SWOT analysis of thematic objective 1 “Research, technological development, and innovation” of the Emilia-Romagna ERDF 2024-2020	
STRENGHTS	WEAKNESSES
• **Widespread presence throughout the region and attractiveness of universities**: 141,700 enrolled in 2012/2013: 8.3% of the national total; university attractiveness index 30.3%, an excellent figure in the national context, with a good presence of foreign university students equal to 6% of the total number of students enrolled, compared to 4% at the national level; • **Advanced training of the population aged 30-34**: 27.9% with tertiary education (34.2% for the female population), which is higher than the national target set in the PNR (National Research Plan); • **Graduates in technical and scientific disciplines**: the region has 18.3 science and technology graduates per thousand inhabitants aged 20-29, a figure higher than both the national (12.4) and European averages; over 30% of graduates in the region in the last year; • **Presence of a widespread network of ITS post-diploma training facilities** specializing in regional S3 areas; • **Presence of important national research institutions** (CNR, ENEA, INAF, INGV, INFN, INFM) accompanied by the Regional High Technology Network specializing in industrial research for companies with over 80 accredited facilities, organized into platforms consistent with the regional S3; • **Regional positioning improving in relation to the Regional Innovation Index**: from “medium” in 2007 and 2009 to “high” in 2011; • **Personnel employed in research and development**: higher incidence (1.24% of total employment) than at the national and European level; • **Patents registered with the European Patent Office**: patents originating in the region – although declining in recent years – account for 15% of the national total, with the best average number of patents per capita, above the European average; • **The propensity for innovation among regional businesses is higher than the national average**: 37.7% of businesses with at least 10 employees have introduced at least one innovation into their production process. • **Specialization in medium-high technology manufacturing sectors**: medium-high technology manufacturing sectors employ 8% of the region's total workforce, while they account for 4.8% in Italy and 4.5% at European level. In terms of exports, these sectors account for 52.6% of total regional exports (44.4% in the North and 38.5% nationally) and are particularly important areas in the development of the regional S3;	• **Advanced education below the European average**: in 2013, people aged 25-64 with tertiary education accounted for 17.8% of the total, which is higher than the national figure and also growing steadily, but lower than the European average (as also recorded for the 30-34 age group); • **Research and development infrastructure**: despite the presence of universities, research institutions, and the recent establishment of the Regional High Technology Network involving various stakeholders, industrial research remains excessively fragmented and unable to generate sufficient critical mass for businesses and the opportunities offered by European policies; • **Intensity of investment in Research and Development**: investment represents 1.43% of regional GDP, which is higher than the national average but lower than the EU15 average and the Europe 2020 targets; • **Difficulties for business growth and the consolidation and development of innovative and creative start-ups** capable of influencing the development of S3 areas; • **Modest position in the regional technology balance**: in 2009, Emilia earned only 0.25% of its revenue from the technology market compared to its revenue from exported goods; the sale of rights and know-how services by Emilia-Romagna represents only 5% of the national total; • **High knowledge-intensive services**: knowledge-intensive sectors – which include information and communication services, financial and insurance activities, professional, scientific, and technical activities, education, health, and social assistance, etc. – account for only 29.7% of total employment (33.8% nationally and 39% in the EU27);

OPPORTUNITIES	THREATS
• **Enhancement of production specializations** in broader markets as a result of increasing globalization; • **New emerging needs** and new demand in highly specialized sectors; • **Centrality in European policies of regional innovation ecosystems** aimed in particular at the small and medium-sized enterprise system; • **New European funds and programs** aimed at developing industrial research and innovation (Structural Funds, Horizon 2020, and EIP) and their international networking;	• **Persistent low national commitment to research and innovation;** • **Persistence of national deflationary policies** with consequences for domestic demand, welfare development, and knowledge systems; • **Delays in the levels and structuring of public and private research** with respect to new demand trends; • **High international competition**, including for high-tech production and activities; • **Our country is not very attractive to highly specialized professionals**, with precarious employment even among highly skilled workers (design, research, etc.), resulting in a “brain drain”;