



# Composites are simple

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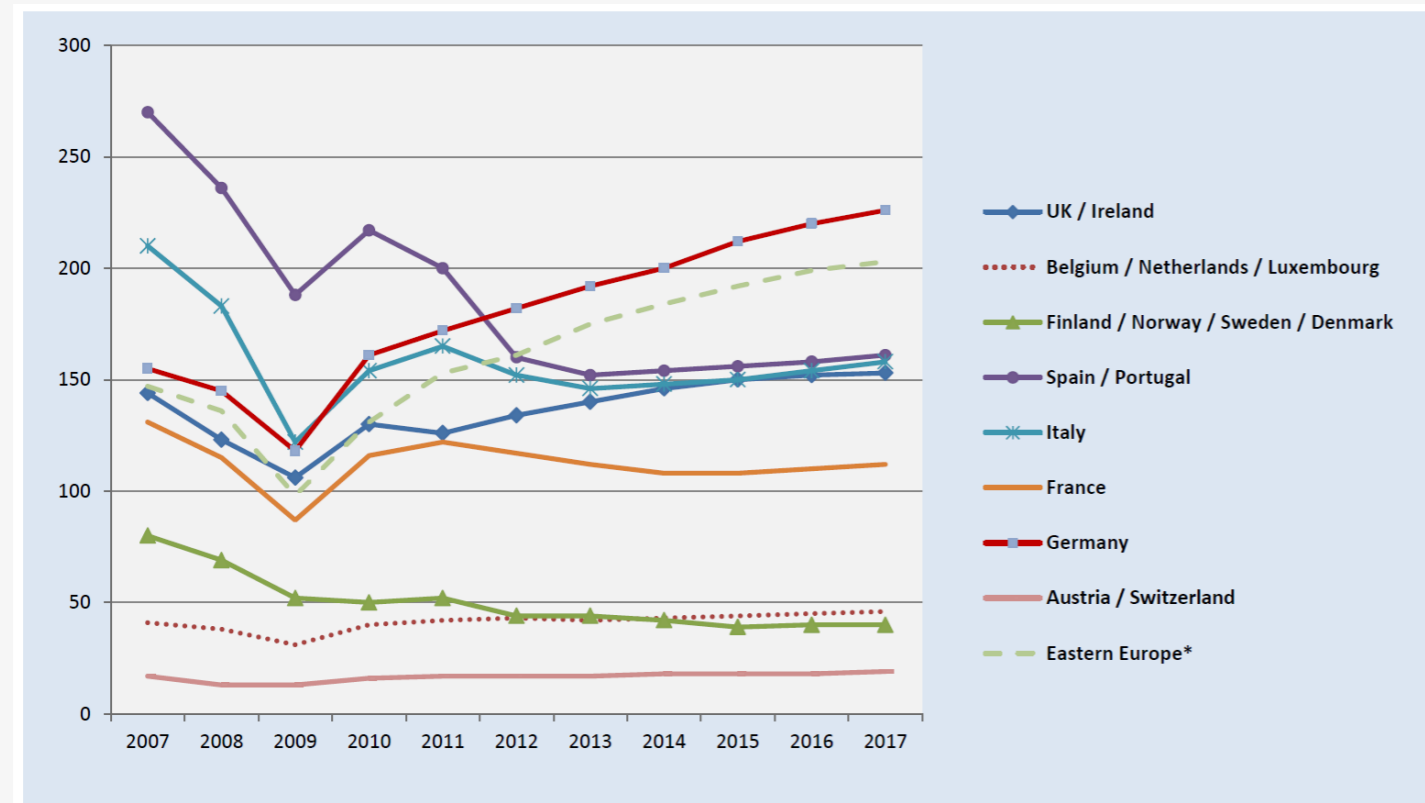
Polski Klaster Technologii Kompozytowych (PKTK)

Polish Cluster of Composite Technologies

Dr Andrzej Czulak

# Why Poland? Why Kraków and Warsaw?

## GRP Production Europe



2017 = estimated

\* Eastern Europe = Poland, the Czech Republic, Hungary, Rumania, Serbia, Croatia, Macedonia, Latvia, Lithuania, Slovakia, Slovenia

Source: AVK

## THOLONS TOP OUTSOURCING DESTINATIONS 2016

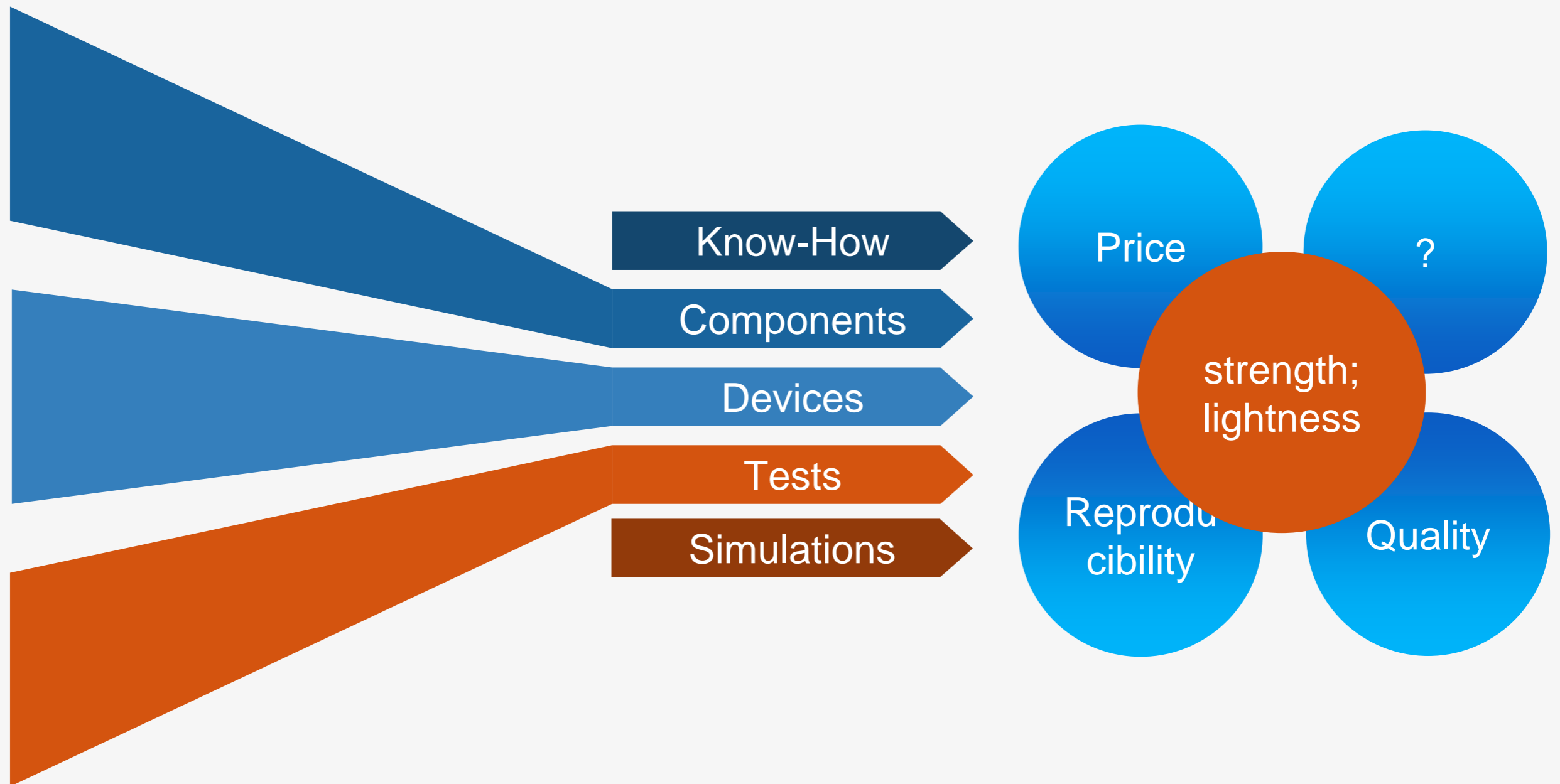
Rank 2016	Movement from 2015	Region	Country	City
1	-	Asia Pacific	India	Bangalore
2	-	Asia Pacific	Philippines	Manila (NCR)
3	-	Asia Pacific	India	Mumbai
4	-	Asia Pacific	India	Delhi (NCR)
5	-	Asia Pacific	India	Chennai
6	-	Asia Pacific	India	Hyderabad
7	+1	Asia Pacific	Philippines	Cebu City
8	-1	Asia Pacific	India	Pune
9	-	Europe	Poland	Kraków
10	+2	Europe	Ireland	Dublin
11	-	Americas	Costa Rica	San José
12	-2	Asia Pacific	China	Shanghai
13	-	Asia Pacific	China	Beijing
14	+1	Europe	Czech Republic	Prague
15	-1	Asia Pacific	China	Dalian
16	-	Asia Pacific	Sri Lanka	Colombo
17	+2	Asia Pacific	Malaysia	Kuala Lumpur
18	-	Asia Pacific	Vietnam	Ho Chi Minh City
19	+1	Asia Pacific	Vietnam	Hanoi
20	+1	Middle East and Africa	South Africa	Johannesburg
21	-4	Asia Pacific	China	Shenzhen
22	-	Asia Pacific	India	Chandigarh
23	-	Asia Pacific	India	Kolkata
24	+1	Europe	Hungary	Budapest
25	+5	Europe	Poland	Warsaw



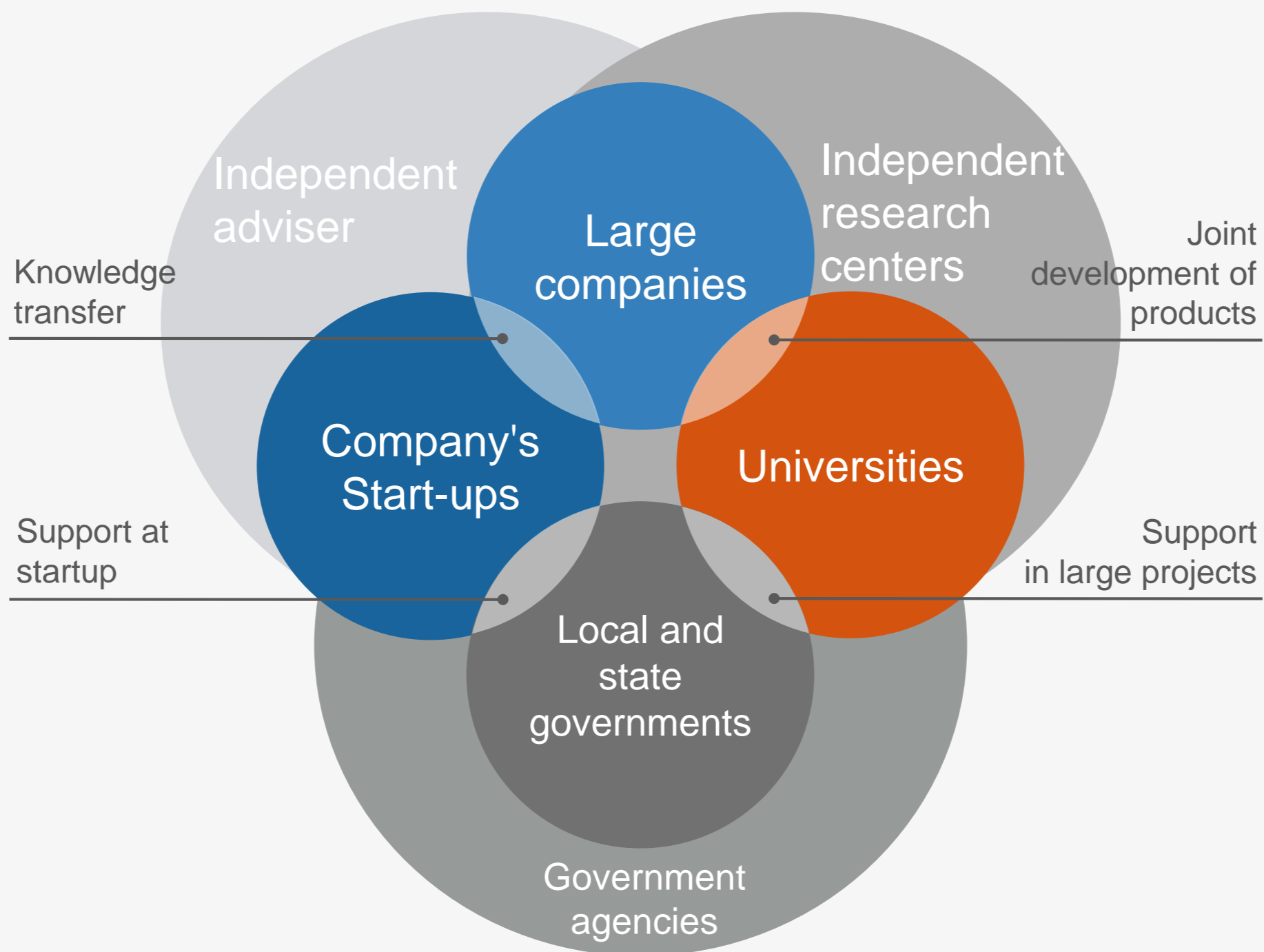
Source: Annual Global Services and Tholons Top Outsourcing Cities Ranking (scale and quality of workforce, business catalyst, financial, infrastructure, risk environment, quality of life)  
Three steps survey: business centers survey, government institutions, quantitative & qualitative Tholons consultants analysis

Source: Tholons, [www.businessinmalopolska.com](http://www.businessinmalopolska.com)

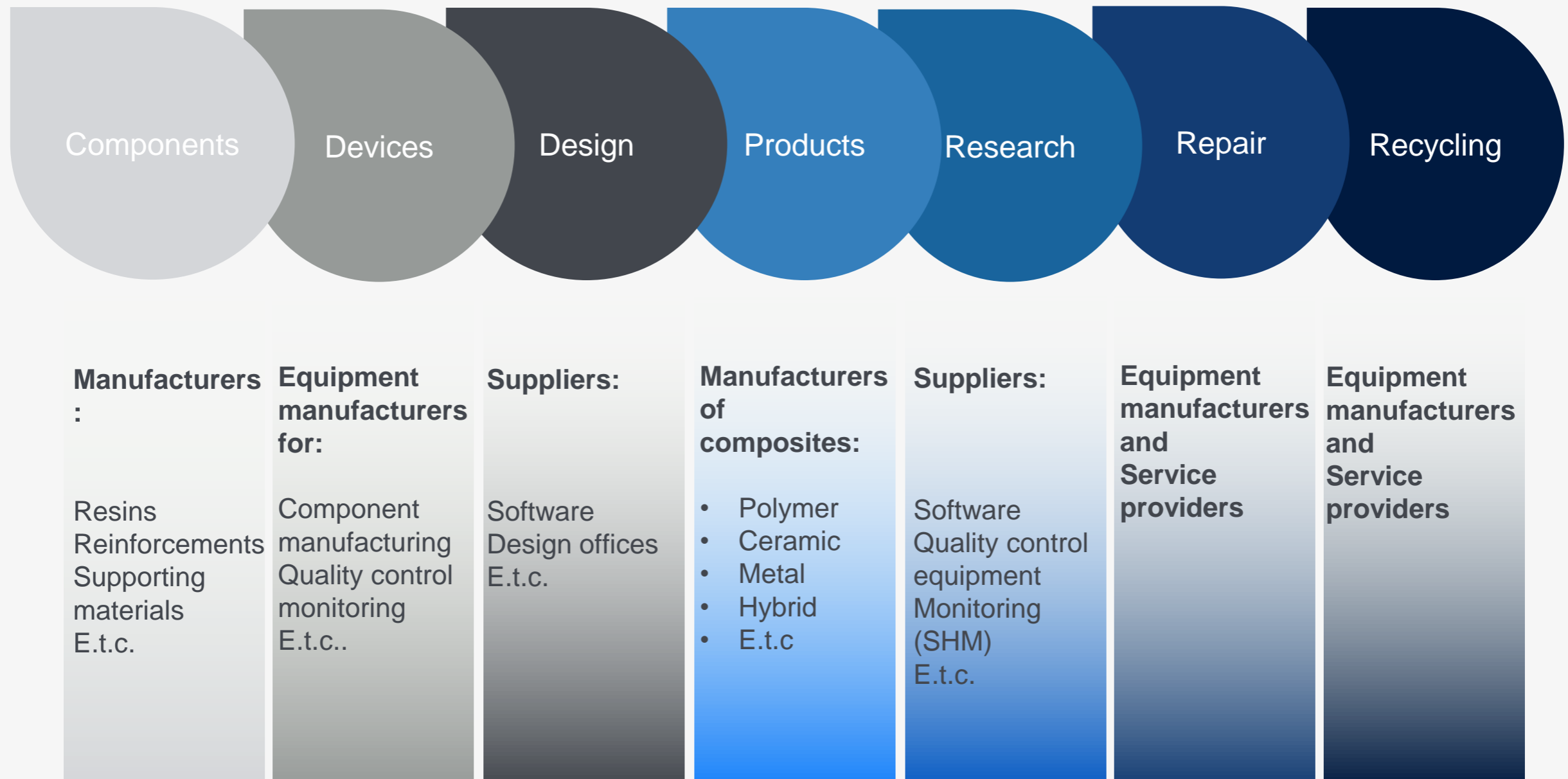
# Composites - material of the future



# Model of perspective cluster - 7 factors



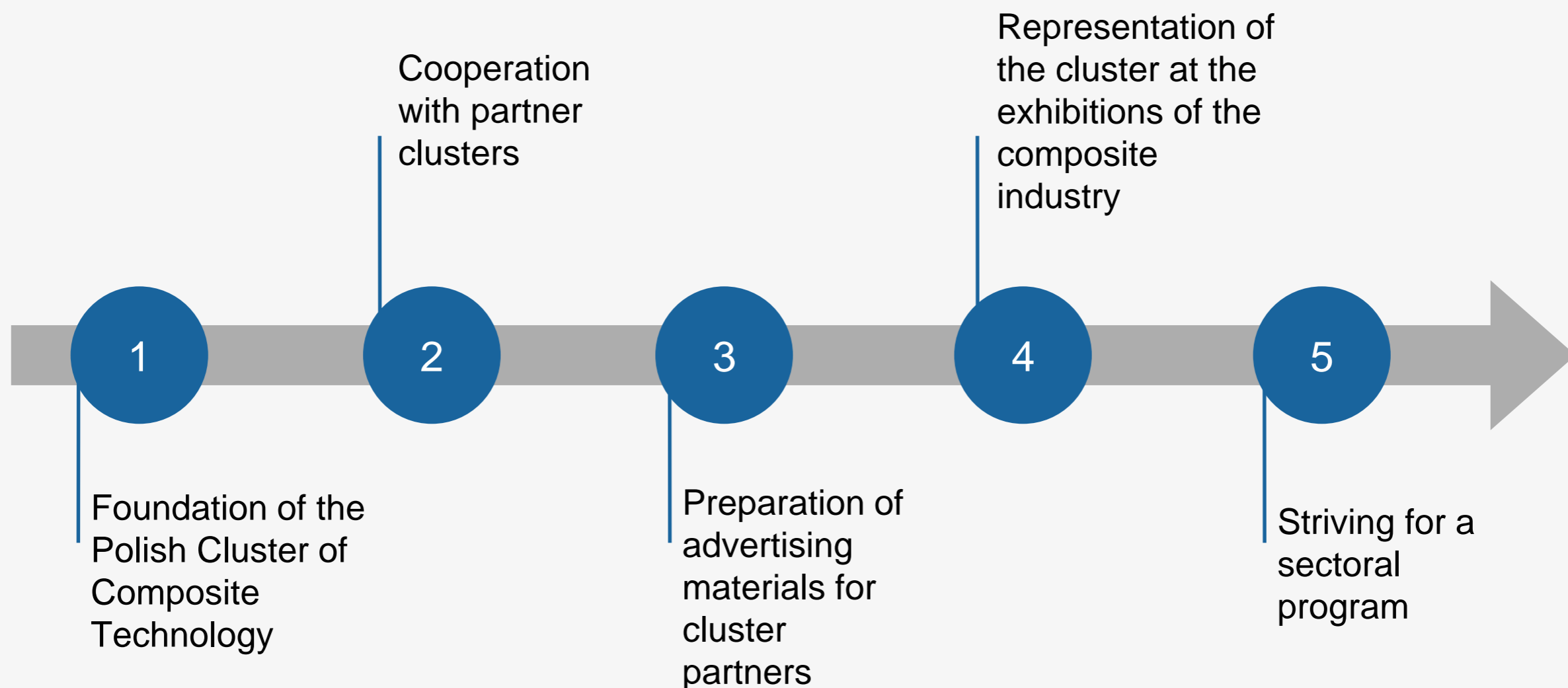
## Representative in cluster PKTK of the polish composite industry



## Main goals of the cluster PKTK

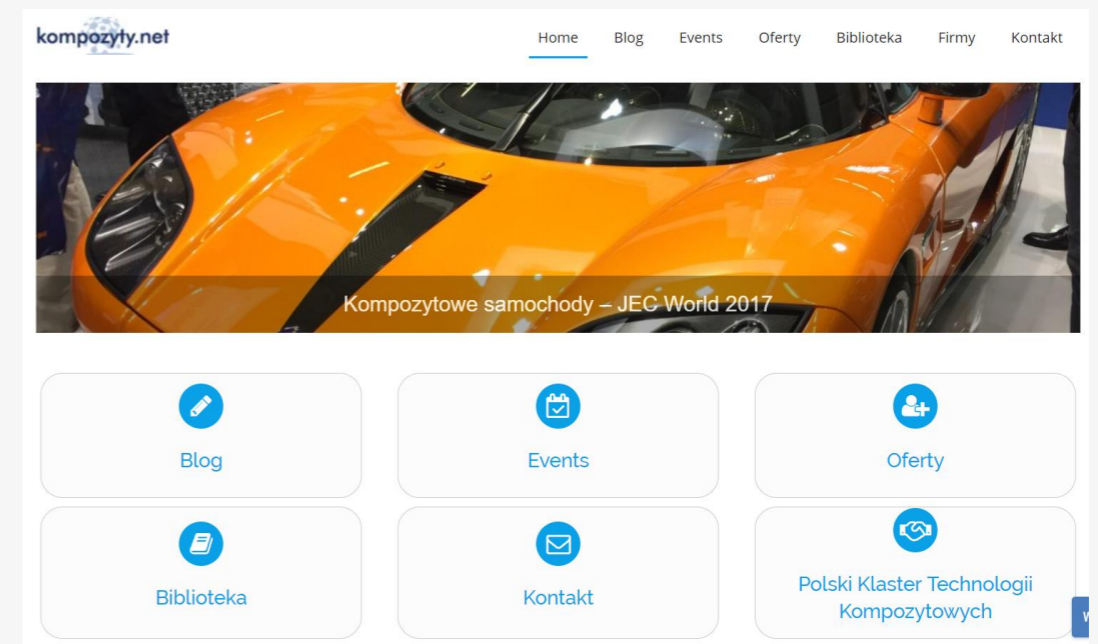
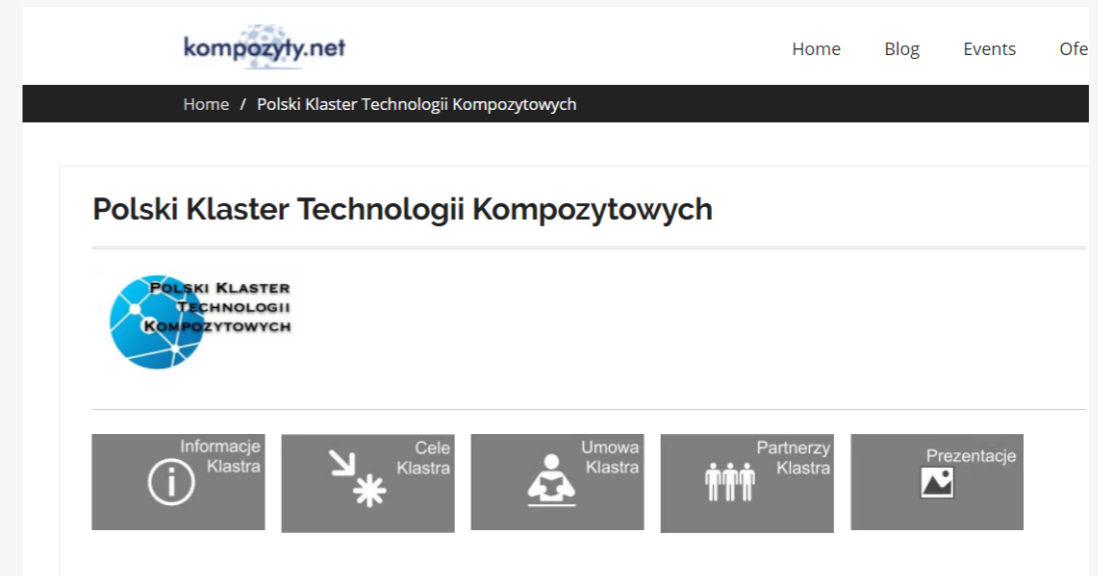
- Colaboration with international partners,
- Promotion of Polish technologies, companies and institutions involved in the production, research and design of composite elements in Europe,
- Promotion of internationale technologies, companies and institutions involved in the production, research and design of composite elements in Poland,
- Establishment a strong entity representing the needs of the composite industry,
- Improved promotion at Polish and international fairs and conferences,
- Improvement of knowledge in the field of composite materials,
- Implementation of joint research projects,
- Facilitating the cooperation of Polish companies with foreign partners,
- ...

# The next steps of cluster PKTK



# Website of the Cluster PKTK

- Located on Kompozyty.net - Composite website
- Easy exchange of information and advertising
- Open for international partners
- Improvement of knowledge in the field of composite materials
- Opening up an online store with products for composite technology
- Up to date information on important events in Poland and world
- ...





# More than 68 companies and institutions in cluster





- Who works alone, adds.
- Who works in networks, multiplies.
- However, those who work in clusters increase exponentially.

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