CREATIVE ENGINE

Creativity and Innovation are often not developed in engineers



Creativity

is the ability to imagine something new





It is an active process and a state of mind



Innovation

is where an idea becomes something





It is the discipline of value creation

The **Creative Engine** project aims to integrate these skills into engineering education





So, to understand the skills needs of today's engineering industry, a **survey** was conducted

Five European partners from













- Employability opportunities;
- Entrepreneurial capabilities;
- > The ability to become leading engineers.





Co-funded by the Erasmus+ Programme





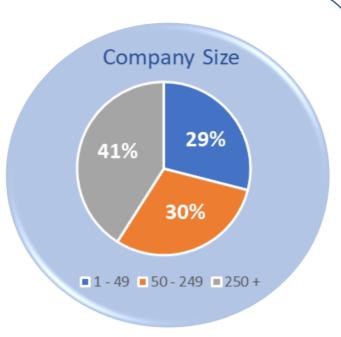






THE SURVEY

240 Engineering companies surveyed across the 4 countries



The survey's outputs are divided into 6 key areas

CREATIVITY & IDEAS MANAGEMENT

Do organisations <u>encourage</u> creative problem-solving by allocating space, time, funding and resources?





9 out of 10

companies encourage employee participation from different functions when they search for new ideas and solutions



However, 56% of them

do not assess creative problem-solving as part of an employee's performance appraisal



2 in 5 companies surveyed do not use metrics to determine which ideas go forward

Return on **Investment** is the most popular metric amongst the ones that do

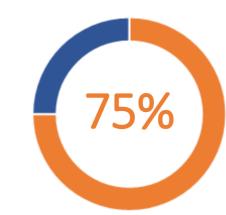




However, only half of them affirm that ideas are managed through a formal structured process

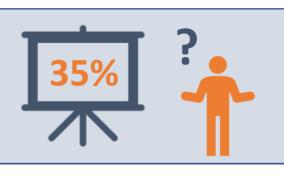


INNOVATION PROCESS & PLANNING



3/4 of organisations surveyed admit that their approach to innovation is not structured

If **value** is to be derived from innovation, there has to be a structure in its approach within an organisation



35% of companies acknowledge that they do not have an innovation plan that is aligned to their business strategy



And **3 in 5** affirm that the innovation plan is not communicated across the business and its stakeholders to gain their input and commitment

CUSTOMER ANALYSIS



54% of companies admit that their Engineering departments do not interact with customers directly to sense and identify needs and problems

Market Research is the preferred method

for identifying customer needs, employed by 77% of companies

Developing the communication skills of engineers can help improve customer interactions

MANAGEMENT OF NEW INNOVATIONS

When developing solutions and offerings, companies focus on:





Solutions and offerings are tested on customers in 7 out of 10 organisations

Prototyping/Piloting is the preferred technique, employed by 61% of those who test on customers

BUSINESS CASE DEVELOPMENT

Do companies use systematic business planning techniques to build the Business Case (BC) for a new solution?

Sometimes 28% 40%

31%

BC development is critical as part of the innovation process still, over two-thirds are not consistently using systematic techniques to support it

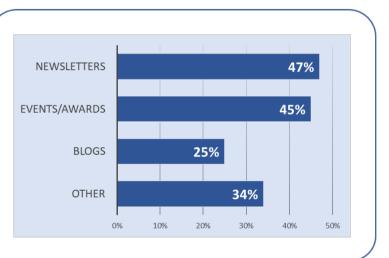
COMMUNICATIONS & ENGAGEMENT



4 in 5 organisations consider that their creativity and innovation training needs are not fully fulfilled

> Innovation activities are usually communicated and recognised through:

Such a response provides the reason why the outputs of the **Creative Engine** project are so important



NEXT STEPS

The Creative Engine team will use these results to help achieve intellectual outputs such as:

Applying innovation process to support **effective** planning and development of innovation

Understanding the importance of aligning innovation and **business** strategies

Developing Evaluating interpersonal & using metrics to support business development and growth

problem-solving skills in engineers

