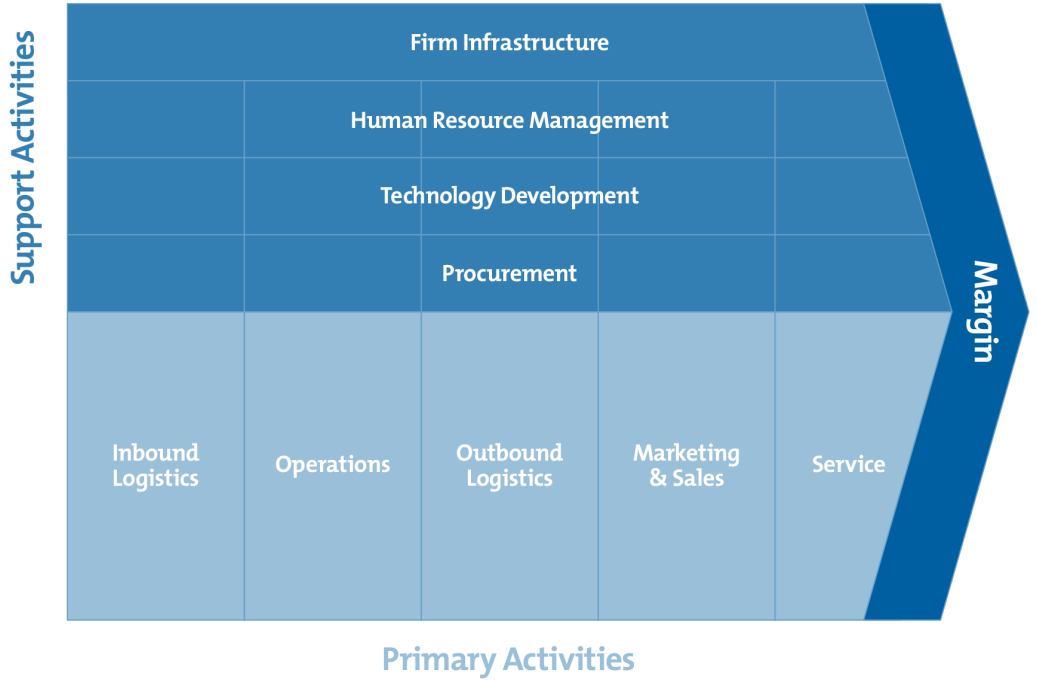
Interreg
Danube Transnational Programme
DanubePeerChains

DanubePeerChains
D.T.1.3.1, T1.3.2, T1.3.3

Clustero

Value Chains

- Michael Porter 1985



Clusters as a tool for analysing Value Chains

- UNIDO 2011

The industrial cluster development approaches, which assume that spatial organization, strategic firm alliances, and networking are sources of systemic competitiveness. Their analytical focus is often on: a) how actors network to exchange goods, services, and information; b) institutional and political frameworks that promote building industrial clusters and the inclusion of small-tomedium-sized firms; and c) the level of knowledge and technology used.

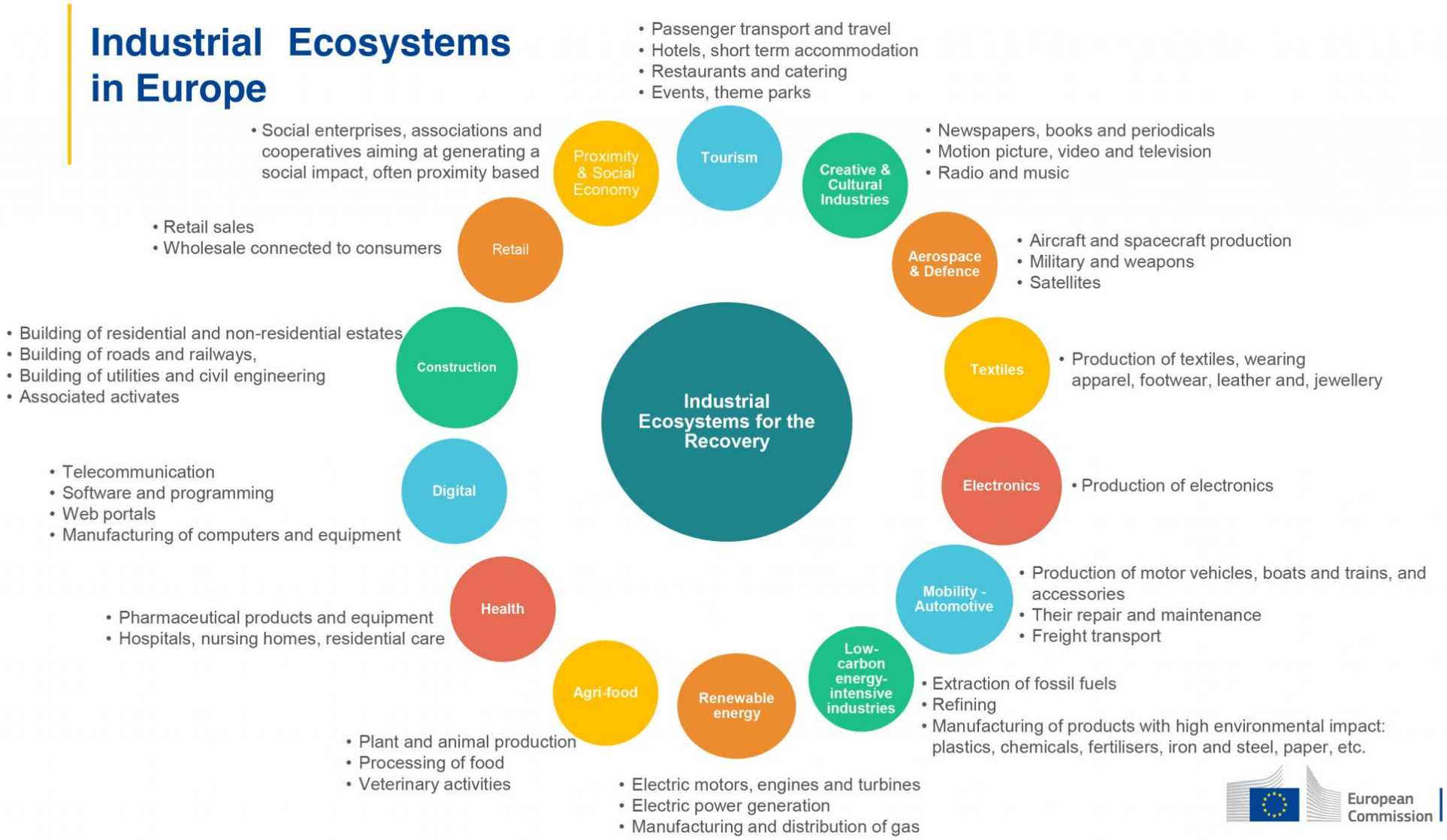
Step 1: ESCA

- Cluster excellence

defines 16 sectors

- Indicators:
  - Number of labelled clusters in a sector;
  - Geographical distribution of labelled clusters in a sector

Step 2: 14 industrial ecosystems



Step 3: DanubePeerChains

Pre-analaysed sectors in A.T1.1 and A. T1.2 in terms of labour force and digitalisation

- metal industry,
- machine building,
- engineering,
- electro industry,
- electronics/robotics,
- ICT

Step 4: Selection

No	Sector according to ESCA	Number in the Danube Region	Countries in the Danube Region	14 industrial ecosystems	DanubePeerCHains	Comments
1	Aviation and space			Yes		
2	Biotechnology					
3	Construction/building sector			Yes		
4	Creative industries and businesses, media, design, financial services			Yes		
5	Energy and environment			Yes		
6	Food Industry (non biotech) and Agro Tech			Yes		
7	Health and medical technologies			Yes		
8	Information and Communication; Hard/Software			Yes	Yes	
9	Logistics: Packaging, Delivery, Logistical Systems and Services					
10	Maritime technologies, water resources, water transport					
11	Micro, nano and optical technologies					
12	Mobility: Vehicles, rail, traffic systems			Yes		
13	New Materials and chemistry					
14	Production and engineering				Yes	
15	Textile industries			Yes		
16	Tourism, Leisure, Sports			Yes		

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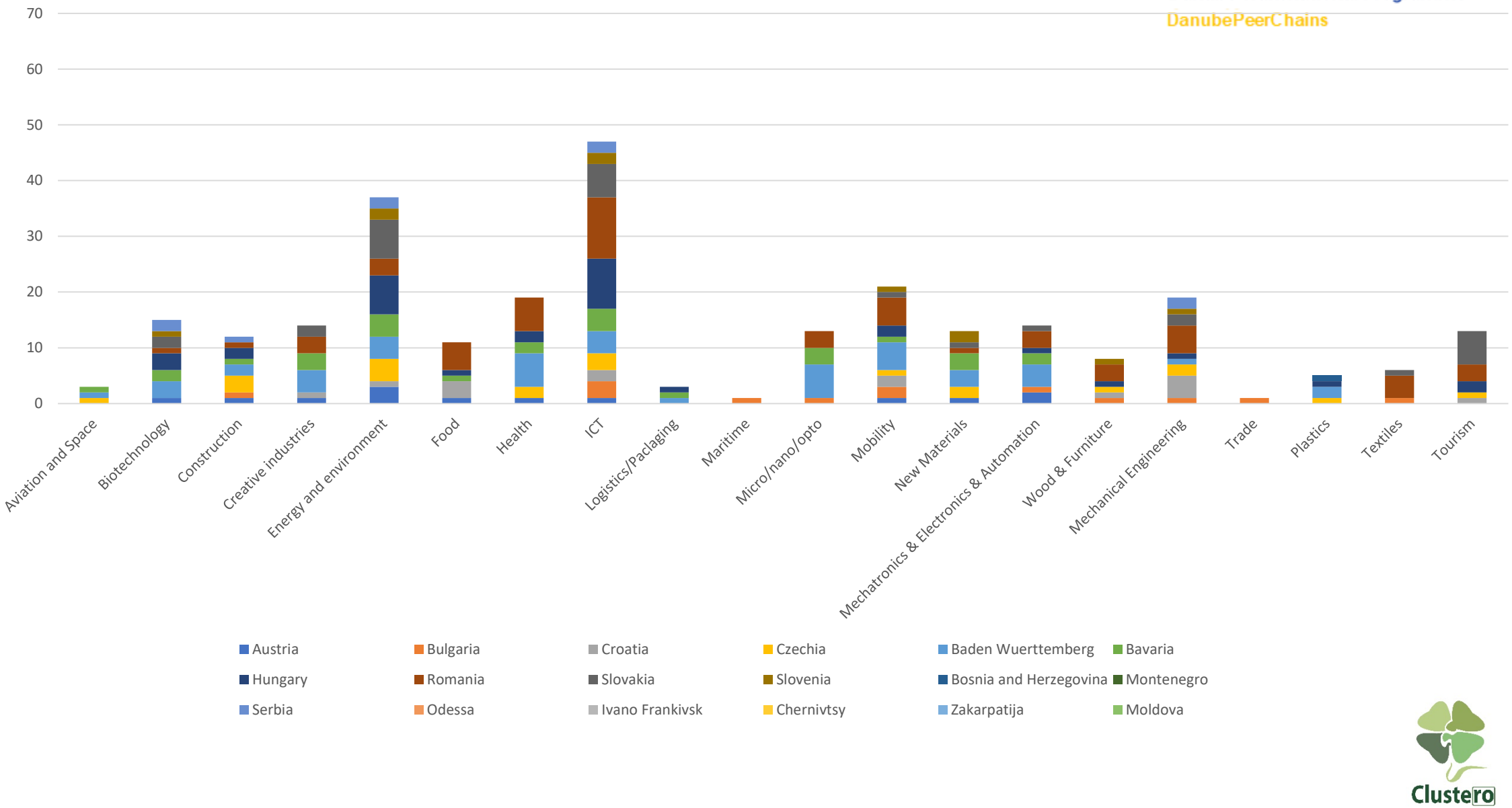
Clusters per region and topic



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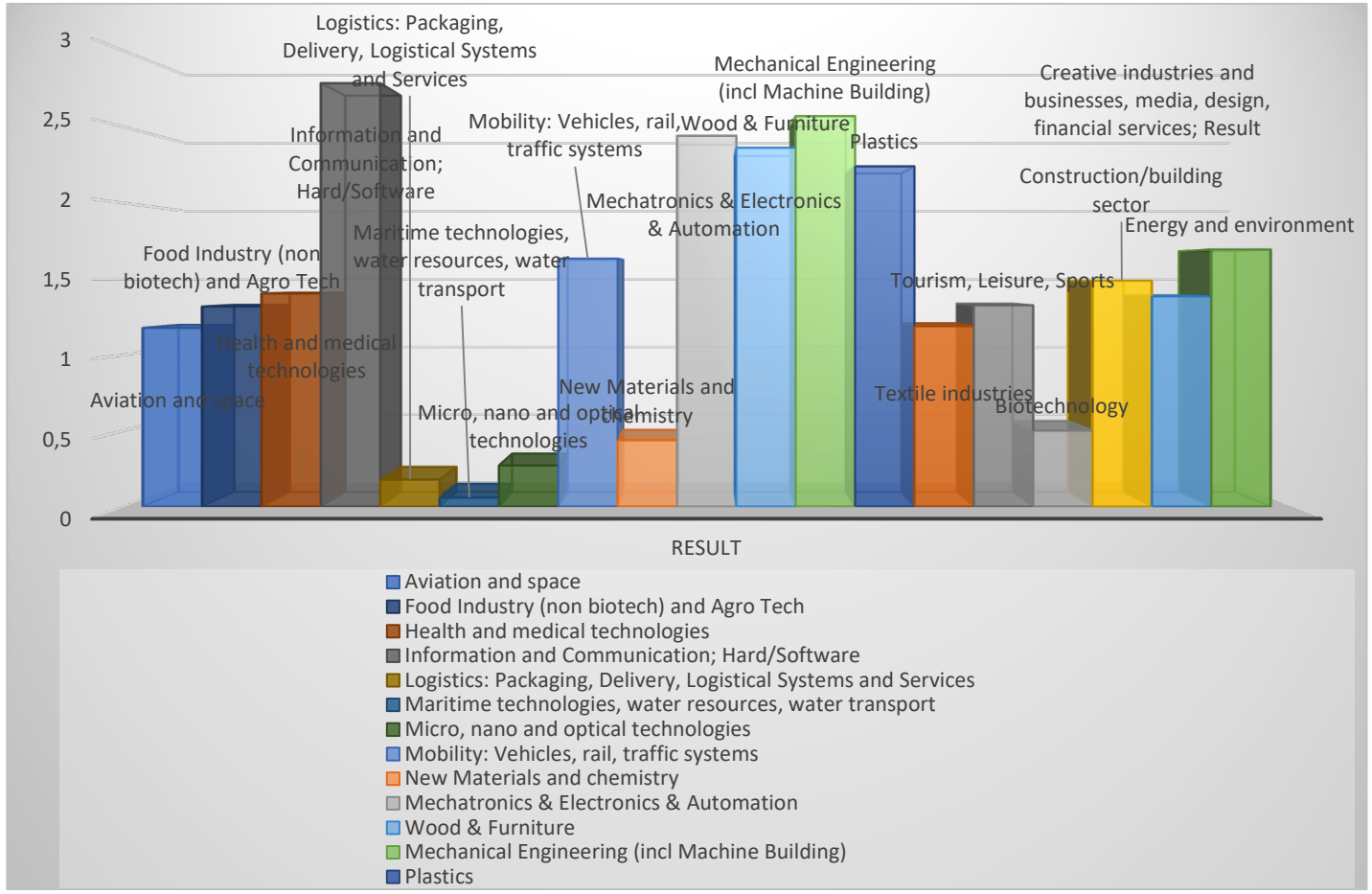
Index

Number of clusters	Number of countries	Industrial value chains	Danube Peer Chains	Results
(Number of clusters in the specific sector)/(Number of clusters in total)	(Number of countries where the clusters in the specific sectors are represented)/(Number of countries)	Yes = 1 No = 0	Yes = 1 No = 0	$\sum$

Eg: ICT

Number of clusters	Number of countries	Industrial value chains	Danube Peer Chains	Results
47/266 = 0, 17	11/18 = 0, 61	Yes = 1	Yes = 1	2,78


3
2,5
2
1,5
1
0,5
0
Logistics: Packaging, Delivery, Logistical Systems and Services
Mechanical Engineering (incl Machine Building)
Creative industries and businesses, media, design, financial services; Result
Information and Communication; Hard/Software
Mobility: Vehicles, rail, traffic systems
Wood & Furniture
Plastics
Construction/building sector
Mechatronics & Electronics & Automation
Energy and environment
Maritime technologies, water resources, water transport
Food Industry (non biotech) and Agro Tech
Tourism, Leisure, Sports
Health and medical technologies
New Materials and chemistry
Textile industries
Biotechnology
Aviation and space
Micro, nano and optical technologies
RESULT
Aviation and space
Food Industry (non biotech) and Agro Tech
Health and medical technologies
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Logistics: Packaging, Delivery, Logistical Systems and Services
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New Materials and chemistry
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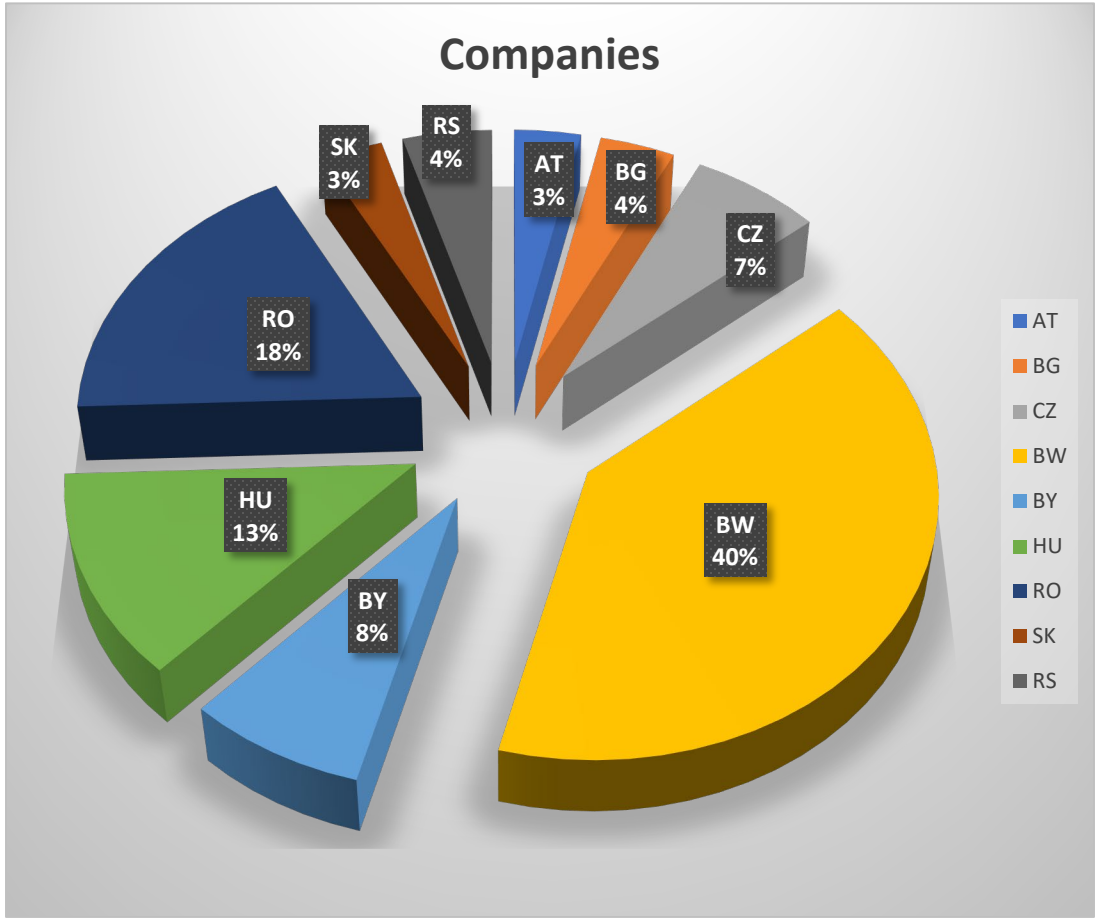
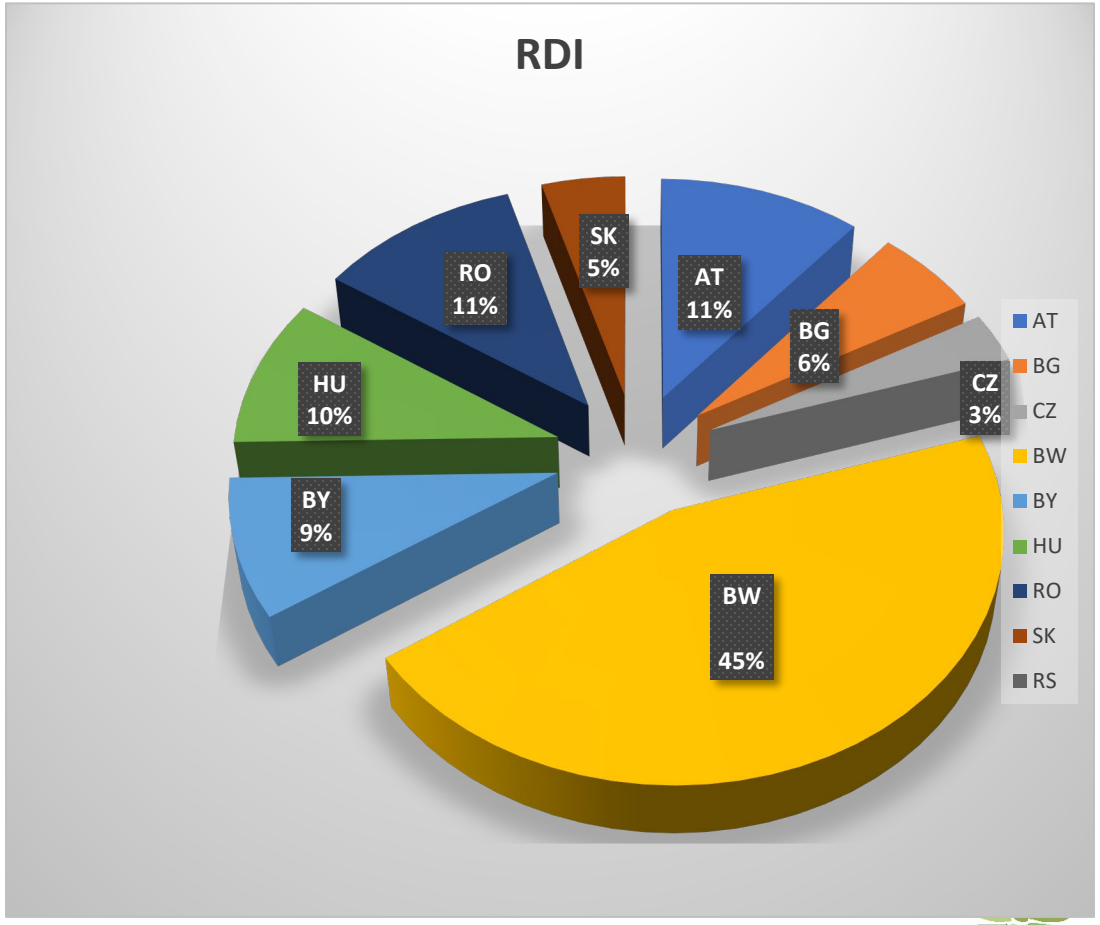
Wood & Furniture
Mechanical Engineering (incl Machine Building)
Plastics

ICT

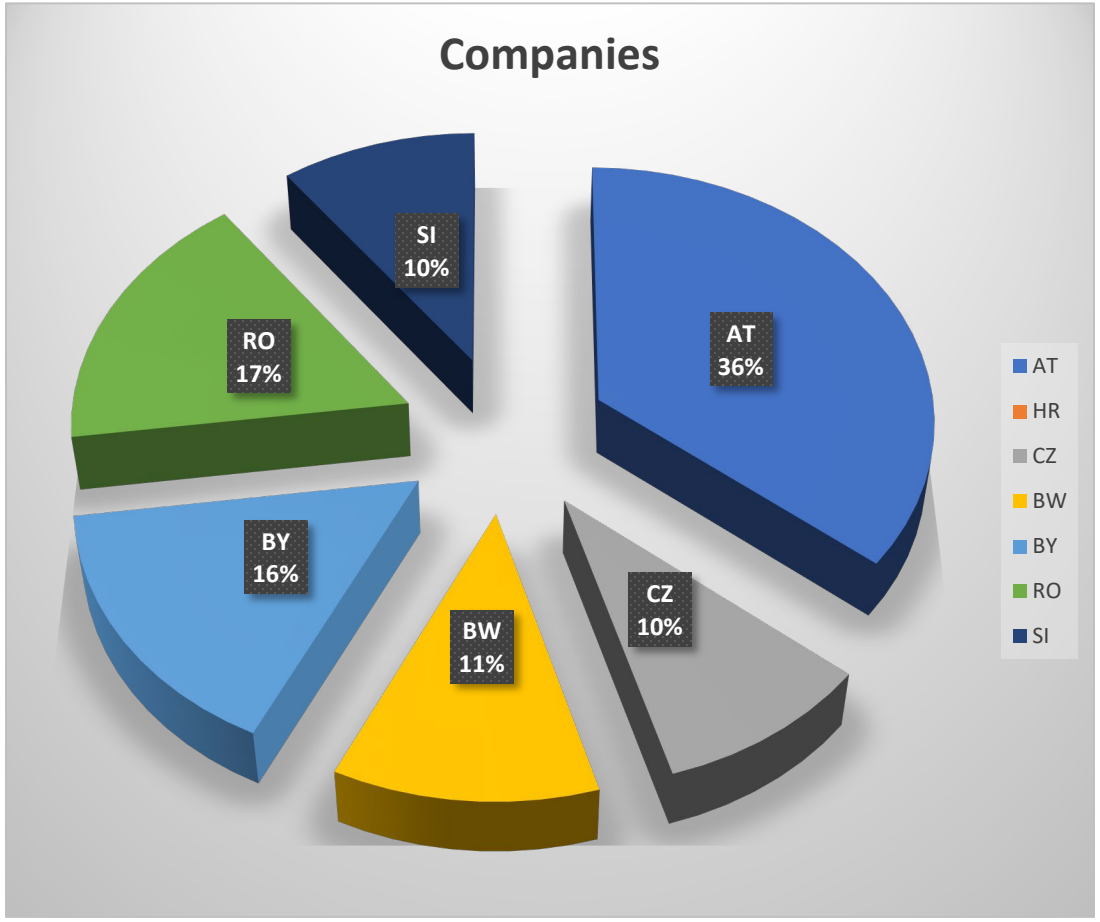

Companies
SK 3%
RS 4%
AT 3%
BG 4%
CZ 7%
RO 18%
HU 13%
BW 40%
BY 8%
AT
BG
CZ
BW
BY
HU
RO
SK
RS

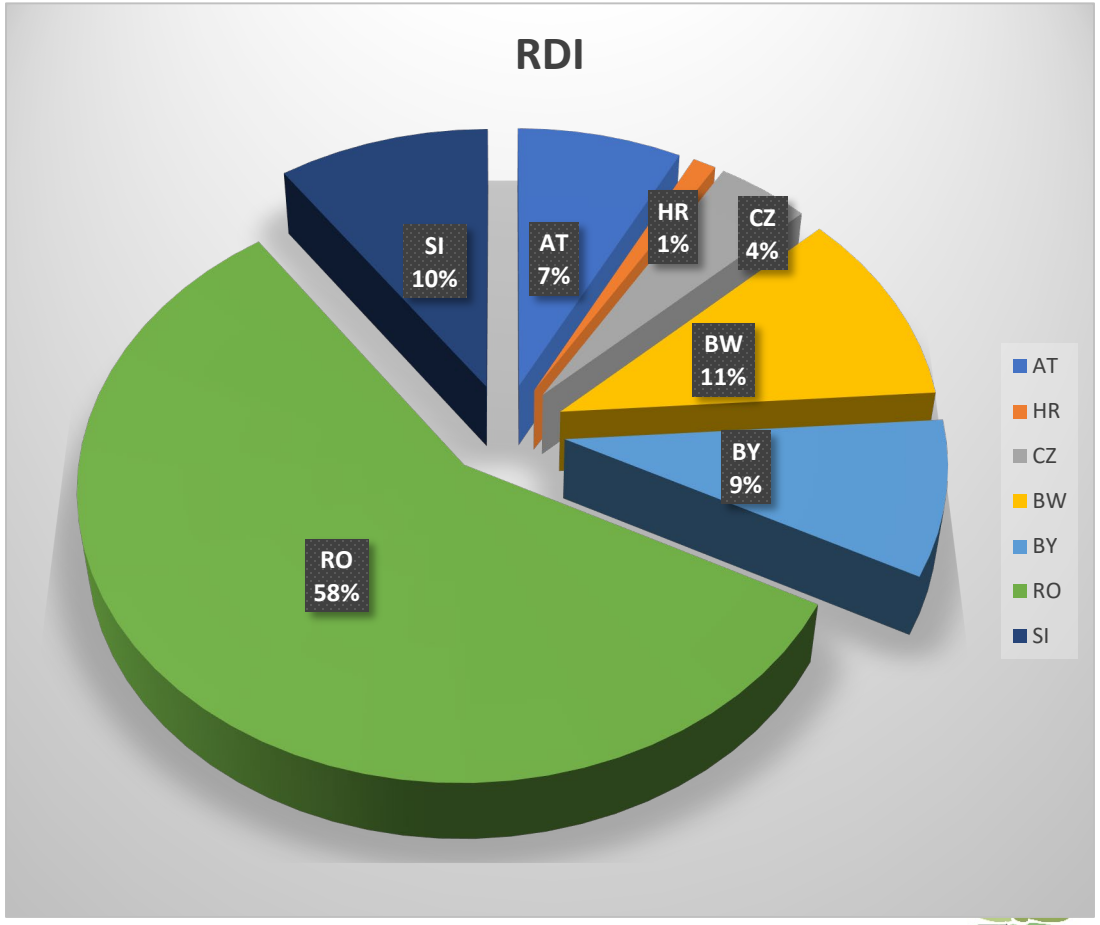

RDI
SK 5%
RO 11%
AT 11%
BG 6%
HU 10%
CZ 3%
BY 9%
BW 45%
AT
BG
CZ
BW
BY
HU
RO
SK
RS

ICT

- Equal East-West Divide along the Danube Region in terms of companies
  - BW, BY & AT make 51% of the companies
- The Western part makes 66% of the RDI
- The subcontracting problem of the East
- Remarkable is BW with 40% of the companies and 45% of the RDI

Mobility

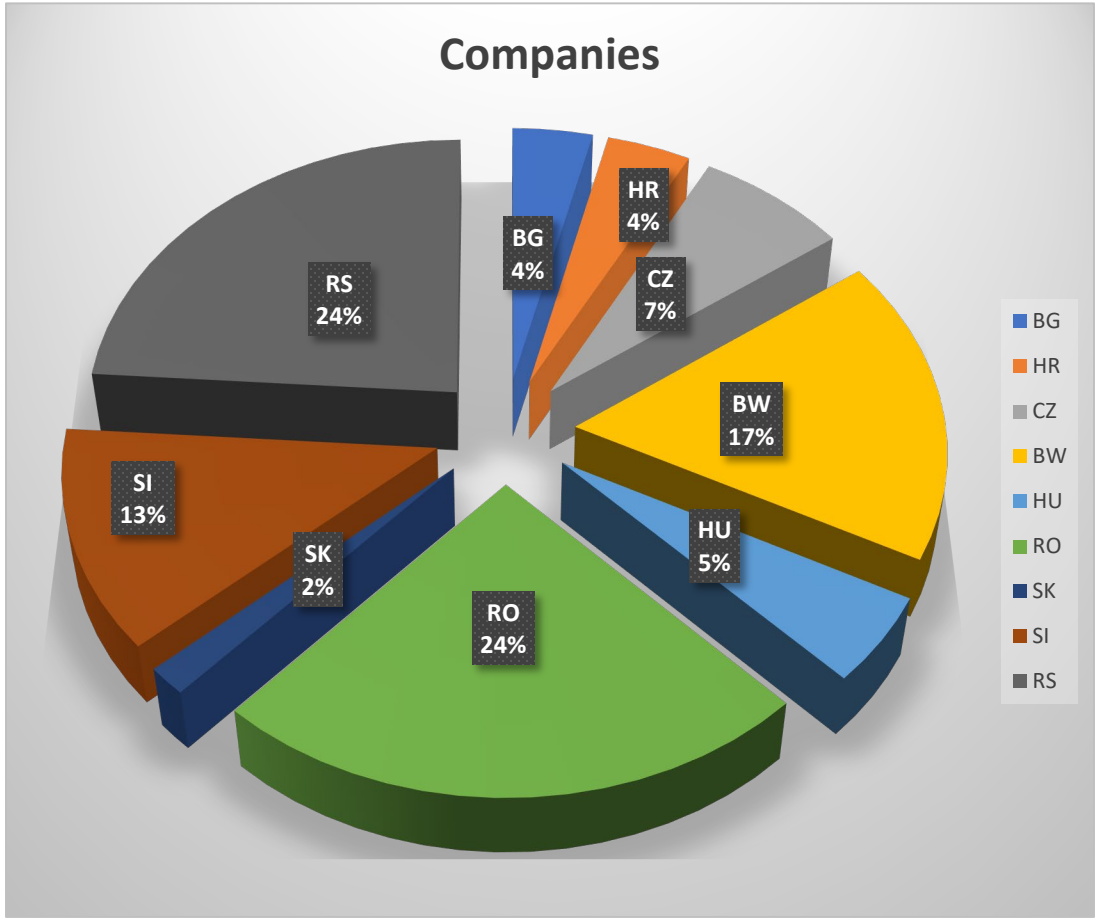

Companies
SI 10%
AT 36%
RO 17%
BY 16%
CZ 10%
BW 11%
AT
HR
CZ
BW
BY
RO
SI

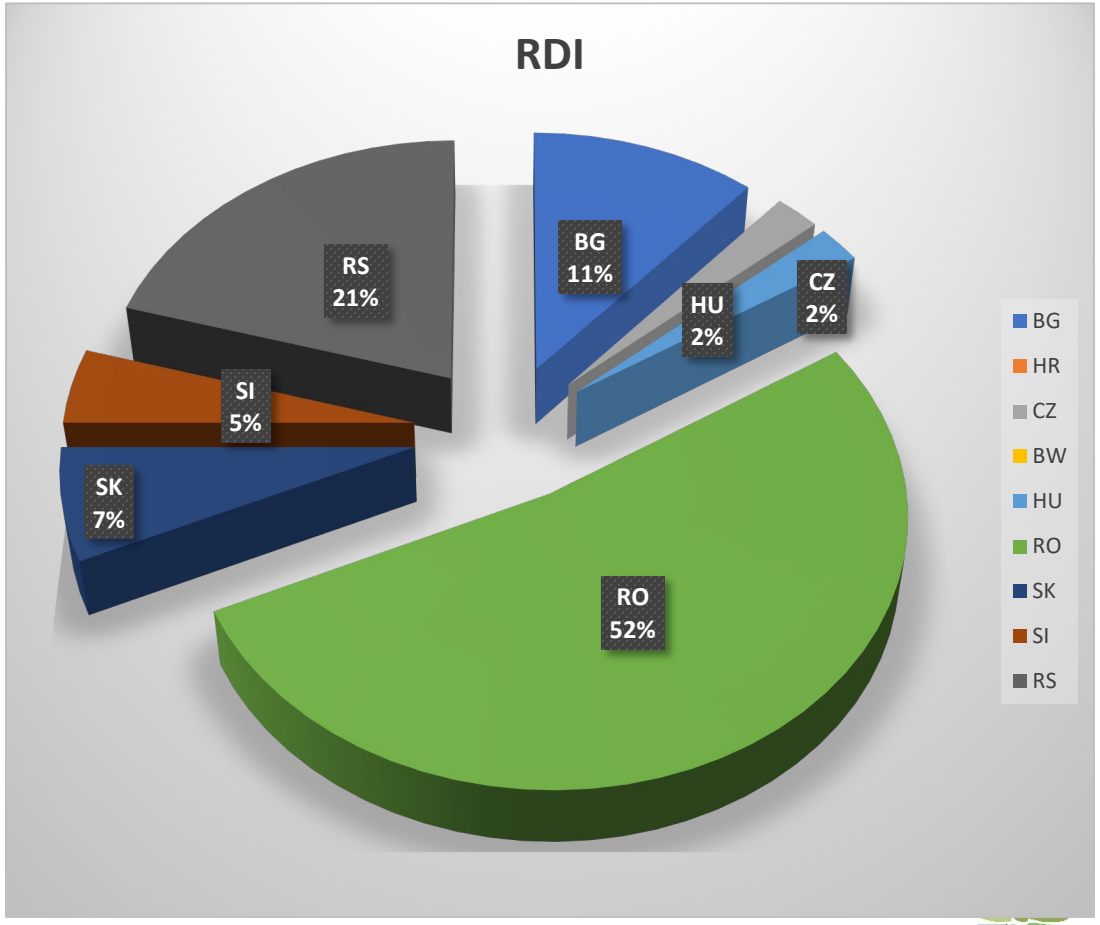

RDI
SI 10%
AT 7%
HR 1%
CZ 4%
BW 11%
BY 9%
RO 58%
AT
HR
CZ
BW
BY
RO
SI

Mobility

- As a rule companies are to be found in the OEM countries (BW, BY, CZ, RO), but there they tend to be big: Mercedes, BMW, Skoda, Dacia
- Austria has an outstanding 36% , mainly automotive supplying SMEs
- Romania has an outstanding 58% of RDI: Renault delocalised parts of the RDI towards Romania

Mechanical Engineering

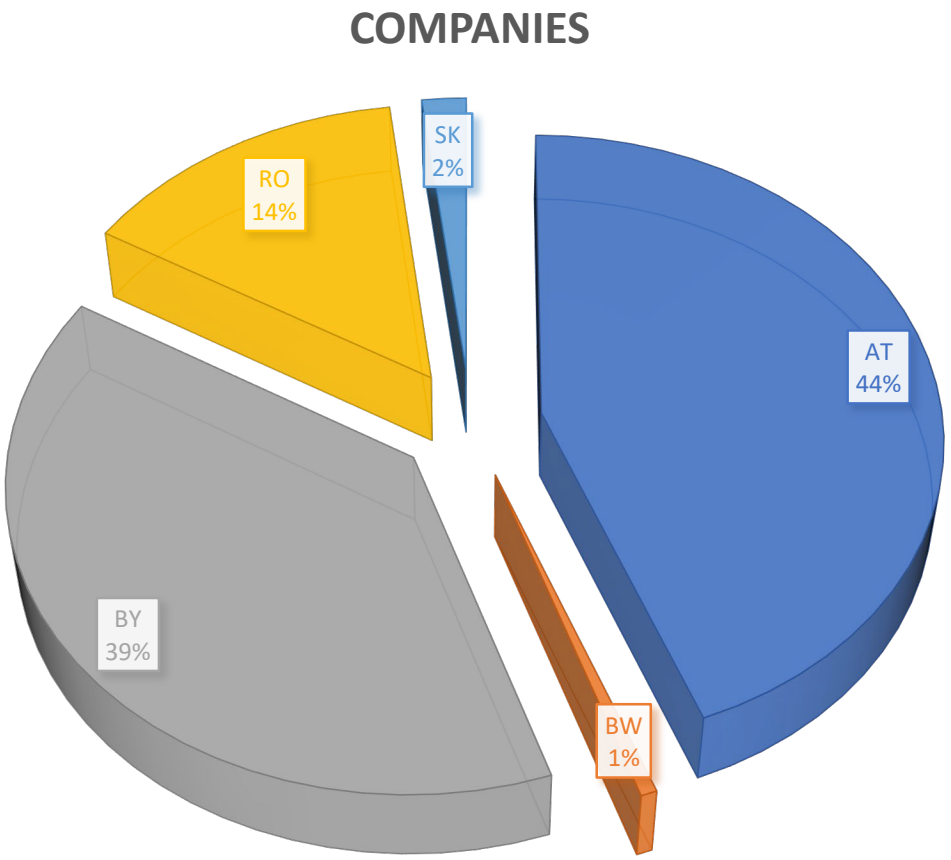


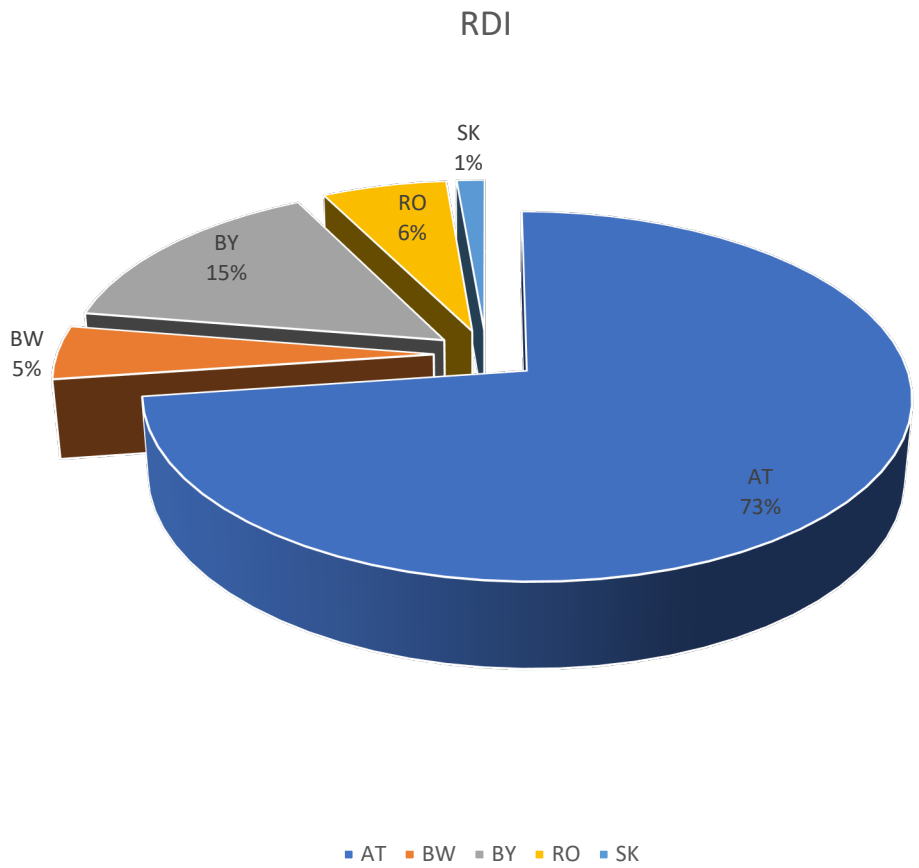


Mechanical Engineering

- Heavily represented in the Eastern part of the region, i.e RO, SK, SI, RS, HR, CZ, SK, HU make together 83% of the companies and 100% of the RDI
- Traditional industry coming from the communist past
- Low level of innovation and digitalisation

Mechatronics



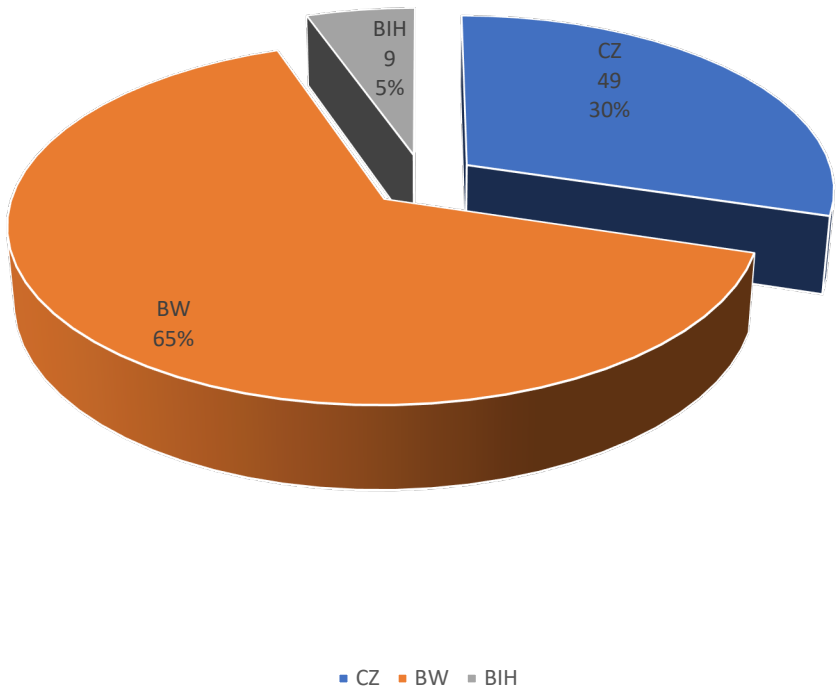


Mechatronics

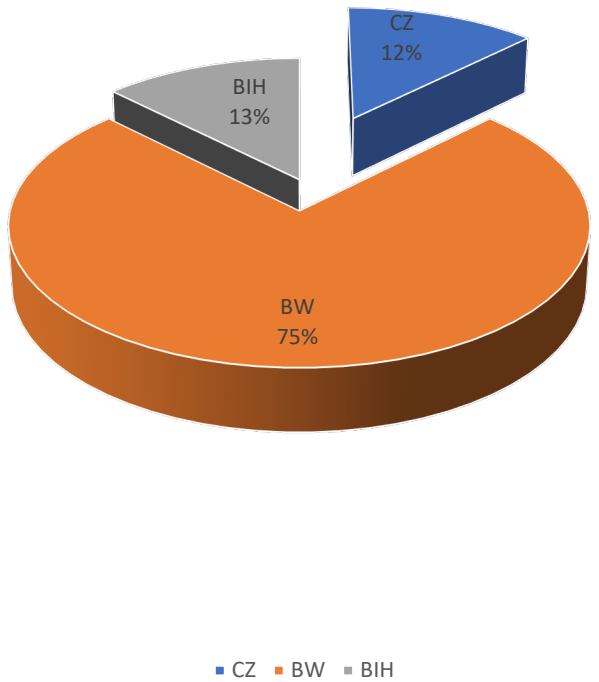
- Austria heavily dominates the region with 44% of the companies and 73% of RDI
  - The turn of Lower Austria from a traditional industrial structure towards innovation
- Not represented in all countries in the region

Plastics

Companies



RDI

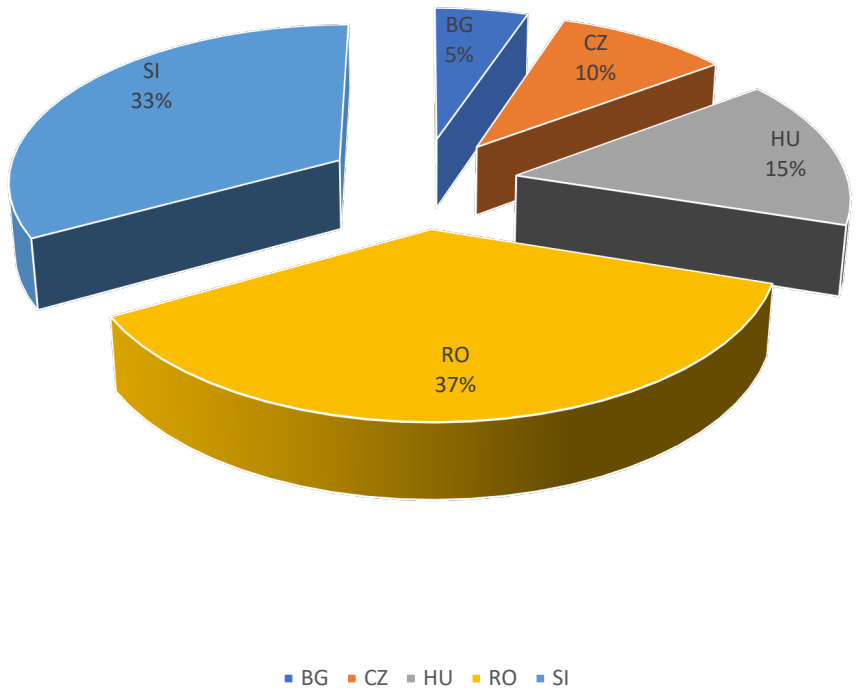


Plastics

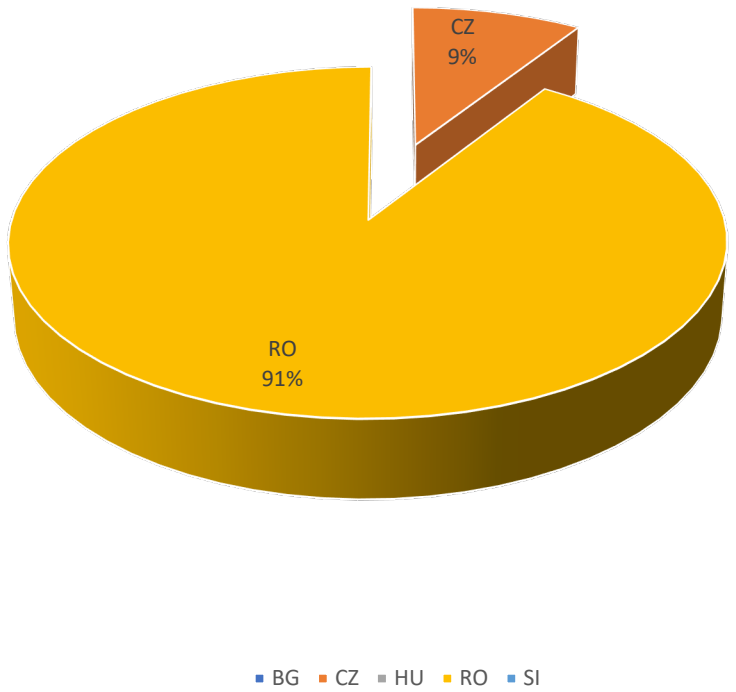
- Relative poor representation in the region
- The outstanding presence of BW: 65% of the companies and 75% of RDI
- The presence of BiH

Wood and furniture

Companies



RDI



Wood and furniture

- Represented only in the Eastern part
- Traditional sector

Value Chain Analysis

Which?

- Mechatronics, Electronics, Automation
- Mechanical Engineering
- Wood & Furniture

What?

- to describe these value chains as strategic target fields for positioning of companies from the project region (a)
- identify labour market requirements and company development needs for successful target value chain entry (b)

Value Chain Analysis (a)

example of Romanian Competitiveness Sectors 2014-2020

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	R&D	Branding	Product Development	Inbound Logistics (Suppliers)	Manufacturing	Outbound Logistics (Distribution)	Sales (Marketing)	Service (Maintenance)
Agrofood								
Automotive								
Bioeconomy								
Energy & Environment								
ICT								
Creative Industries								
Wood & furniture								
Health & Pharma								
Textiles								
Tourism								

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Value Chain Analysis (a)

How?

We will map member companies of the analysed ESCA labelled clusters

We will send you the clusters of each country and the template

We will send you an example

Should you have more, please do a profile for each cluster

	AT	BG	HR	CZ	BW	BY	HU	RO	SK	SI	RS
Mechatronics	2	1			4	2	1	3	1		
Mechanical engineering		1	4	2	1		1	5	2	1	2
Wood & furniture		1	1	1			1	3		1	

Value Chain Analysis (b)

How?

Interview Template

- Cluster Business: No of companies, No of employees, turnover, exports, RDI expenditures
- About the cluster: short description
- Value chain: positioning of the members on the value chain
- Suppliers
- Related industries and logistics
- Human Resources

Value Chain Analysis (b)

How?

Interview Template

- Competition
- Digitalisation
- Market and trends
- Business and clusters: cooperation in the region
- Regional and Institutional Support
- Future challenges

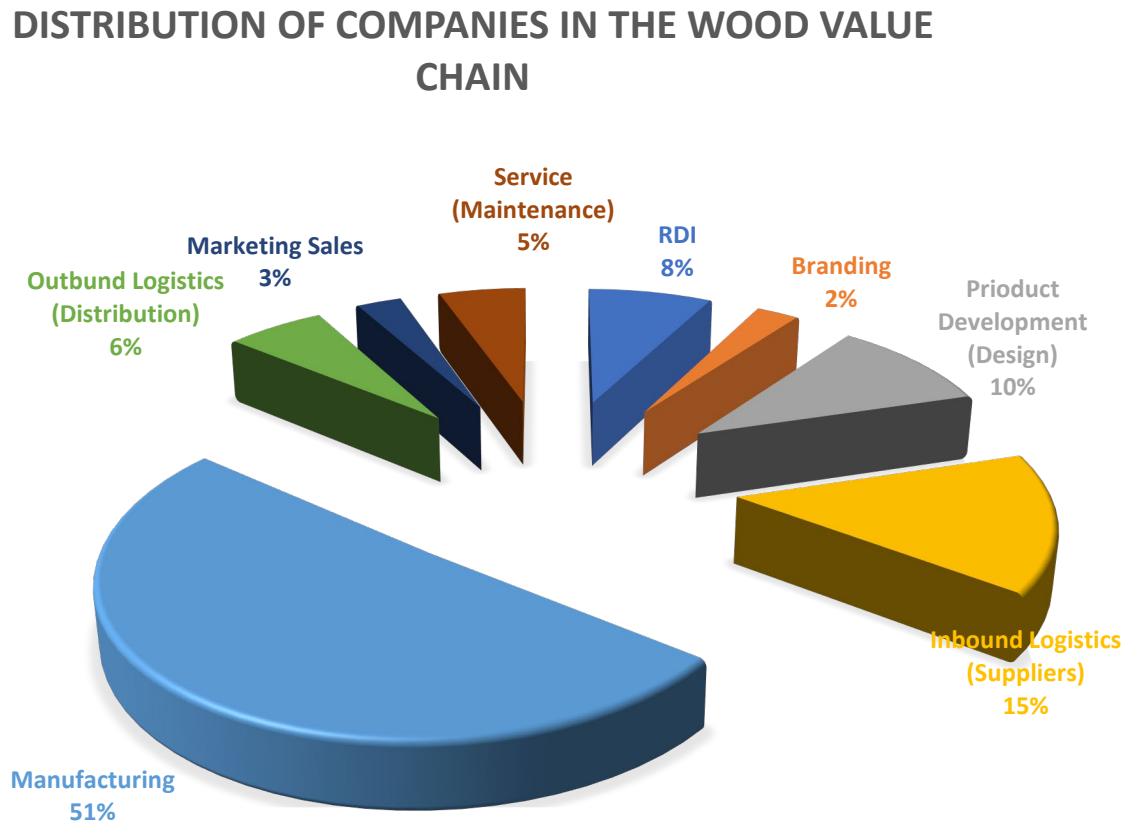
Description of the sectors (c)

- We will kindly ask you for:
  - Existing sectoral studies on the 3 topics
  - To provide us with information on
    - Contribution to GDP
    - No of companies
    - No of employees
    - Exports
    - RDI expenditure.

At national (regional) level.

Wood & Furniture

- Pro Wood (RO)
- Panfa (HU)
- SRIP PSiDL (SI)
- Furniture and Timber Construction Cluster (AT)
- Wood Processors Berane (ME)
- Transylvanian Furniture Cluster (RO)
- Croatian Wood Cluster (HR)



Wood & furniture (density)

Wood and furniture (No. of companies)	RDI	Branding	Prioduct Development (Design)	Inbound Logistics (Suppliers)	Manufacturing	Outbund Logistics (Distribution)	Marketing Sales	Service (Maintenance)	Total
Austria	16	12	19	56	113	1	2	19	238
Hungary	8	0	29	15	30	25	10	5	122
Montenegro	0	0	2	2	5	0	1	0	10
Romania	5	1	8	13	75	5	4	6	117
Slovenia	14	0	0	0	61	0	0	0	75
Croatia	4	3	5	7	30	6	0	3	58
Total	**47**	**16**	**63**	**93**	**314**	**37**	**17**	**33**	**620**

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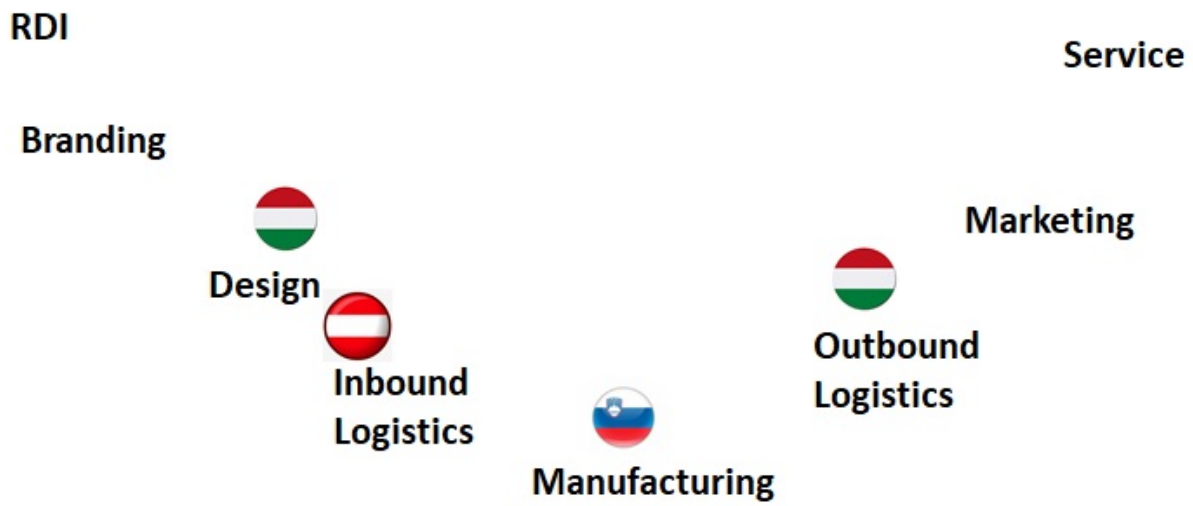
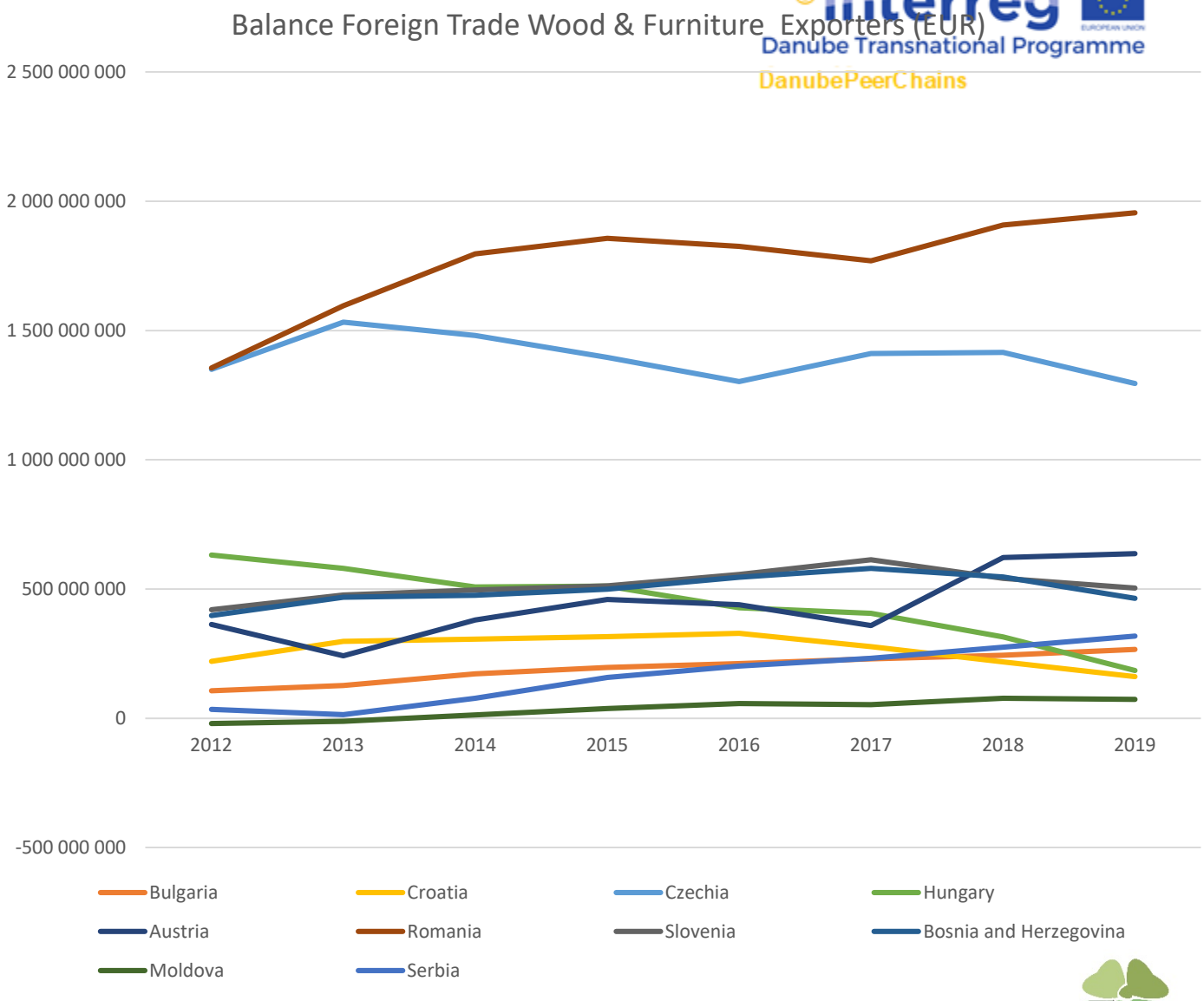
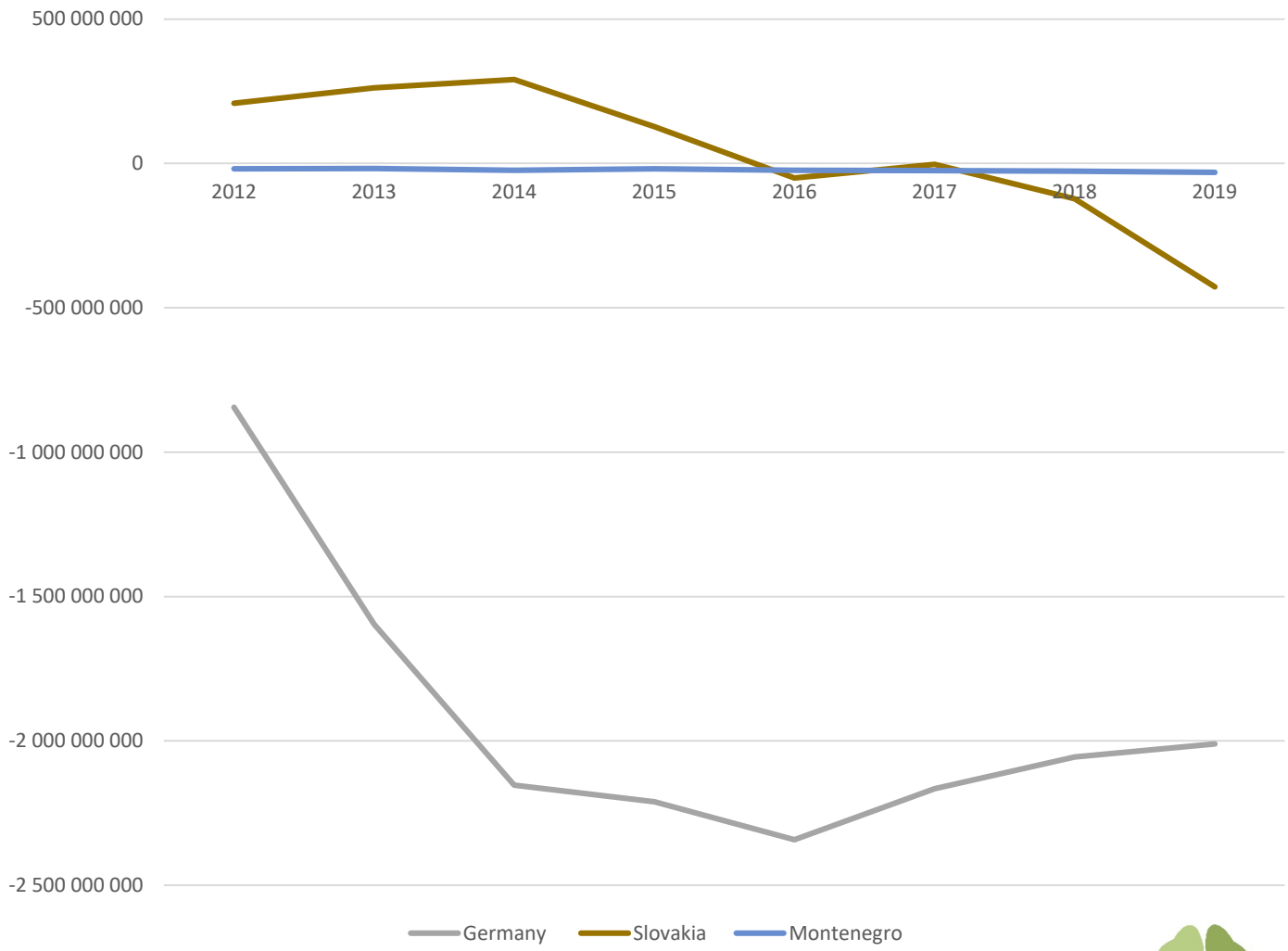
Wood and furniture (Relative strengths)



Wood and furniture (exporters)



Wood and furniture (importers)



Support: HR, research centers, associations (work in progress)

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- Ageing population (HU, SI, RO)
- Lack of qualified force (carpenter) (AT)
- Old technology (AT, ME, RO)
- Lack of collaboration with RDI (AT, RO)
- Lack of financial instruments from the banking system (RO)

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Competition and Reference Areas (work in progress)

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DanubePeerChains

- Work force drain towards Austria (HU)
- Competition from China based on costs (RO)

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Digitalisation

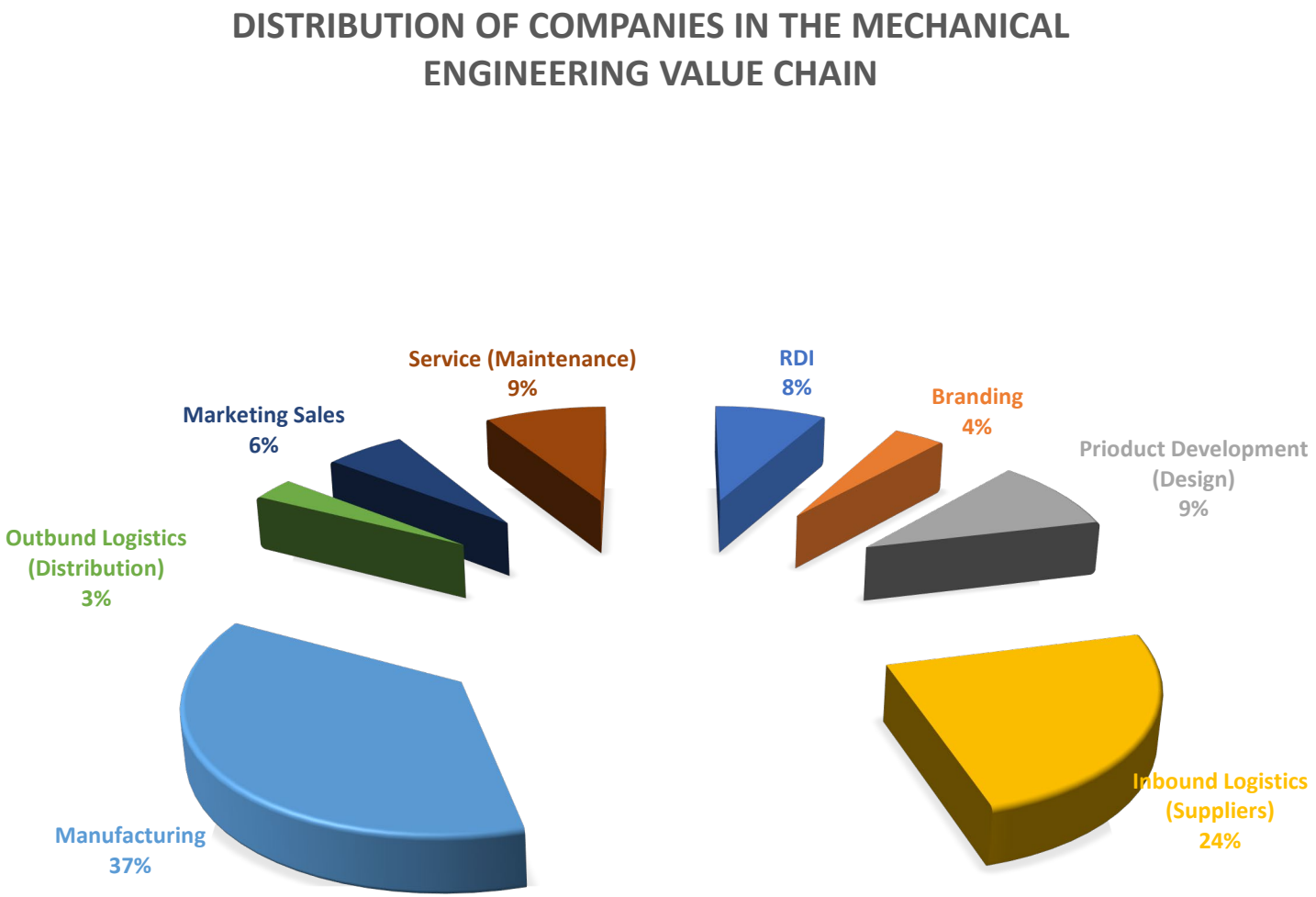
- Digital sales channels must be intensified (AT)
- Low level of digitalisation (RO)

Market and trends

- Interior design, furnishing, wood protection and energetic counselling (HU)
- Individualised manufacturing (AT, RO)
- Need to improve cooperation with other sectors (metal, textiles, plastics etc (AT, RO)
- Online shopping (RO)

Mechanical Engineering

- Indagro Pol (RO)
- NICAT (RS)
- TCS, ACS GIZ (SI)
- Metaldialog Heibronn (BW)
- SW HU Engineering Cluster (HU)
- Mechatronik Tirol (AT)
- Vojvodina Metal Cluster (RS)



Mechanical Engineering (Density)

Mechanical Engineering (No of companies)	RDI	Branding	Product Development (Design)	Inbound Logistics (Suppliers)	Manufacturing	Outbound logistics (Distribution)	Marketing/Sales	Service (Maintenance)	Total
Austria	6	0	14	28	53	5	0	9	115
Baden Wuerttemberg	50	50	100	350	400	30	50	25	1055
Hungary	10	0	0	0	24	4	5	24	67
Romania	32	7	20	0	26	1	25	22	133
Serbia	14	0	16	11	67	4	10	53	175
Slovenia	23	4	10	18	48	6	6	15	130
Total	**135**	**61**	**160**	**407**	**618**	**50**	**96**	**148**	**1675**

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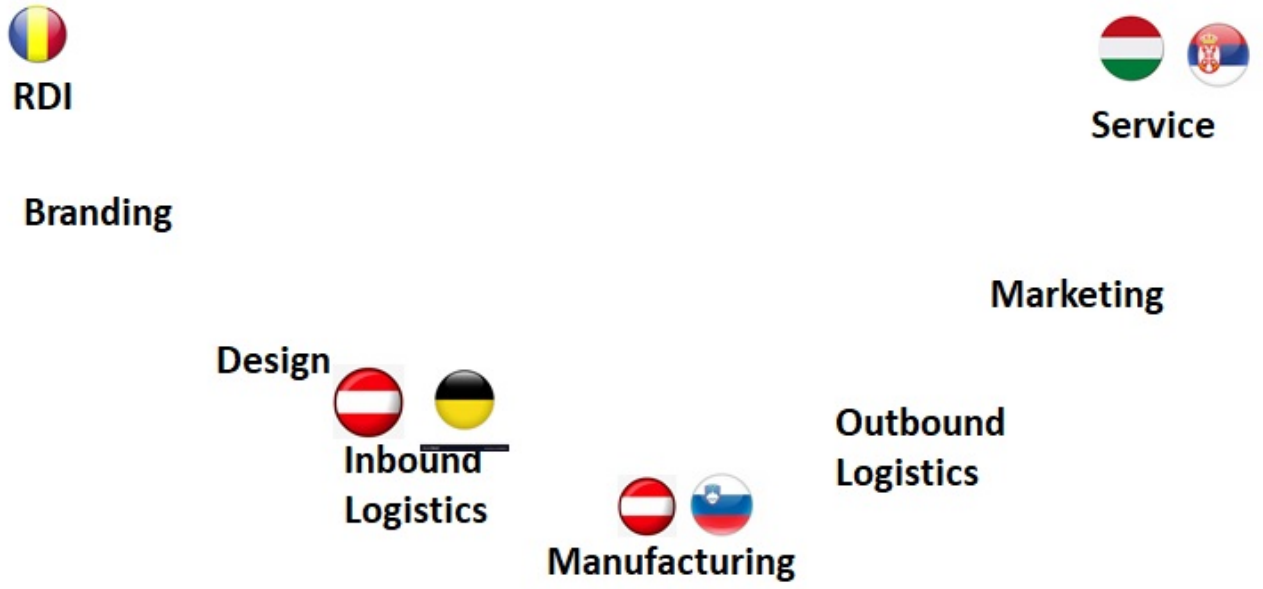
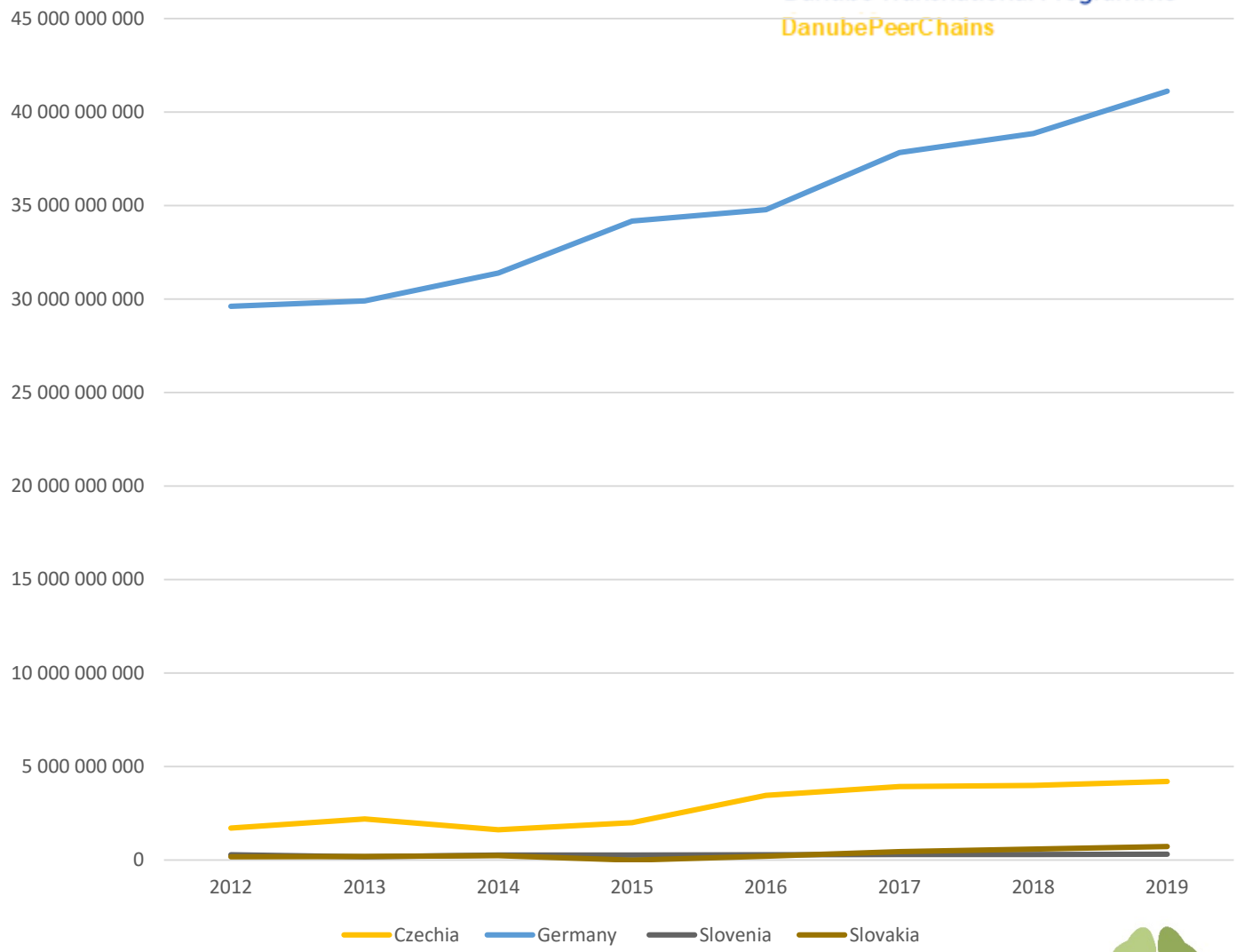
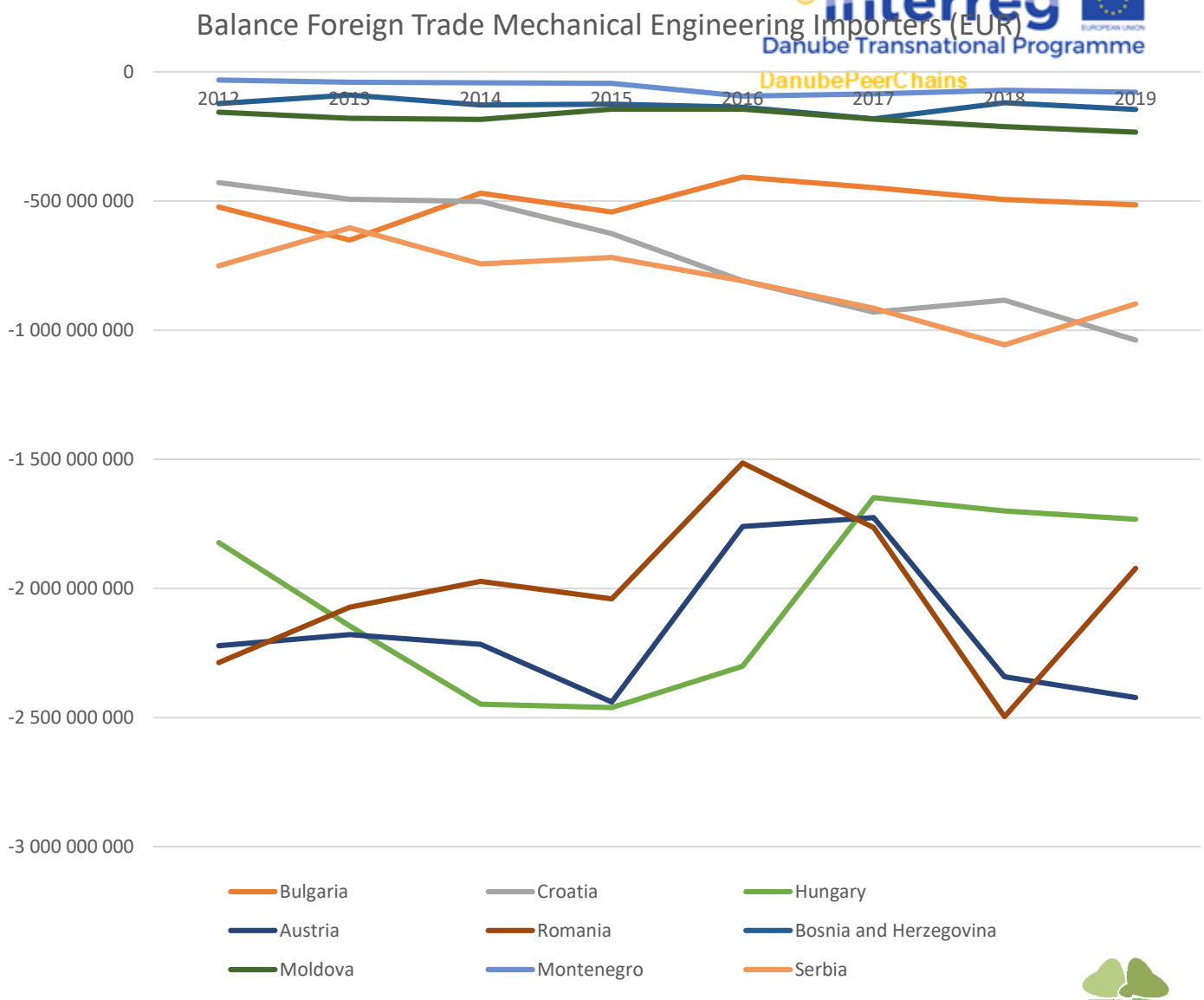
Mechanical Enginnering (Relative strengths)



Mechanical Engineering (Exporters)



Mechanical Engineering (Importers)



Support: HR, research centers, associations (work in progress)

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- Lack of qualified force (HU, BW)
- Lack of collaboration with RDI (RS)
- Lack of financial instruments from the banking system (RS)

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Competition and Reference Areas (work in progress)

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- Competition for the suppliers come from the online shops (BW)

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Digitalisation

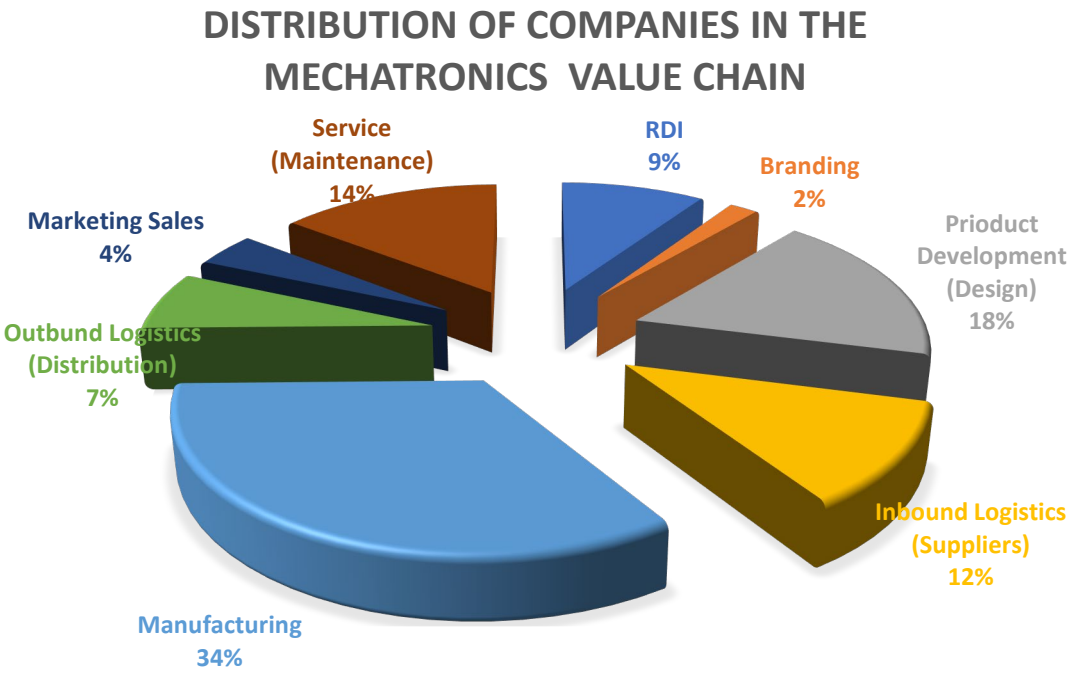
- 50% in the middle of the digitalisation process, 40% have just begun, 10% fully adopted (BW)

Market and trends

- CNC based technologies (HU)
- Demand from the automotive industry leading to pressure of reducing costs (BW)

Mechatronics

- Smart Factory Cluster (SI)
- Mechatronik Kompetenznetz Ostbayern (BY)
- Mechatronik Cluster Upper Austria (AT)
- Profession Metal Industry & Vocational Cluster (HU)
- Netzwerk Hochform (BW)
- Mechatrec (RO)



Mechatronics (Density)

Mechatronics (No. of companies)	RDI	Branding	Product Development (Design)	Inbound Logistics (Suppliers)	Manufacturing	Outbound logistics (Distribution)	Marketing/Sales	Service (Maintenance)	Total
Austria	52	0	105	62	115	20	0	70	424
Bavaria	7	0	15	2	28	2	3	4	61
Baden Wuerttemberg	3	15	30	30	147	30	15	30	300
Hungary	9	0	13	15	23	4	9	23	96
Slovenia	7	0	3	0	10	0	0	4	24
Total	**78**	**15**	**166**	**109**	**323**	**56**	**27**	**131**	**905**

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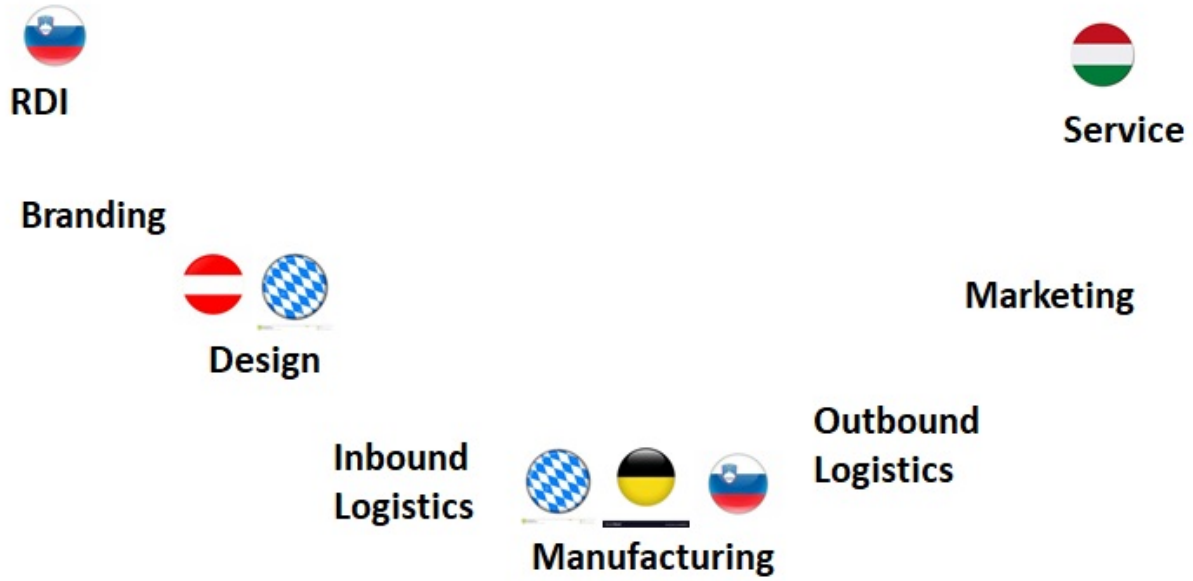
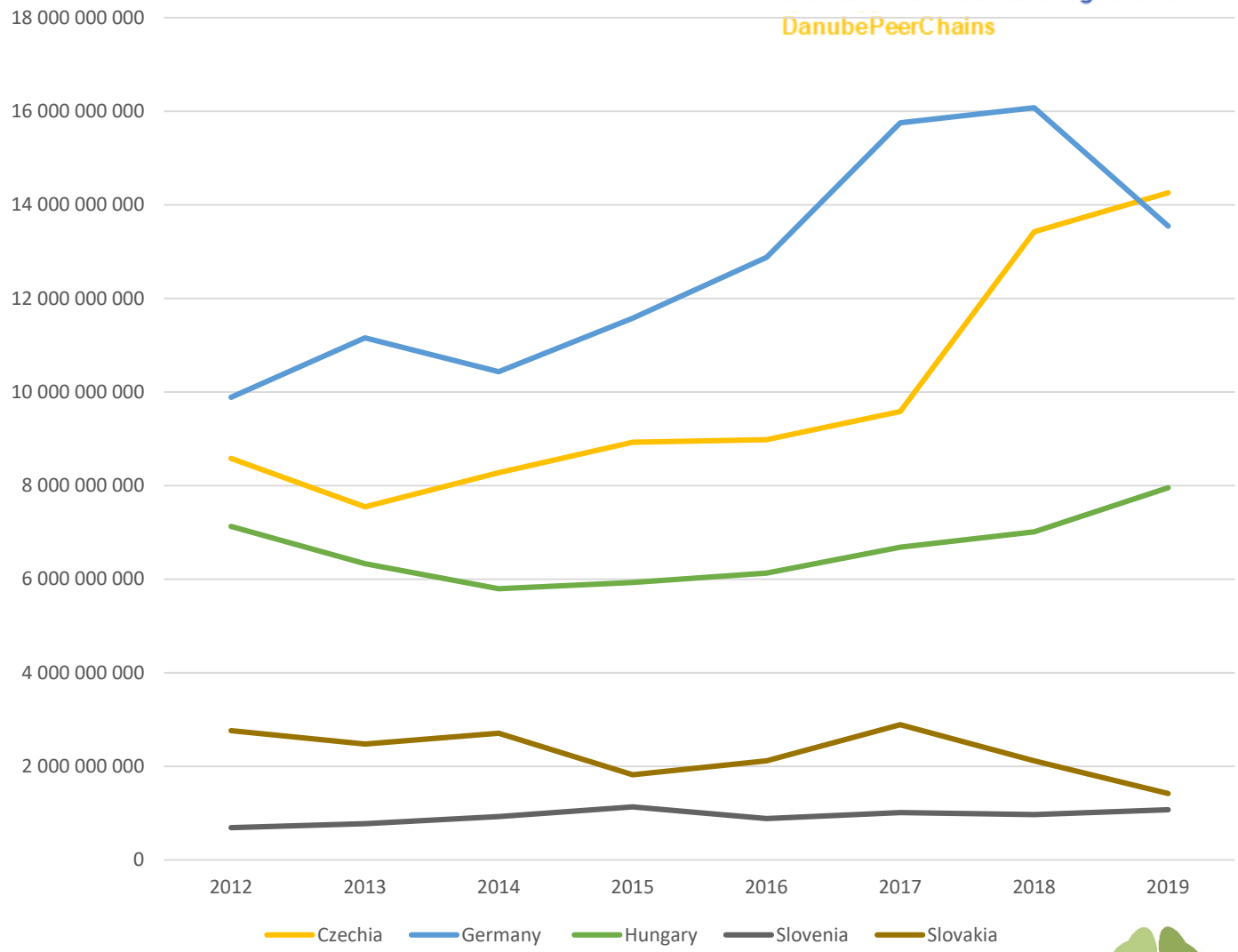
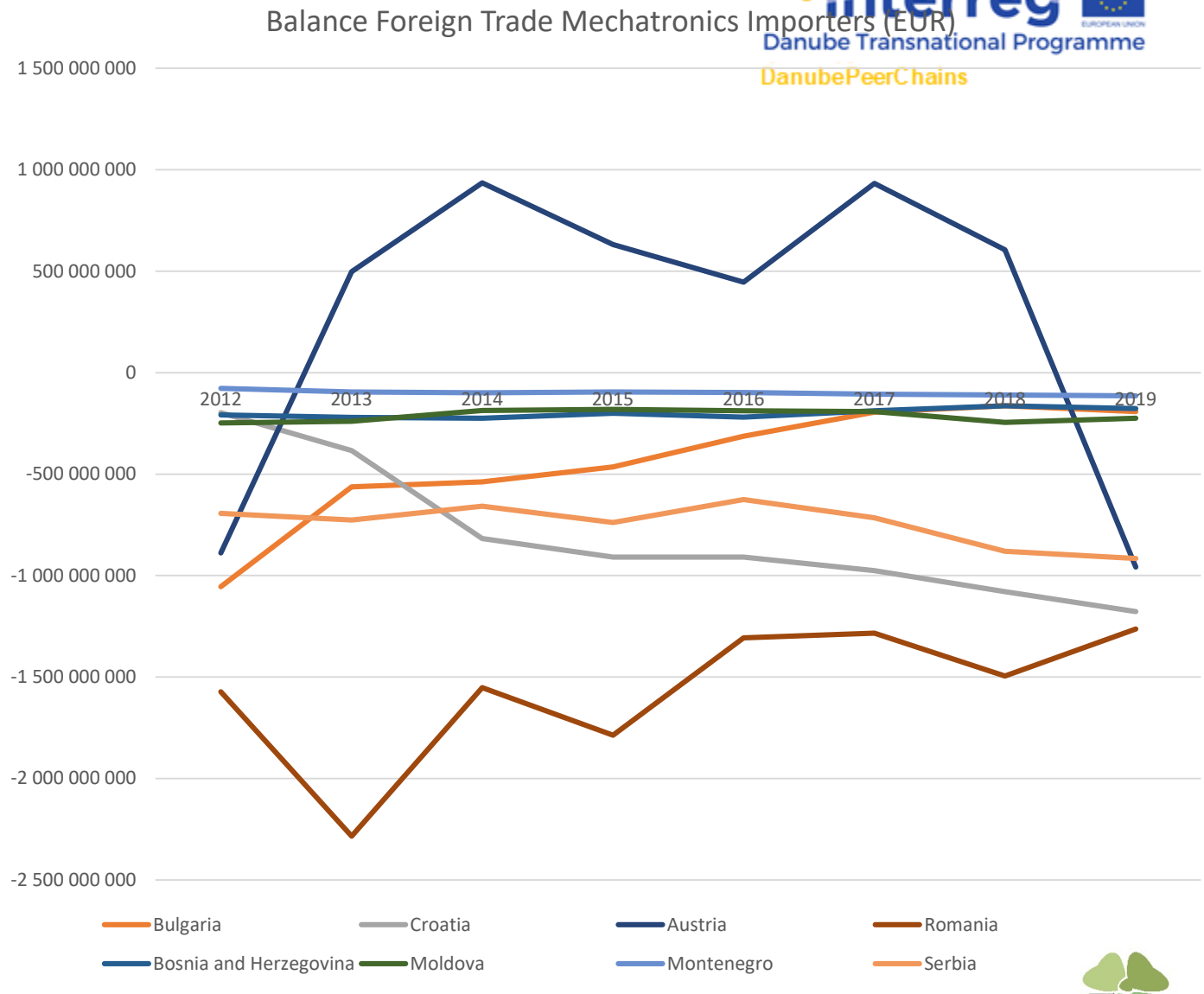
Mechatronics (Relative strengths)



Mechatronics (Foreign Trade Exporters)



Mechatronics (Foreign Trade Importers)



Support: HR, research centers, associations (work in progress)

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- Lack of qualified force, especially software application and development (AT, BY, BW)
- Old mindset and organisational culture (SI)
- Lack of financial support from the government (SI)

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Digitalisation

- Greatest challenges are seen in:
  - Consistency of data
  - Data quality
  - Interface optimisation
  - Digitalisation of processes
  - Building up methodological competence
  - Consideration of the human factor (AT)
- Small companies are in the beginning (BY)

Competition and Reference Areas (work in progress)

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- Workforce drain towards Austria (HU)
- Competition of part-suppliers from China based on costs (AT)

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Market and trends

- Customised products (HU)
- Digital product development (AT)
- Automation and collaborating systems (AT)
- Businesses from automotive and aerospace tend to migrate towards life sciences (AT)
- Medical engineering (BW)

Conclusions

Strengths	Opportunities
- Relevance of the selected sectors for the European economy High intensity of the foreign trade Complementarity of sectors in the Danube Region	- Enhancing cooperation between Danube regions based on existing competences on specific parts of the value chain. Digitalisation of production and marketing Cross sectoral cooperation (e.g., wood and metal, plastics, textiles)
Weaknesses	Threats
- East West technology divide Few companies acting on branding and marketing along the analysed value chains Digitalisation level of companies in the beginning	- Migration of traditional clients towards completely new market niches (e.g., automotive to life science) Competition from China based on costs. Online suppliers disrupting traditional supply chains

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Thank you!

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