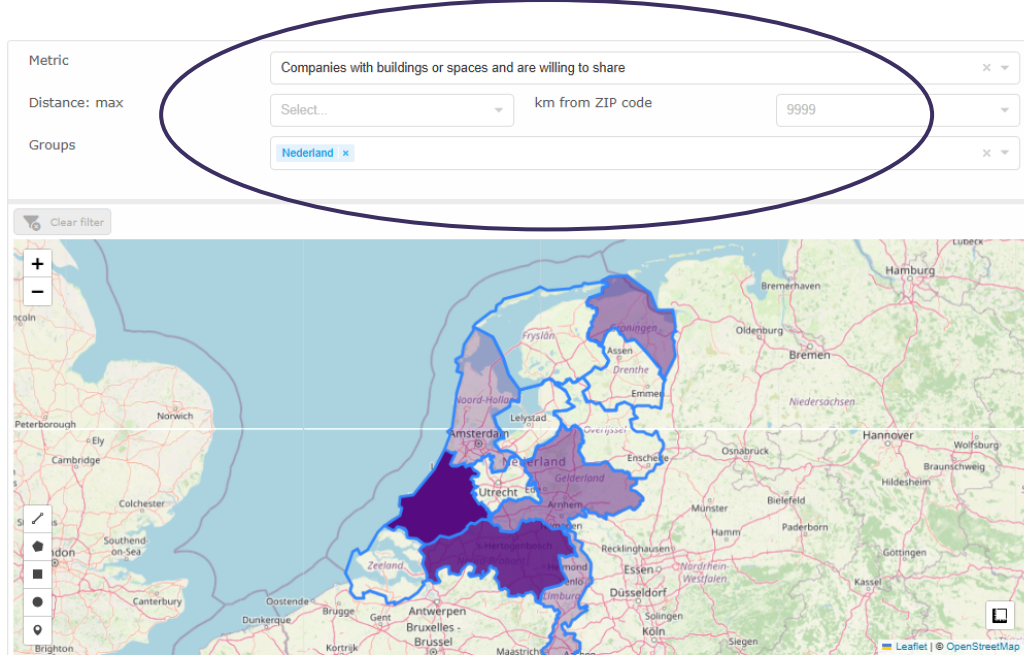


Match and Message

Companies and the equipment and machines they need

☒ Send expression of interest to selected companies

Company	Description
184b264-4a1e-4675-b50f-54af5263197e	Mass Spectrometry High Resolution , NMR Liquid State NMR 800 Mhz , Cabinets & Cleanrooms Fumehood cabinets , Reactor heater / cooler Huber , Rotary Evaporator Rotavap , Stirrer , Chemical reactor 50L
2eceb4a8-f43f-4b07-9def-7fb40a6309b1	Cabinets & Cleanrooms Fumehood cabinets , Microscope Confocal Fluorescence Microscope , HPLC Chromatography , Gas Chromatography Mass Spectrometry (GC - MS) , Liquid Chromatography Mass Spectrometry (LC - MS) , NMR , Flow Cytometry , Machine DNA/mRNA production , Machine bulk packaging mRNA
36e6ae4f-fd7b-451c-b78e-d0f3d7aec448	NMR , Nanoflow sizer , Spectrometry ICP Analysis , Computer tomograph , Machines simulating transportation of product
3c5d5148-b8cc-42b2-bdfb-77f770acf519	NMR , Mass Spectrometry High Resolution
52c2795e-6ead-4bda-886c-6287685178ad	Liquid Chromatography Mass Spectrometry (LC - MS) , Flow Cytometry , NMR
6848dfc4-a973-4a4e-aa56-	Cabinets & Cleanrooms Fumehood cabinets , Incubator , Shaking plateau , Cabinets & Cleanrooms Laminar Airflow Cabinet , SDS-Page system , Centrifuge Cooled microtube (eppendorf) centrifuge , Western Blot/G



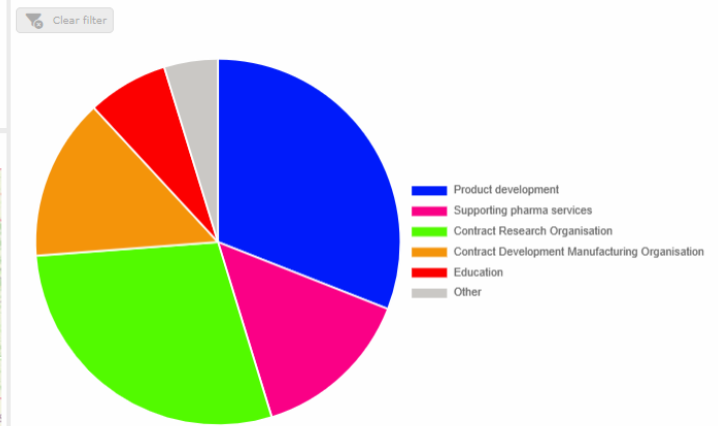
Buildings / spaces available for sharing (# companies)

Clear filter

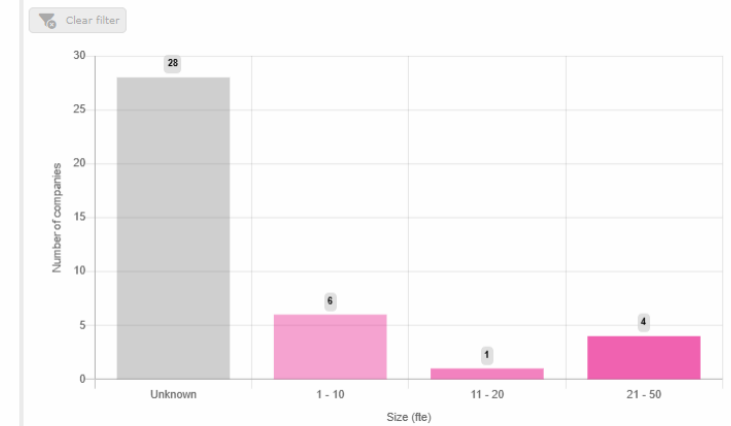
Description	#
Office space	1
Analytical lab	
ML-I Lab (Microbiological Laboratory Class I)	
Individual labs	
ML-II Lab (Microbiological Laboratory Class II)	
Chemical lab	
GMP Cleanroom	
GMP Cleanroom GMP Production facility	
GMP Cleanroom Pilot Production space	
GMP Cleanroom Small scale	
Warehouse	
production facility	
Biosafety level 1 Laboratory (BSL-1)	
Biosafety level 2 Laboratory (BSL-2)	
Engineering rooms / labs	
GMP Cleanroom GMP certification	

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Company types



Company size



Companies with available buildings or spaces for sharing

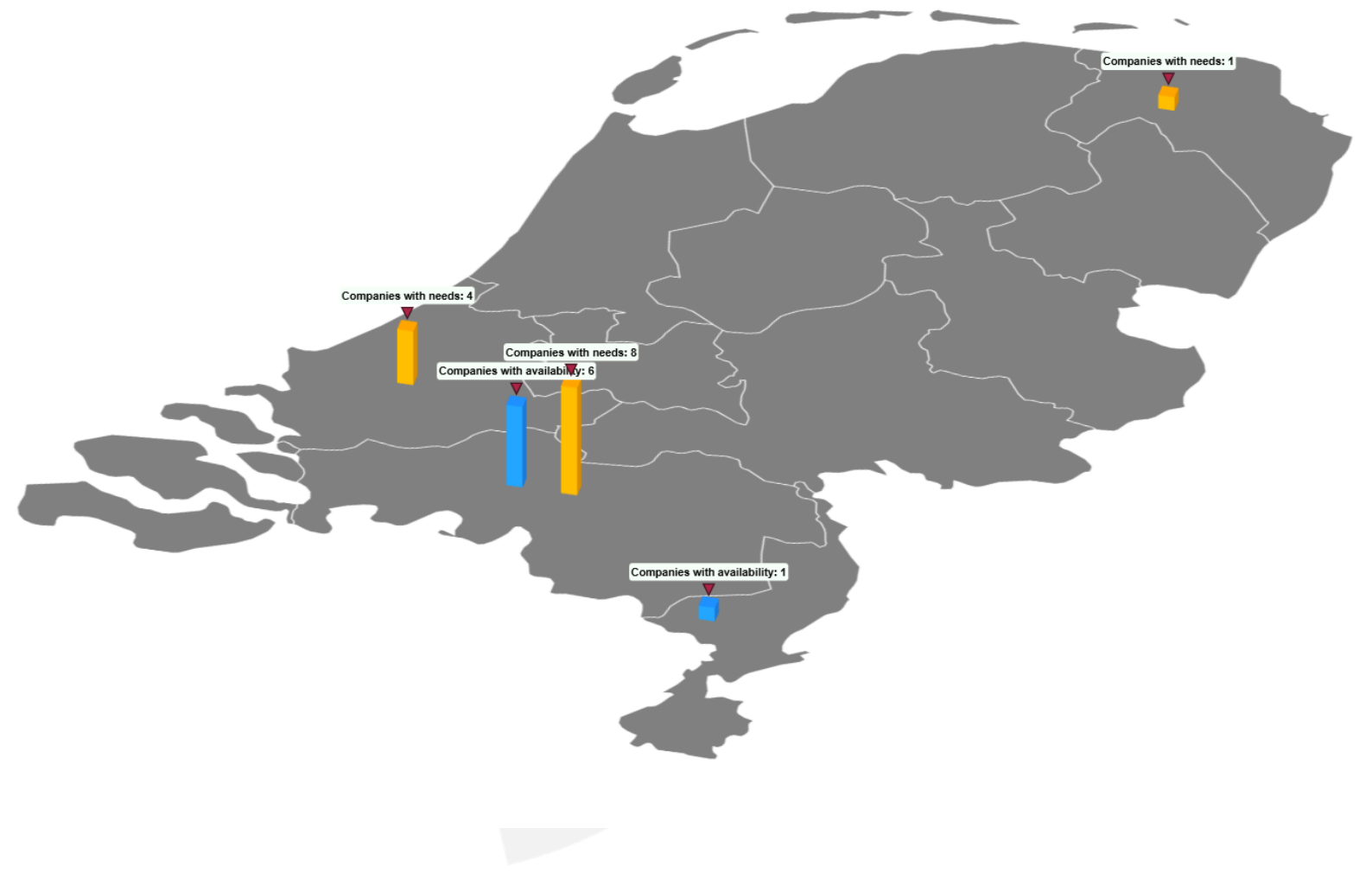
Send expression of interest to selected companies

Company	Description
14fb9e69-2085-4ae2-b88c-37d9f053886b	Office space, ML-II Lab (Microbiological Laboratory Class II), Individual labs, microscopic rooms
25e6221e-2ccf-457a-9066-acd9ec7169b1	MS-facility, NMR-facility, Nanomedicine-Characterization facility
2be556e6-681a-4d72-ae07-f52955fdc476	GMP Cleanroom GMP regulated cleanroom (Class A / B)
3b33538e-3def-421d-a226-f89697c1cfd7	Office space, Biosafety level 1 Laboratory (BSL-1), Biosafety level 3 Laboratory (BSL-3)
3c5d5148-b8cc-42b2-bdfb-77f770acf519	GMP Cleanroom Pilot Production space, Individual labs, Analytical lab, Office space
401424f2-a762-4eaf-8ceb-6734d3defd67	ML-I Lab (Microbiological Laboratory Class I), Office space, ML-II Lab (Microbiological Laboratory Class II), Analytical lab, combi pal, Chemical lab, Meeting room, storage space, more m2 labs and additional offices
41aa55c5-96ad-4bf2-a8ba-426e6994f355	ML-I Lab (Microbiological Laboratory Class I)
49e24409-6e18-400c-b856-f33e43676ce8	Chemical lab, GMP Cleanroom GMP labs, GMP Cleanroom Pilot Production space, GMP Cleanroom Small scale
4cbf6692-0d9a-48a6-8ee9-b47446b2eba1	Office space, ML-I Lab (Microbiological Laboratory Class I)
52c2795e-6ead-4bda-886c-6287685178ad	offices, ML-II Lab (Microbiological Laboratory Class II), Analytical lab, Regular Lab, cell imaging
5bca78e3-6058-4cad-ad73-	ML-I Lab (Microbiological Laboratory Class I), Office space

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Equipment types *

- Liquid Chromatography Mass Spectrometry (LC - MS) x
- Gas Chromatography Mass Spectrometry (GC - MS) x
- HPLC Chromatography x



Potential matches

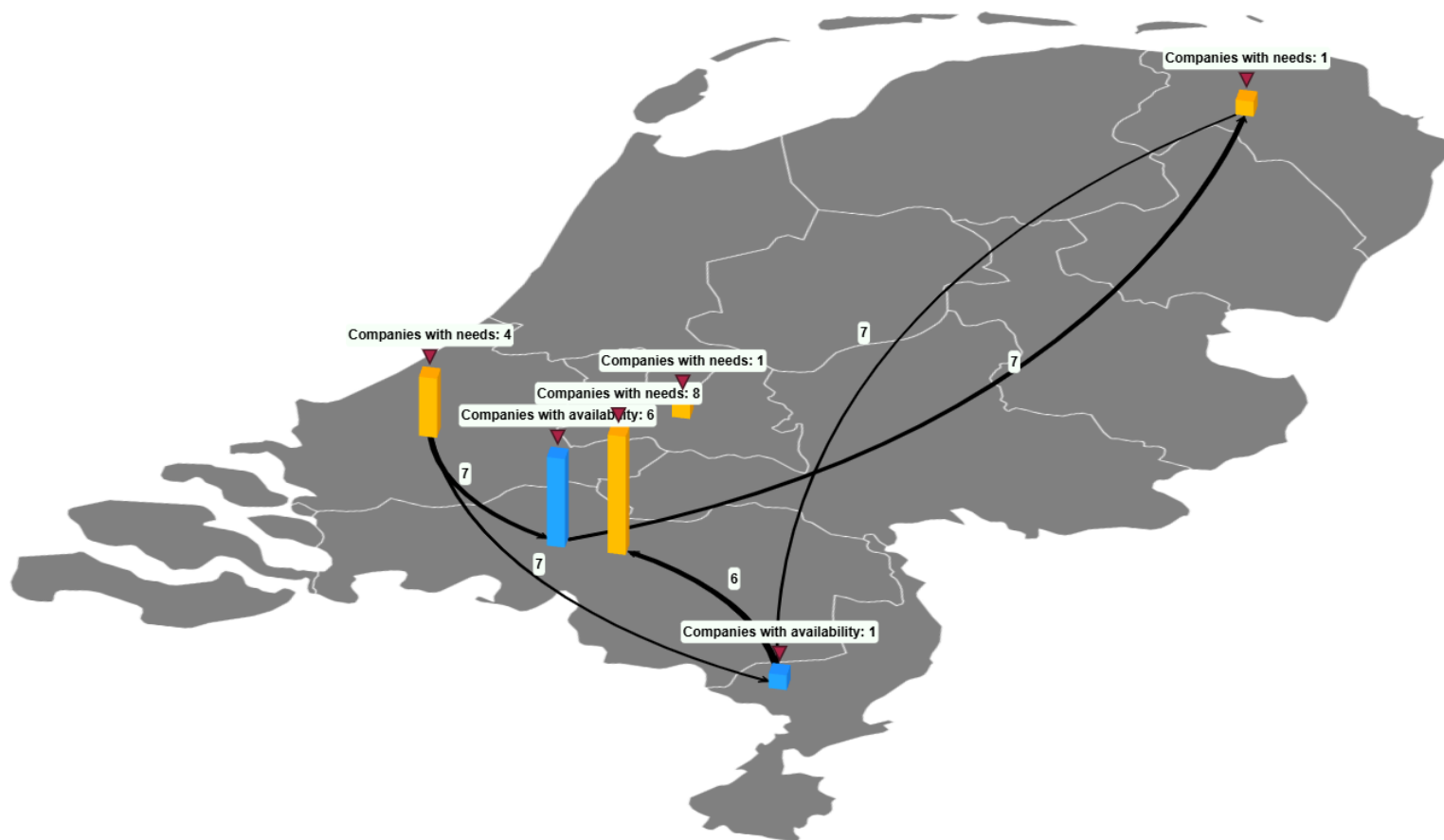
Equipment types *

- Gas Chromatography Mass Spectrometry (GC - MS) x
- Liquid Chromatography Mass Spectrometry (LC - MS) x
- HPLC Chromatography x

Company types

Select...

Equipment needs and availability



Overview

Any skills mentioned

Education levels

MBOHBOWOPHD

Domains

Select...

Groups

Nederland

Clear filter

Skill	A	B	C1	C2	C3	C4	D1	D2	D3	D4	E	F	G	H	I	Total	
	# FTE	# FTE	# FTE	# FTE	# FTE	# FTE	# FTE	# Comp.	# FTE	# FTE	# FTE	# FTE	# FTE	# FTE	# FTE	# FTE	# Comp.
Project Management	3.9						5	1	5			5				23.9	2
lead identification biologics										8						8	1
(post translational) knowledge of proteins	31						0	1								31	2
3R Implementation		27	27	27			27	1								108	1
3d culturing			1													1	1
API / Material Purchasing Google glass / bodycam visits																12	1
API / Material Purchasing Remote purchasing																12	1
API / Material Purchasing Remote vendor audits							3	1								16	2
API manufacturing							3	1								35	2
Accurate																90	1
Addition of external elements	31															31	1
Advanced Pharmacokinetics							4	1								4	1
Advanced Pharmacology	0	0					4	3	1			0				5	4
Advanced Toxicology							4	1								4	1
Advanced cellbiology for Immunology		1	4	0			8	1								13	3
Analysis Analytical Method Development	0		0	20			68	4	20							132	10
Animal Article 13F HBO / Article 9 WO				0.2			12.8	1								13	2
Animal Ethics				0.2			21.2	2								21.4	3
Animal Handling				0.2			14	1								14.2	2
Animal Metabolism							14	1								14	1
Animal Models	57.8	5		0.2			48.8	6	11			4			2	128.8	11
Animal NVWA skills and knowledge				0.2			22	1								22.2	2
Antibody purification				10	11											21	2
Antibody selection					10											10	1
Antigen design & development				0												0	1
Artificial Intelligence	29	52	38.5	40.5			159	5	35			7				441	14
Artificial Intelligence I												1				1	1

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Company types

Clear filter

Product development

Supporting pharma services

Contract Research Organisation

Contract Development Manufacturing Organisation

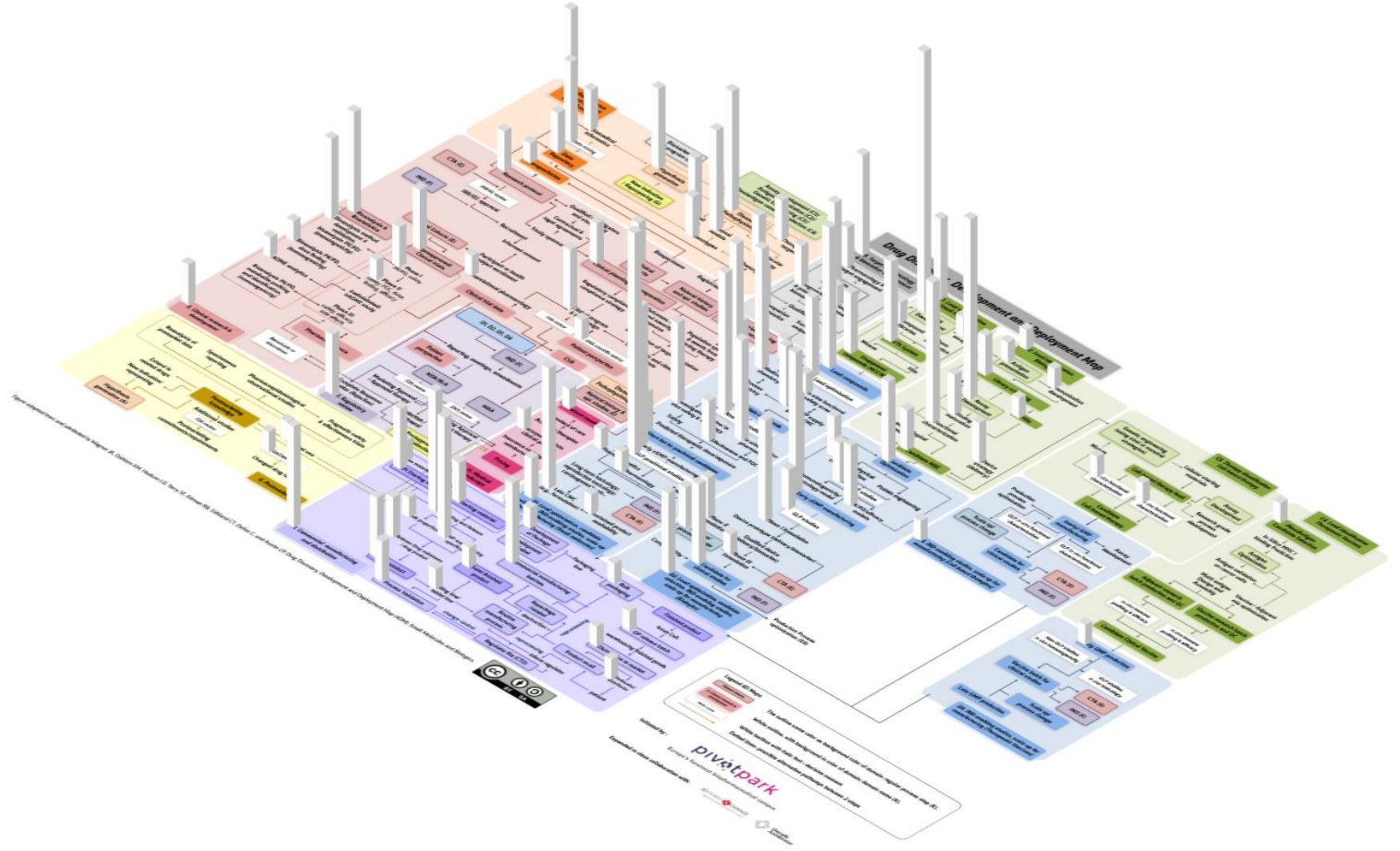
Education

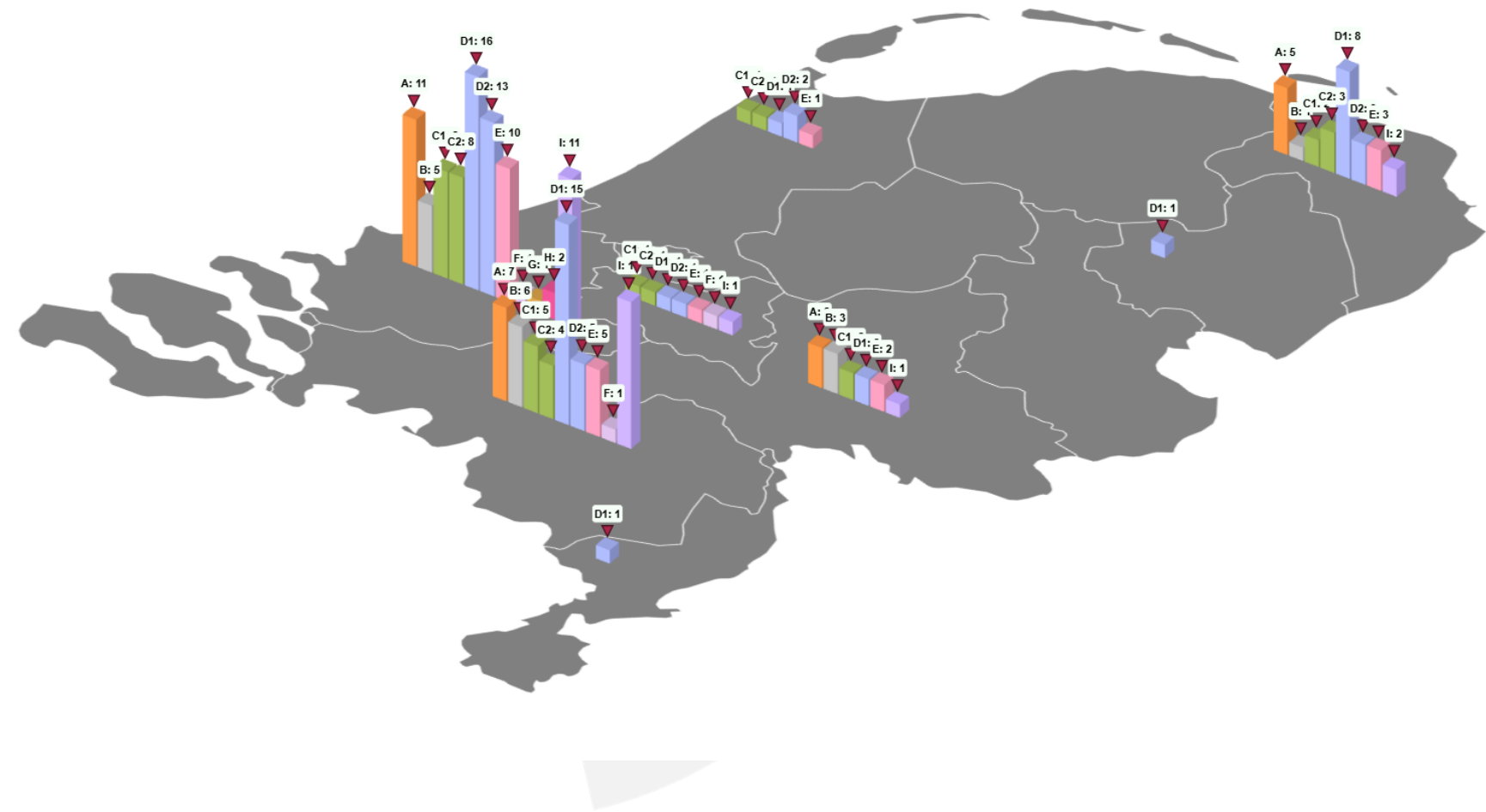
Other

Company list for skill: Analysis | Analytical Method Development and domain: D1

Company	Education level	Dom...	Process step	current FTE	additional FTE needed
4cbf6692-0d9a-48a6-8ee9-b47446b2eba1	HBO	D1	Candidate compounds	8	1
4cbf6692-0d9a-48a6-8ee9-b47446b2eba1	WO	D1	Candidate compounds	2	3
4cbf6692-0d9a-48a6-8ee9-b47446b2eba1	HBO	D1	Lead compounds	8	1
4cbf6692-0d9a-48a6-8ee9-b47446b2eba1	WO	D1	Lead compounds	2	3
4cbf6692-0d9a-48a6-8ee9-b47446b2eba1	HBO	D1	Short list for preclinical candidates	8	1
4cbf6692-0d9a-48a6-8ee9-b47446b2eba1	WO	D1	Short list for preclinical candidates	2	3
29cd652c-74b0-4572-8542-a38c1904d0bb	WO	D1	In vitro/in vivo pharmacology	6	2
2257be39-7f3d-4fbc-933d-9352ee3bfff0	WO	D1	GLP preclinical studies	3	0
6e991e5a-61a2-457a-8cad-ee47d8efc105	HBO	D1	GLP preclinical studies	9	6

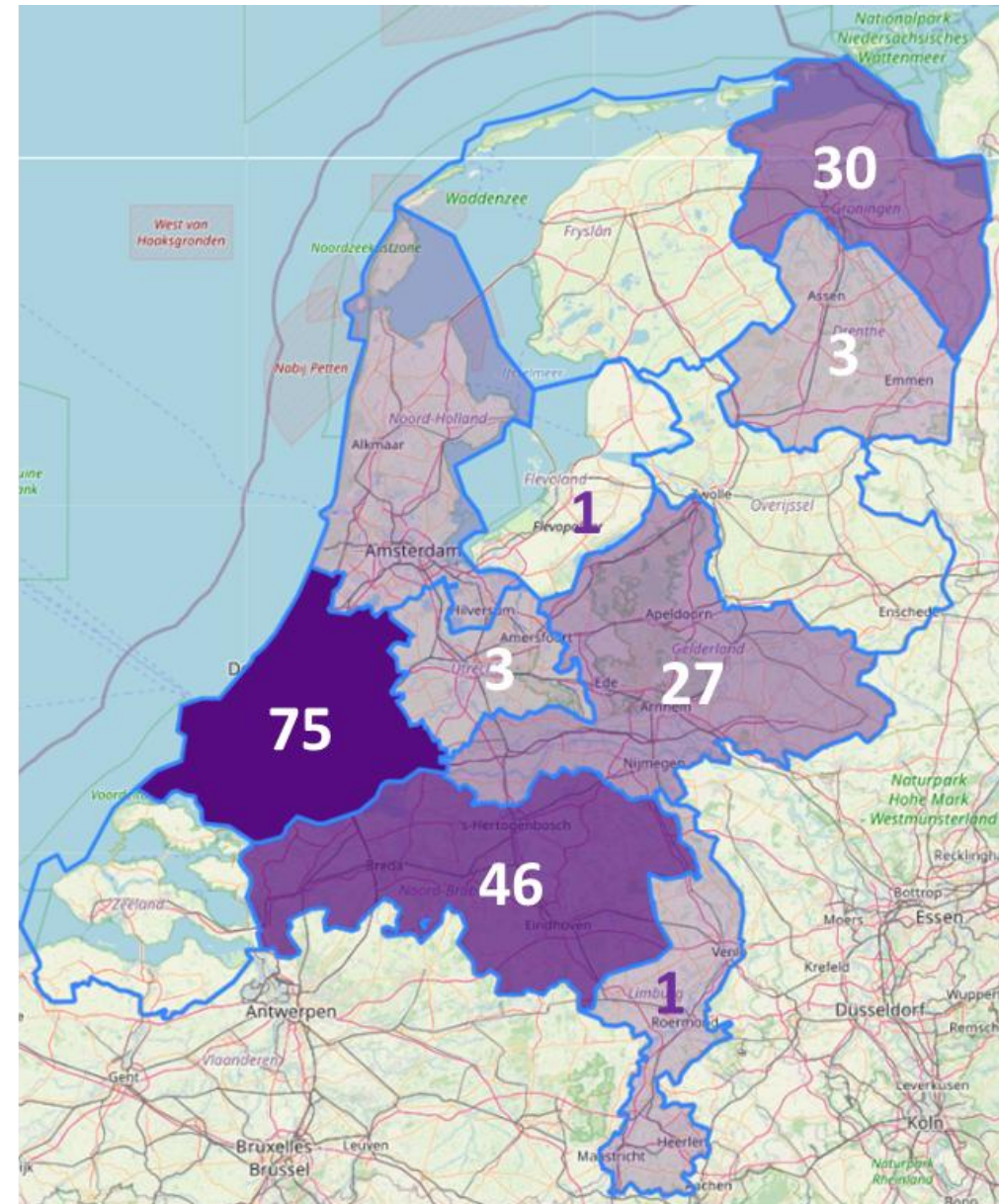
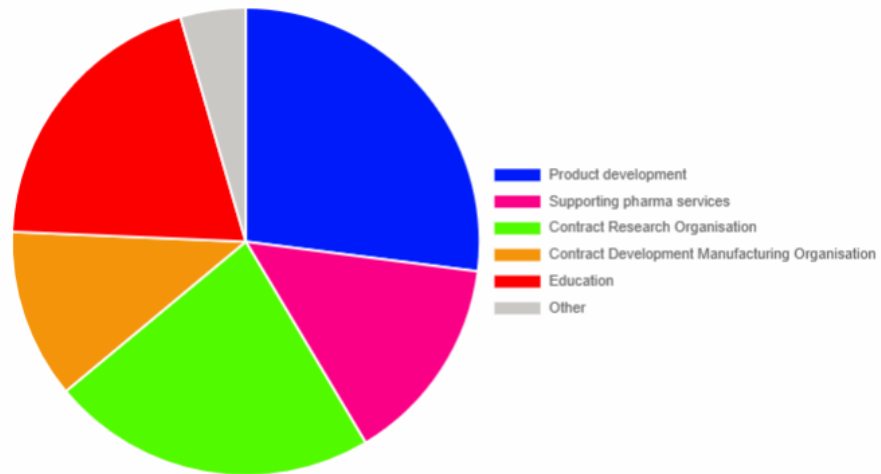
1 to 9 of 9Page 1 of 1





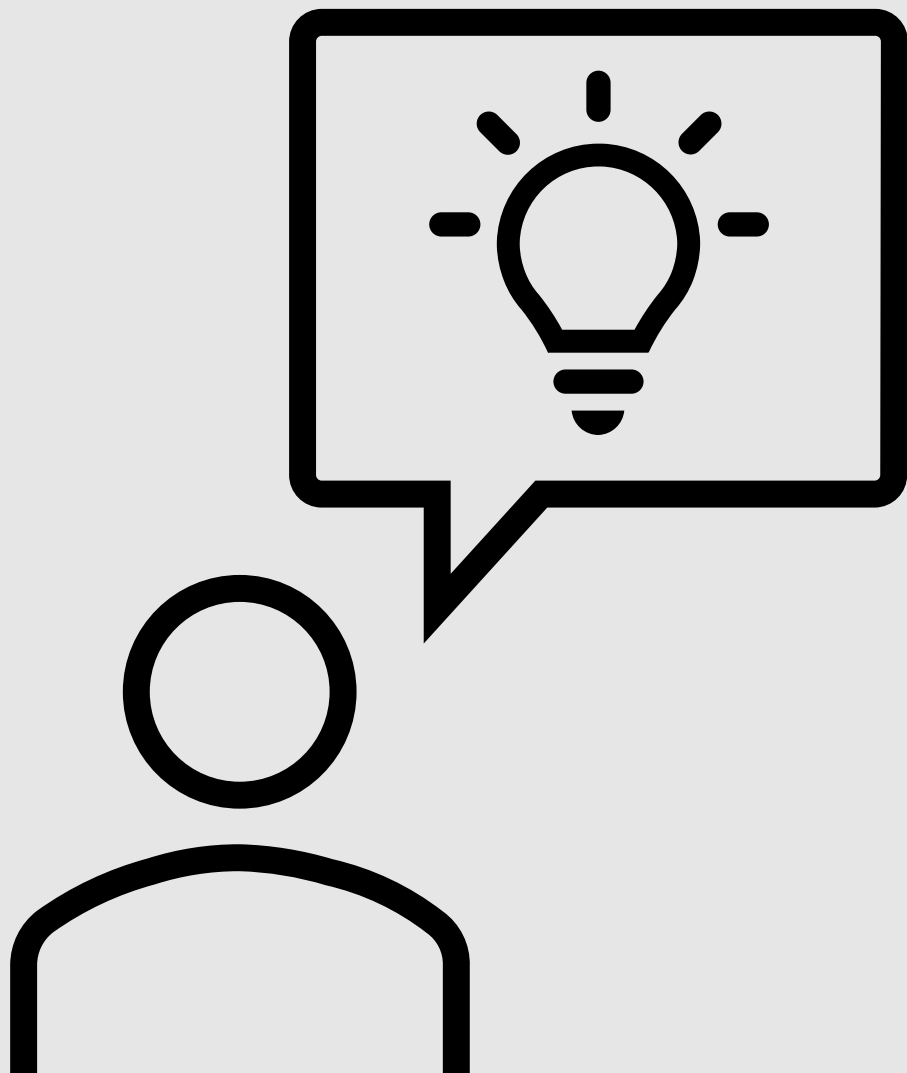
Current dataset in 4DM

Includes 186 institutes/companies*



Future of 4DM

- Include all Pharma relevant institutes and companies into the map
- Expand the map with relevant therapy types
- Use the map as a pharma start-up landing page to **navigate through the available partners and infrastructures**



Closing Summary

Thank you!



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The Netherlands



Europe's foremost biopharmaceutical campus