INTRODUCTION

Richard Wheeler

- Background in education – teacher in mainland China for five years
- Post-graduate work at the University of Edinburgh in Artificial Intelligence
- Artificial intelligence and adaptive disease control systems for the World Health Organisation in Geneva
- Artificial Intelligence Applications Institute, Edinburgh
- Starlab Research, Brussels
- Public Voice Labs in Vienna, Austria
- Business Development Executive for the School of Informatics, UoE
- eseia, Edinburgh Scientific
- Focus: applied AI and machine learning for fault detection, medical informatics, inventing *(9 patents…)*

This Presentation

Why me?

- Have been a reviewer and vice chair on the main EU calls for the last ten years
- Technical Manager or Project Manager on 4+ big EU projects under the last three frameworks
- Now helping big consortiums write big proposals
- 13 of 17 proposals funded in the last two years (~38M Euro)
- I wrote the book…

- 60 Minutes – feel free to ask questions at any time
- *Not* an introduction to EU funding, but an overview of the EU proposal writing process, focusing on tips and tricks not in the *Guide For Applicants*
- *What really goes on at an EU review? Why did your proposal fail? How do idiots get funding?*
- Triple your chances of succeeding
- Ongoing Discussion
- Information dense, reference

Please do not distribute, it contains confidential information!

Horizon 2020

EU funding has tracks for almost every sector. Horizon 2020 is mostly for big universities and businesses working together.

HORIZON 2020

- Largest scientific funding programme of all time
- Funding usually between 75% (businesses) and 100% (universities) of eligible costs
- Call are getting much bigger budgets: was €2M - €4M, now €5M - €10M
- Calls are fewer, and much fewer projects funded; no negotiation

Co-operation Calls are usually topic-specific ("top-down") big projects between large groups of international partners. Keywords: competitiveness, co-operation.

People Calls are aimed at developing Europe's human resources. Keyword: training.

Capacities Calls encourage the growth of the knowledge-based economy, often through SMEs. Keyword: infrastructure.

Ideas Calls are usually small blue sky science projects and are "bottom up". Keyword: innovation.

Almost all EU funding calls share common proposal sections, and succeed or fail for the same reasons. This presentation is about those reasons.

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Something You Will Never Guess

It is easier to raise **€5M**

Something You Will Never Guess

It is easier to raise **€5M**

Than it is to raise **€5K**

Planning: Consortiums

Most H2020 instruments have four or more industry partners and three or more universities working in a *consortium* or network.

For industry and academia to work well together, they need:

- Strong, committed anchor persons who already have a relationship of trust
- Challenging research on all organisations' critical paths that all partners are excited about
- Clearly declared goals and success conditions for each partner
- Buy-in from the top of each organisation
- Each partner must have a clearly defined role

Consortiums

Things reviewers of proposals will be looking for:

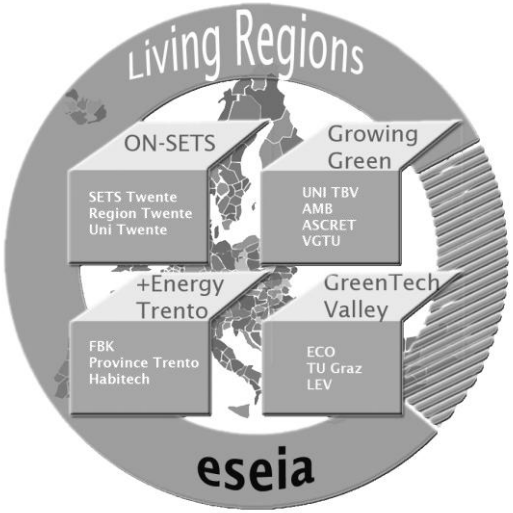
- The proposal presents a clear problem that will be addressed (scientific, economic, or structural), and a clear statement about why each participant in the consortium is necessary and is highly qualified to participate.
- The consortium partners have good relations, and have sufficient infrastructure to reliably undertake the work proposed.
- The consortium partners have complementarity, that is, they each have a necessary part to play in solving the problem addressed, and have synergy between them in the context of the proposal.
- Each partner has an active, engaged staff member whose background is a good fit for their role in the consortium and who will take charge of the partner's contribution.
- A lead partner who has proven experience in managing and successfully completing projects.
- The consortium seems likely to continue their work and collaboration well beyond the length of the funded project.

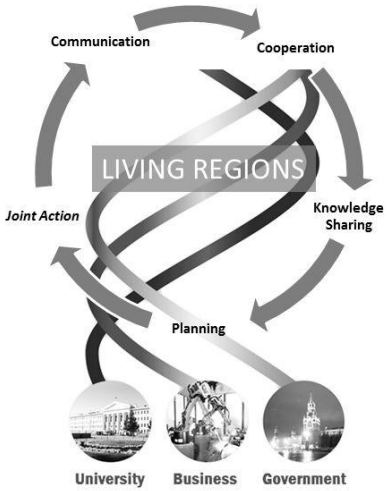
Consortiums

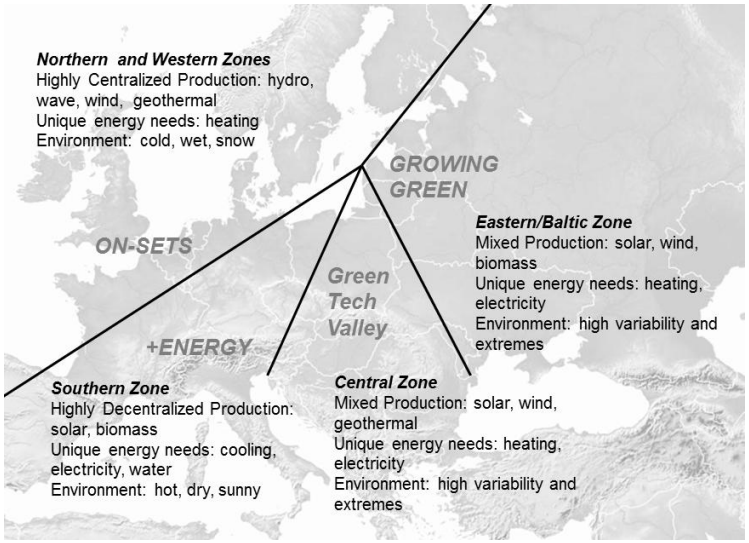
Tips and Tricks

- A good consortium should have partners in different EU regions – many partners from a single city or region signal to the EU that it is a “buddy network” that might be a poor funding value.
- If applicable, a good consortium should have partners from different sectors of the *triple helix of innovation*, each assigned to a task fitting their profile.
- It helps a proposal if the project or work proposed is situated along each organisation’s *critical path*.
- It helps if the consortium is presented as the only good combination of partners for addressing the project requirements.
- The EU has a “partner finder service” on their web site, but you are likely going to need to rely on your network of friends and professional contacts.

Consortiums: Practical

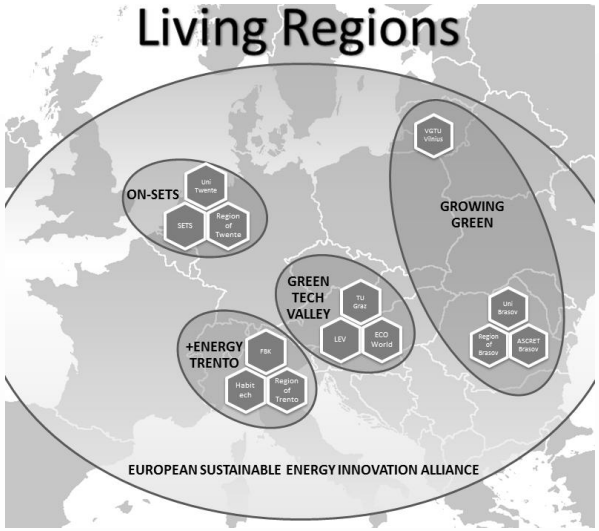






Consortium Maps:

- Cluster
- Sector
- Domain-specific
- Geographic
- …
- Knowledge, knowledge transfer, need…



Sharp, Simple Graphics.

Consortiums: Why They Fail

- Academia was unrealistic about the role and engagement of the industrial partners (project not on the partners' critical path)
- Poor communication about requirements and time commitments in the proposal writing process
- Poor organization
- Choosing partners to fulfill a *profile* rather than a necessary *role*
- SMEs in consortium only for the cash
- Industrial partners often unrealistically believe their organizations will give them sufficient time for the project
- Personnel changes and lack of buy-in; speed at which industry can change their priorities
- *I know a consortium awarded 6M Euro that has fallen apart in the 45 days between acceptance and negotiation*

Questions?

Why Proposals Fail

Applying for EU funding is primarily a *writing exercise.*

Proposals fail because they are not written properly. Most reviewers pass or fail the proposal after reading the first five pages (of 100+).

Here are some tips about how to succeed.

The Review Process

Generally the review process is very fair, but human nature being what it is…

- Three to five people express a preference for reviewing your proposal based on the abstract. Of the three, one will be an expert (CBR), one will be in your general field (AI), and one will be unrelated and possibly drafted in from another field (chemical engineering). One will speak and read English well, one not very well, and one very poorly.
- These reviewers read the proposal at home, often in pieces, and fill out a web form guided by specific criteria. Often they are tired and working late at night and cannot remember specifics, and so may review the proposal again or search it for keywords ("gender issues").
- They meet in Brussels for a half hour meeting, during which the most unreasonable person's views become the *consensus*. Comments from all reviewers are re-engineered to match the *consensus*.
- Statistics show a reviewer decides on the score and quality of your proposal within the first two pages; make them good. Reviewers often only remember the first sentence of a paragraph, so stick to **thesis style**.

The Review Process

Scoring…

- Reviewers know they will look bad if their marks deviate a lot from the other experts, and so two out of three will mark just above or below the thresholds on the vast majority of proposals.
- This pass/fail mentality creates an artificial statistical lump just above the overall threshold, and funding may end up being determined by differences in numbers that are below the margin of error (which is probably around 7 points).
- *For this reason, every single point out of 100 counts, and funding often hinges on the clarity of the writing.*

Proposal Writing

Though some proposals are built around poor consortiums or ideas (more later), ***most fail because they are not written clearly***.

Tips and Tricks

- Keep it simple and make certain all assertions are clearly supported in plain language. Write for two levels of audience: an expert in the domain, and an intelligent layman. The more specific your field, the less likely that the reviewers will be experts. *Reviewers read English as a second language.*
- Address all criteria by name required by the call text.
- Develop a common proposal narrative and link all sections to it.
- Do not recycle parts of old proposals or published papers – many reviewers now do web searches for key phrases to see if they appear on the web.
- Write in thesis style and strive for absolute clarity in your writing. Keep sentences short, English clear, and try to use the active voice.
- Have a native English speaker review and edit your proposal for clarity and run spell-checking and grammar checking utilities.
- Do not misrepresent anything in your proposal; even the most minor untruths can disqualify a proposal.
- Do not confuse sections of the proposal; cleanly divide the sections by their description and do not blend them together or allow them to overlap.
- Carefully check the electronic filing requirements of the proposal call and work to them to avoid difficulties at submission time.
- Use the language and terms specified in the call, but do not rephrase passages from the EU texts.

What, How, Who, Why.

S&T Section: *What*
Management & Implementation: *How*
Team: *Who*
Impact: *Why*

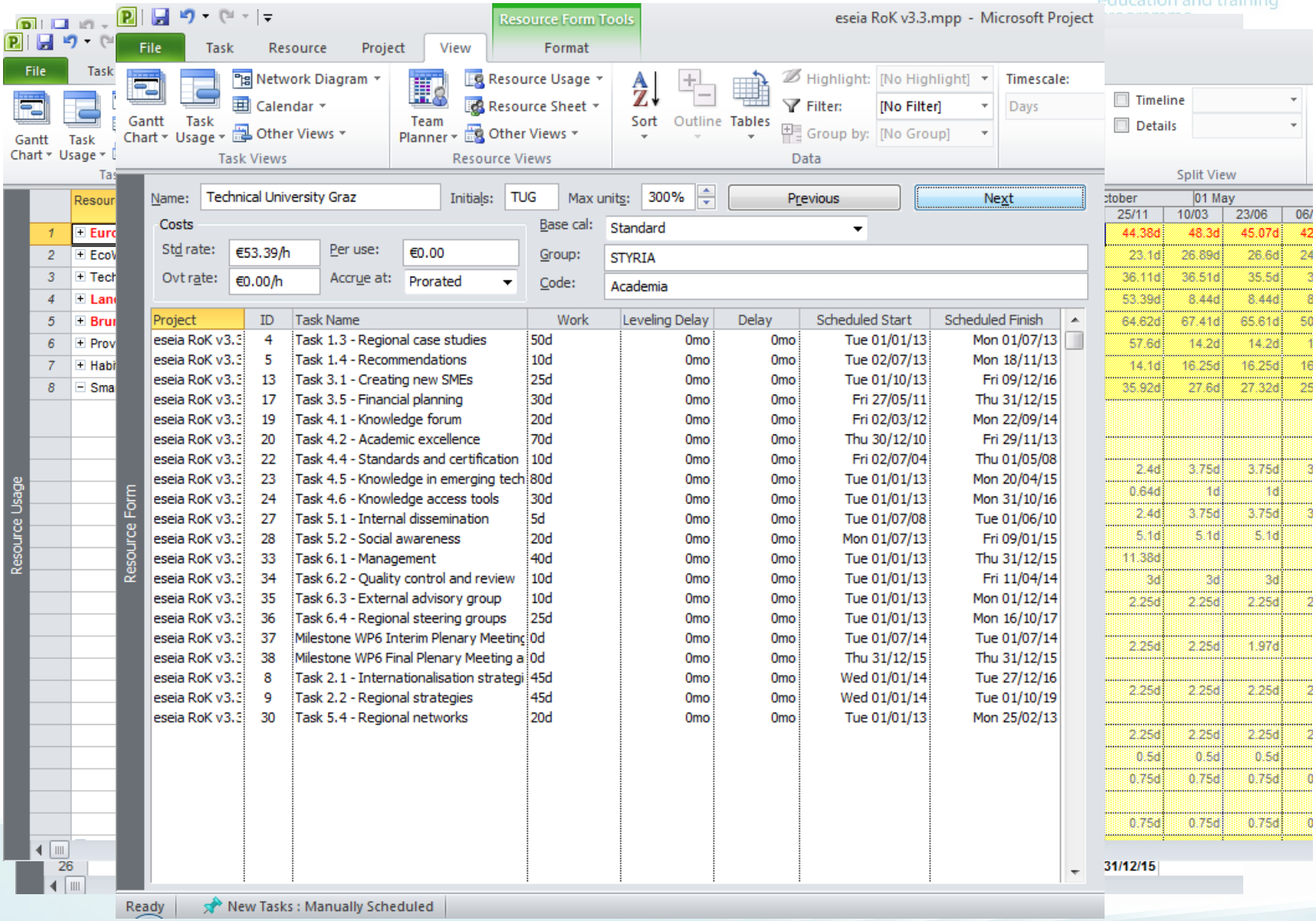
These sections have to follow a *common narrative* and do not overlap each other. They need to follow *thesis style.* A paragraph starts with a thesis and then supports it. Pretend reviewers will only read the first sentence of every paragraph. **Many will.**

Getting Started

1. **Download all call materials and templates.** Write a call briefing note and distribute it. Register with EMS/EPSS.
2. **Start with the budget and reverse engineer.** Find a good spreadsheet. Try MS Project.
3. **Try sitting down with all partners for two days and brainstorm:**
   - Outline a good concept.
   - Outline a good WP structure.
   - Assign lead roles for WPs.
   - Break down WPs into tasks.
   - Assign resources to tasks and balance the draft budget.

4. Do the finances first, including overheads.
5. Each partner goes away and writes the section they are responsible for.
6. One person always has control of the master copy.
7. **Prepare for last minute disaster.** Run sample renderings in greyscale, check your PDF writer. Pay attention to formatting.
8. Have your numbers checked five times. Part A *must match* Part B.
9. How many PART B versions on submission day? ***60.***

What It Looks Like: MS Project



What It Looks Like: XLS

FALLBACK TABLE

MAIN WP TABLE	PERSONNEL COSTS			1	2	3	4	5	6	7	8	9	10	11	12	
			WP value	JSI	TUD	CNRS	PUAS	TCD	TUW	KOL	SIEMENS	VAC	VALEO	DAIMLER	TEMAS	
Project Management	MGT	WP1	34.00	**8**	1	1	1	1	1	1	1	1	1	1	16	
Materials Modelling	RTD	WP2	126.00	0	0	18	**36**	36	36	0	0	0	0	0	0	
Microstructural Engineering	RTD	WP3	126.00	47	22	**53**	0	0	0	0	0	4	0	0	0	
Novel Hard Magnets	RTD	WP4	75.00	0	15	24	0	**36**	0	0	0	0	0	0	0	
Advanced Characterisation	RTD	WP5	128.00	47	**36**	10	0	5	25	0	0	1	0	4	0	
Strategic and Economic Aspects	RTD	WP6	22.00	0	4	0	0	0	0	4	3	**5**	3	3	0	
Assessment of Materials for	RTD	WP7	31.70	0	0	0	0	0	0	4	7.2	3	**16.5**	1	0	
Lifetime Properties		Totals	542.70	102.00	78.00	106.00	37.00	78.00	62.00	9.00	11.20	14.00	20.50	9.00	16.00	€ 4,

		JSI	TUD	CNRS	PUAS	TCD	TUW	KOL	SIEMENS	VAC	VALEO	DAIMLER	TEMAS
PERSON MONTHS	MGT	8.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	16.00
	RTD	94.00	77.00	105.00	36.00	77.00	61.00	8.00	10.20	13.00	19.50	8.00	0.00
	Total	**102.00**	**78.00**	**106.00**	**37.00**	**78.00**	**62.00**	**9.00**	**11.20**	**14.00**	**20.50**	**9.00**	16.00
PERSONNEL COSTS NO OVERHEAD	MGT	€ 40,000.00	€ 5,300.00	€ 3,429.00	€ 5,595.00	€ 5,057.00	€ 4,060.00	€ 8,000.00	€ 12,222.00	€ 8,025.00	€ 5,934.15	€ 8,560.00	€ 196,800.00
	RTD	€ 470,000.00	€ 408,100.00	€ 360,045.00	€ 201,420.00	€ 389,389.00	€ 247,660.00	€ 64,000.00	€ 124,664.40	€ 104,325.00	€ 115,715.93	€ 68,480.00	€ 0.00
	Total	€ 510,000.00	€ 413,400.00	€ 363,474.00	€ 207,015.00	€ 394,446.00	€ 251,720.00	€ 72,000.00	€ 136,886.40	€ 112,350.00	€ 121,650.08	€ 77,040.00	€ 196,800.00
PM Average Cost		€ 5,000.00	€ 5,300.00	€ 3,429.00	€ 5,595.00	€ 5,057.00	€ 4,060.00	€ 8,000.00	€ 12,222.00	€ 8,025.00	€ 5,934.15	€ 8,560.00	€ 12,300.00
Overhead		54.00%	60.00%	60.00%	60.00%	60.00%	60.00%	62.00%	72.00%	50.00%	66.00%	78.00%	60.00%
Peronnel + Overhead		€ 7,700.00	€ 8,480.00	€ 5,486.40	€ 8,952.00	€ 8,091.20	€ 6,496.00	€ 12,960.00	€ 21,021.84	€ 12,037.50	€ 9,850.69	€ 15,236.80	€ 19,680.00
Travel RTD													
Travel MGT		€ 9,000.00	€ 6,000.00	€ 6,000.00	€ 6,000.00	€ 6,000.00	€ 6,000.00	€ 6,000.00	€ 6,000.00	€ 6,000.00	€ 6,000.00	€ 6,000.00	€ 6,000.00

Finances | A3 Generator | GANTT | Rough WPs and Tasks | Graphics | Fallback | Staff Effort table for Part B

What It Looks Like: Part A

Proposal Submission Forms

EUROPEAN COMMISSION

7th Framework Programme on Research, Technological Development

A3.2: Budget

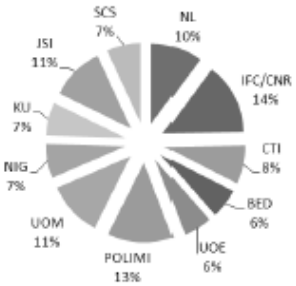
			Estimated budget (whole duration of the project)									
Participant Nr	Organisation Short Name	Organisation country	RTD	Demonstration	Training	Coordination	Support	Management	Other	Total	Total receipts	Requested EU contributions
1	TU Graz	AT	1080800	0	0	0	0	431720	374000	1886520	0	1616320
2	ACCIONA	ES	108600	0	0	0	0	0	2040	110640	0	83490
3	BUW	DE	624000	0	0	0	0	4600	8000	636600	0	480600
4	CEETZ	BA	166400	0	0	0	0	0	2720	169120	0	127520
5	DINAMIACET	PT	31421	0	0	0	0	0	2040	33461	0	25606
6	ECO Choice	PT	85014	0	0	0	0	0	2720	87734	0	66480
7	eseia	AT	0	0	0	0	0	0	52800	52800	0	52800
8	EURAC	IT	134240	0	0	0	0	0	9600	143840	0	110280
9	FBK	IT	286880	0	0	0	0	0	43200	330080	0	258360
10	FHN	DE	521222	0	0	0	0	4600	5440	531262	0	400956
11	Graz	AT	95000	0	0	0	0	0	17120	112120	0	88370
12	HLI	LI	1098112	0	0	0	0	7600	8000	1113712	0	839186
13	HELIOPOLIS	IT	147200	0	0	0	0	0	2720	149920	0	14520
14	IPL	PT	47400	0	0	0	0	0	2040	49440	0	37590
15	IST	PT	79938	0	0	0	0	0	2234	82172	0	62188
16	Lisboa E-NOVA	PT	93432	0	0	0	0	0	2040	95472	0	72115
17	Lisbon	PT	96800	0	0	0	0	0	17120	113920	0	89720
18	LNEC	PT	59717	0	0	0	0	0	2234	61951	0	47021
19	LNEG	PT	281286	0	0	0	0	0	2234	283520	0	213199
20	nexus	DE	424400	0	0	0	0	1600	5440	431440	0	325340
21	Obidos	PT	31556	0	0	0	0	0	6246	37802	0	29911
22	pbr AG Hamburg	DE	77550	0	0	0	0	0	1870	79420	0	60033

What It Looks Like: Part B

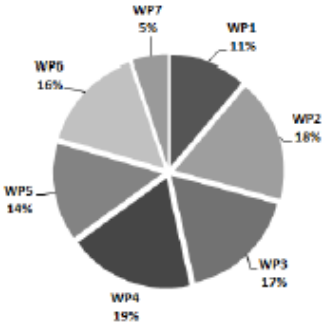
2.4 *Resources to be committed*

The resources to be committed to the project are very well balanced between partners and across countries and work packages (there being minor variations due to a diversity of partner average hourly personnel rates), with the only significant other direct costs being travel. The balance of resources to tasks and within work packages was benchmarked against similar recent projects and the total spend for a project of this size against projects of previous funding rounds. All work packages and other costs are directly incurred through measures necessary to accomplish and coordinate stated project goals.

Distribution of Funding



Resources Per WP



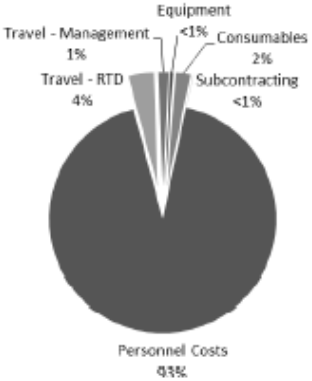
2.4.1 *Personnel costs*

As an ICT research and development project, the majority of the funding requested for I-CARES is accounted for by personnel costs (93%). This is a function of the high level of collaboration and technical development needed for the project's main activities. Time has also been allocated to project management (WP7), in order to maintain the contact between the consortium which comprises eleven partners across four clusters and the European Commission, and in order to assure managerial and financial soundness.

2.4.2 *Other Direct Costs*

Other direct costs within the I-CARES project are low (around 7%), with travel necessary for cooperation and technical work activities being by far the largest share (4% of the total budget), and non-personnel, non-travel cost being around 3%.

Costs By Category



2.4.3 *Subcontracting*

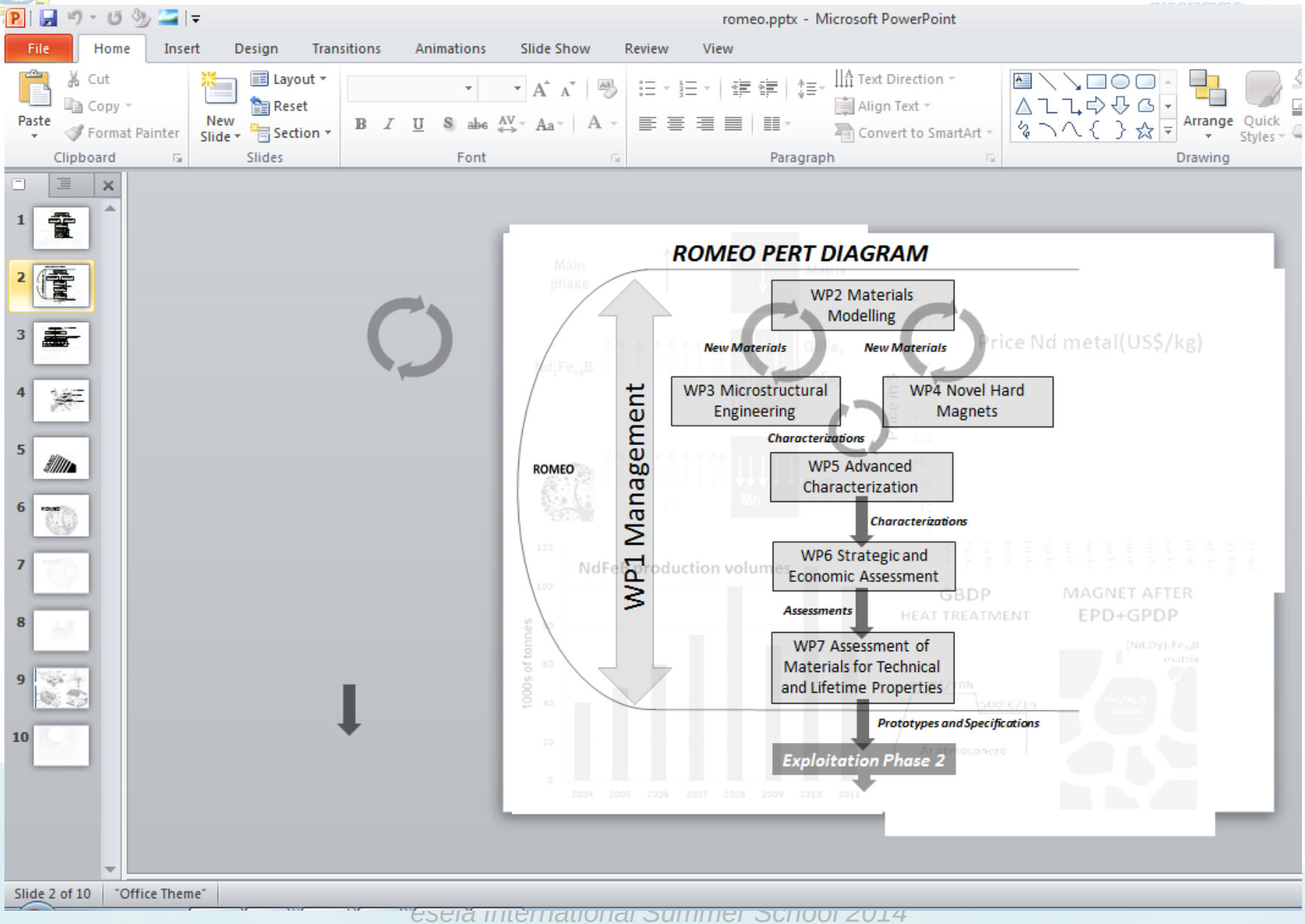
Subcontracting is planned only for those tasks where external expertise is necessary for the project (for example, professional translation of dissemination materials, outsources medical services), and is around less than 1% of the total budget.

2.4.4 *Overheads and Total Budget*

Partner		Overhead calculation
Graz University of Technology	5	OVERHEAD AT 7%
ECO WORLD STYRIA	0	OVERHEAD AT 7%
Landes Energie Verein Steiermark	0	OVERHEAD AT 7%
Bruno Kessler Foundation	8	OVERHEAD AT 7%
Province of Trento	5	OVERHEAD AT 7%
Habitech	4	OVERHEAD AT 7%
Region of Twente	2	OVERHEAD AT 7%
University of Twente	0	OVERHEAD AT 7%
Smart Energy Technology and Syste	0	OVERHEAD AT 7%
Brasov Transilvania University	0	OVERHEAD AT 7%
Brasov Metropolitan Agency	0	OVERHEAD AT 7%
ASCRET	0	OVERHEAD AT 7%
Vilnius Gediminas Technical Univers	4	OVERHEAD AT 7%
European Sustainable Energy Innov	6	OVERHEAD AT 7%
Travel	0	NO OVERHEAD
Printing and Web Services	0	NO OVERHEAD
Computing and Equipment	0	NO OVERHEAD
Subcontracting	0	NO OVERHEAD
Other Direct Costs	0	NO OVERHEAD
	5	EC Contribution

* Note that total pa ... ct costs as separate items for clarity, while th

What It Looks Like: PPT



Questions?

Writing: Science and Technology

Amazingly, most proposals fail the S&T section, which should be the easiest to write.

Why Proposals Succeed on S&T Quality

- Clear introduction and abstract
- Clear state of the art that links to the research proposed
- Research is situated in the field and its importance clearly stated
- Research methodology is well described
- Research outcomes are specified
- Includes descriptions for both experts and laymen

Why Proposals Fail on S&T Quality

- A problem is specified without presenting the solutions to be explored and tested
- Applicants have taken texts from research papers
- State of the art unclear or not properly referenced
- Research outcomes not well specified
- Methodology is not well described
- Too much background knowledge is assumed of the reviewers

S&T Writing: Example

1.1.2 *Smart Buildings, Resource Efficiency, and Europe*

"Buildings are at the core of the European Union's prosperity. They are important to achieve EU's energy savings targets and to combat climate change whilst contributing to energy security. An enormous unrealized savings potential lies dormant in buildings. The recast of the Energy Performance of Buildings Directive (2002/91/EC) will activate this, also boosting sustainable investments and job creation, often in SMEs, across Europe. More energy efficient buildings provide better living conditions and save money to all citizens." - (EU Energy Performance of Buildings Directive)

EU NEED

Figure 1 - A smart building is the integration of new building methods, technology, and energy systems to provide advanced resource efficiency, sustainability, interactivity, and comfort within the built environment. (Living Regions)

Raising resource efficiency in the built environment is one of Europe's most significant R&D, policy, industrial, and social challenges of the next fifty years[3]. The *Living Regions ROK* will directly address cooperation aspects of the strategic challenges described in the key EU policy document *"A resource-efficient Europe – Flagship initiative under the Europe 2020 Strategy"*[4] by creating a *Joint Action Plan* that will assist in making key European clusters leaders in resource efficient sustainable building. The emerging field of *smart buildings* (high resource efficiency buildings enabled by advanced materials and ICT) sits at the intersection of some of Europe's greatest challenges: climate change, energy insecurity, accelerating urbanisation, economic instability, and increasing globalisation. By raising resource efficiency, smart buildings will address many of these pressing issues directly.

THESIS

SUPPORT

RESULT

Smart buildings and Living Regions will help address climate change. Energy consumption in residential and tertiary buildings account for 40% of the EU's total energy consumption and 36% of its CO_2 emissions (about half of the CO_2 emissions not covered by the Emission Trading System - the construction sector also uses about one third of all the raw materials produced in Europe[5]). The energy efficiency of buildings forms a key component of broader initiatives for achieving EU energy and climate change objectives (improving energy efficiency is a priority in all decarbonisation scenarios), as outlined in the Commission Communication *Energy Policy for Europe*[6], the EU's *Energy Roadmap 2020*, the 20-20-20 initiative, the recast of the *Energy Performance of Buildings Directive* (EPBD), and many other

THESIS

SUPPORT

S&T Writing: Innovation

Innovation and originality are common criteria that receive low marks!

Tips and Tricks

- The *state of the art* section must clearly describe current work in the field, and the limitations of current approaches.
- An *innovation statement* needs to clearly describe how your research will advance the field, the possible outcomes, and what the scientific impact might be.
- An *originality statement* needs to explain why your approach has not yet been tried, why it is not obvious to others, and why your consortium are the only ones to take it forward.
- *Be clear:* "The proposal is *innovative* because it will advance the state of the art by…", "The proposal is *original* because…"

"*ROMEO is innovative.* It will significantly advance the state of the art useful across industries by exploring breakthrough ideas and developing innovative technologies and alternative materials that will enable Europe to regain a leading position in the permanent-magnet market, a revitalised market that will no longer be artificially distorted by a lack of easily available REs and especially HREs. To achieve these…" … ***"ROMEO is original.* It will be the first consortium to apply the emerging techniques of…"**

Questions?

Writing: Knowledge Transfer

Knowledge transfer is now a required part of most proposals, and in some programmes, constitutes the declared goal.

Depending upon the EU funding scheme, a ToK programme might be:

- A fellow spending a year in another EU country to gain missing skills in an important field
- A fellow spending a year in industry gaining practical experience
- Two administrators exchanging places to learn new management processes
- A large conference where academics present new discoveries
- The creation of a new joint degree between two universities
- A programme for industry and academia to meet with government policy makers and share knowledge of a common problem

Writing: Knowledge Transfer

Tips and Tricks

- The knowledge transfer agenda should clearly present how it addresses *knowledge and capability gaps* in the field, and how it links in with the *personal career development plans* of all those concerned.

  Example: *"In line with his declared career development plan, Mr. Huxley will address his skills gap in kernel methods by attending and being certified in the courses TUG313 Kernel Computational Methods and TUG911 Advanced Statistical Mathematics* in Q3/Y2*".*

- **All KoT activities should link directly to the needs of the research agenda.**

- *Complementary skills* development must be clearly described in concrete detail.

  Example: *"Dr. Wells will gain valuable management experience through 40 hours of mentoring by the head of department, Professor Verne, and 60 hours managing the project's main research component".*

- **Focus on the *outcomes* of the knowledge transfer as matching career development goals and filling gaps in European competence, and be specific about the mechanisms and timing.**

Writing: Knowledge Transfer

A *knowledge transfer map* is a table or figure showing who has critical knowledge, who needs it, and how it relates to the overall *knowledge management plan.*

Partner	Competency	Need	Provider
KTH	Modelling	AI	<- JSI
JSI	AI	Applied Maths	<- UoM
TUG	Green Tech	Power Systems	<- SIEMENS
UoM	Applied Maths	Power Systems	<- SIEMENS
SIEMENS	Power Trains	AI, Modelling	<- JSI, KTH
UoD	New Methods	Applied Maths	<- UoM

WP	Knowledge	Partners	Critic
1	Maths, AI, Modelling	JSI, KTH, UoM, Siemens	JSI, K UoM
2	Applied	Siemens, KTH, TUG	Siem

Writing: Knowledge Transfer

Another kind of KM plan: monitoring and management.

protection. Knowledge management for the I-CARES project is divided in knowledge brought to the project, knowledge developed within the project and knowledge aimed at beyond the project:

Knowledge	Issue	Responsible partner(s)	Results
Knowledge input to the project	State of the Art	All technical partners, auditors	Awareness about technologies s.o.a.
Knowledge inside the project	Knowledge exchange and sharing	All partners	Web-based communication infrastructure
	Definition, creation and protection of Intellectual Property	All partners, IPR activities	Patents, IPR management
Knowledge beyond the project	Dissemination	All partners, Dissemination activities	Public project description, public web site, papers, workshops, conferences, concertation meetings
	Exploitation	Exploitation activities	Exploitation Plan

Table 11: I-CARES Knowledge Management Plan

Writing: Exchange Programmes

Exchange programmes and training structures are tricky to write and rely entirely on providing in-depth detail.

Tips and Tricks

- ***Provide concrete detail about every person being exchanged, when, where, and for what purpose and outcome.*** Provide a chart showing movement and knowledge being transferred and how it relates to knowledge gaps, career plans, and core research.
- ***Bad:*** *"Students will be able to choose from any of the 112 courses offered and will be assigned an appropriate academic mentor." … "An orientation will be offered".*
- ***Good:*** *"To address the stated knowledge gaps in line with the declared career development plans, students will attend and be accredited with the courses in the following timetable…" … "students will be individually mentored for three hours a week by head of department Professor Genet or Professor Emeritus Camus who will be responsible for each student's career development and research." "Three four-hour orientation sessions will be provided at the Nabakov International Students' Centre on the first three days of programme commencement, where students will be given…".*
- ***Career development plans, knowledge gaps, knowledge network development***

Questions?

Proposal Writing: Management & Implementation

Very few proposals have a realistic management plan.

Management & Implementation

Be comprehensive. Get help. Show *how.*

Tips and Tricks: WPs, Tasks, Milestones, Deliverables

- *Tasks* have timings, risks, dependencies, outcomes, and rationale linked to a work package.
- *Work packages* bundle tasks into discrete *outcomes, deliverables, and milestones* and require resources and personnel.
- *A GANNT chart* shows the organisation of work packages and timings and the flow of resources and personnel.
- A *management description* clearly describes who will be responsible for what, and how decisions will be made and risks managed. Every work package has a *leader*, and the leaders likely constitute a *board*. Every activity in the project requires a person named as responsible.
- Address issues of quality management and assurance, and how unforeseen challenges will be addressed.
- Do **not** over-do deliverables and milestones. 3 deliverables per WP, 5 milestones per project, 7 WPs per project, no more than 6 tasks per WP.
- *Most fail this criterion because the project's goals are not clearly linked to the management process. Present* ***processes****.*
- *Do not use an old project's management section.*

Management Structure

2.1 Management structure and procedures

The Living Regions project has set clear objectives and shares a common vision, success conditions, and goals. The consortium as a whole has strong complementarity, with each participant bringing their own specific knowledge and capabilities. Almost all tasks are cooperative and are shared amongst partners and clusters, and so the project as a whole requires very strong management and internal communication to ensure the smooth running of the project. Effective control and decision making is achieved through a dedicated project work package (WP6) and structure, schematically shown here.

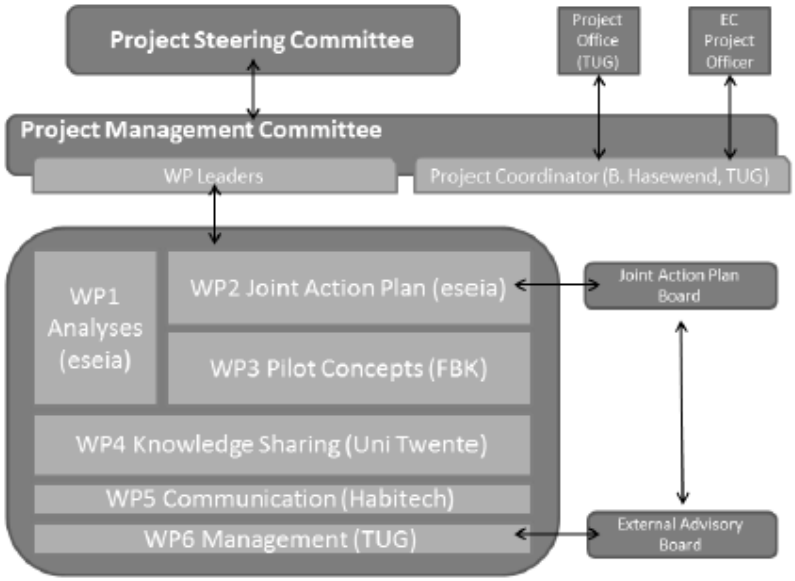


Figure 8 - Project Management Structure

2.1.1 *Project Coordinator*

The *project coordinator* (PC) will be responsible for organizing project activities, and with overall management of the project. She will monitor and report on the progress of the project and on its conformity to the project plan, and will represent the project to external organisations. The PC will also be the intermediary and primary contact with the European Commission. She will assist, when necessary, the work package and task leaders and ensure that communication between the WPs proceeds as smoothly and in as integrated a manner as possible.

2.1.2 *Project Steering Committee*

The *Project Steering Committee* (PSC) forms th
Its remit includes technical, financial, coordination

Activity	Decision by	Main input from
Change of work plan, shift of project activities among partners, assignment of unforeseen tasks, resolution of conflict, management of an underperforming partner	PSC	PC + WPLs
Approval of activity reports and deliverables to the EC	PMC	PC + WPLs
Inclusion and withdrawal of partners	PSC	PC + WPLs
Appointment of PMC members	PSC	PC + WPLs
Appointment of new WPLs and TLs	PMC	PC + WPLs

Management & Implementation

1.3.3 A detailed work description broken down into work packages

Table 1.3 a: Work package list

Work package No[18]	Work package title	Type of activity[20]	Lead participant No[21]	Lead participant short name	Person-months [22]	Start month[23]	End month
WP1	Analyses: Survey, research, and market analysis of research driven Smart Building activ	COORD	14	eseia	22.52	1	15
WP2	Joint Action P coordinated r strategies an						
WP3	Pilot Concept future co-ope activities, pilo financial plan						
WP4	Knowledge S Creation of n and networks						

Table 1.3 b: Deliverables List

Del. no.	Deliverable name	WP no.	Nature [25]	Dissemin -ation level[28]	Delivery date
6.4	Quality control white book	6	R	PP	Month 2
5.5	Draft Branding Portfolio	5	O	PP	Month 3
1.1	Comprehensive regional and global market survey of the sma	1	R	PP	Month 6
4.2	Sur				
4.6	Rep				
1.2	Ana				
1.3	Rep and				
6.1	Cor				
1.4	Rec Acti				

Table 1.3 c: List of milestones

Milestone number	Milestone name	Work package involved	Expected date[27]	Means of verification[28]
1	Knowledge Exchanges Start	WP4	Month 6	Report on knowledge exchanges submitted
2	WP1 Completed	WP1	Month 15	Reports submitted
3	Project Mid-Term Review	All	Month 18	Reports submitted
4	Joint Action Plan Completed	WP2	Month 24	WP2 final deliverables submitted
5	Project Completion	All	Month 36	Final deliverables submitted

Management WP Frame

Table 1.3 d: Work package descriptions

Work package number	WP1	Start date or starting event:				Month 1	
Work package title	Analyses						
Activity Type[25]	COORD						
Participant number	1	2	3	4	5	6	7
Participant short name	*TU Graz*	*ECO*	*LEV*	*FBK*	*PAT*	*Habitech*	*Region Twente*
Person-months per participant:	1.97	3.12	0.99	1.32	0.00	0.99	0.00
Participant number	8	9	10	11	12	13	14
Participant short name	*Uni Twente*	*SETS Twente*	*UTBV*	*MAB*	*ASCRET*	*VGTU*	*eseia*
Person-months per participant:	1.64	1.97	4.27	0.00	0.99	3.29	1.97

Objectives

Survey, research, and market analyses of research driven smart building activity in Europe and Globally

Description of work (possibly broken down into tasks), and role of participants

Forming the core input for the creation of the Joint Action Plan, WP1 will perform a detailed

Task 1.4 - Recommendations - Led by the University of Twente and assisted by TU Graz, eseia, VGTU, and ECO), this task will create a comprehensive planning document offering developmental recommendations for the creation of the Joint Action Plan drawing empirical grounding for developing effective regional development strategies and actions by the consortium from the market analyses, SWOTs and case studies. Task analyses will focus on cross-region synergies and opportunities for exchange of knowledge, best practices, mentoring for capacity building, and cooperation between the trans-national actors involved in the regional research driven clusters. Recommendations will be organised along the dimensions of international strategies, regional strategies, business development, social acceptance and community building, governance, knowledge and expertise management, and new financial methods.

Milestones: 2 - WP1 Completed, Month 15

Deliverables (brief description and month of delivery)

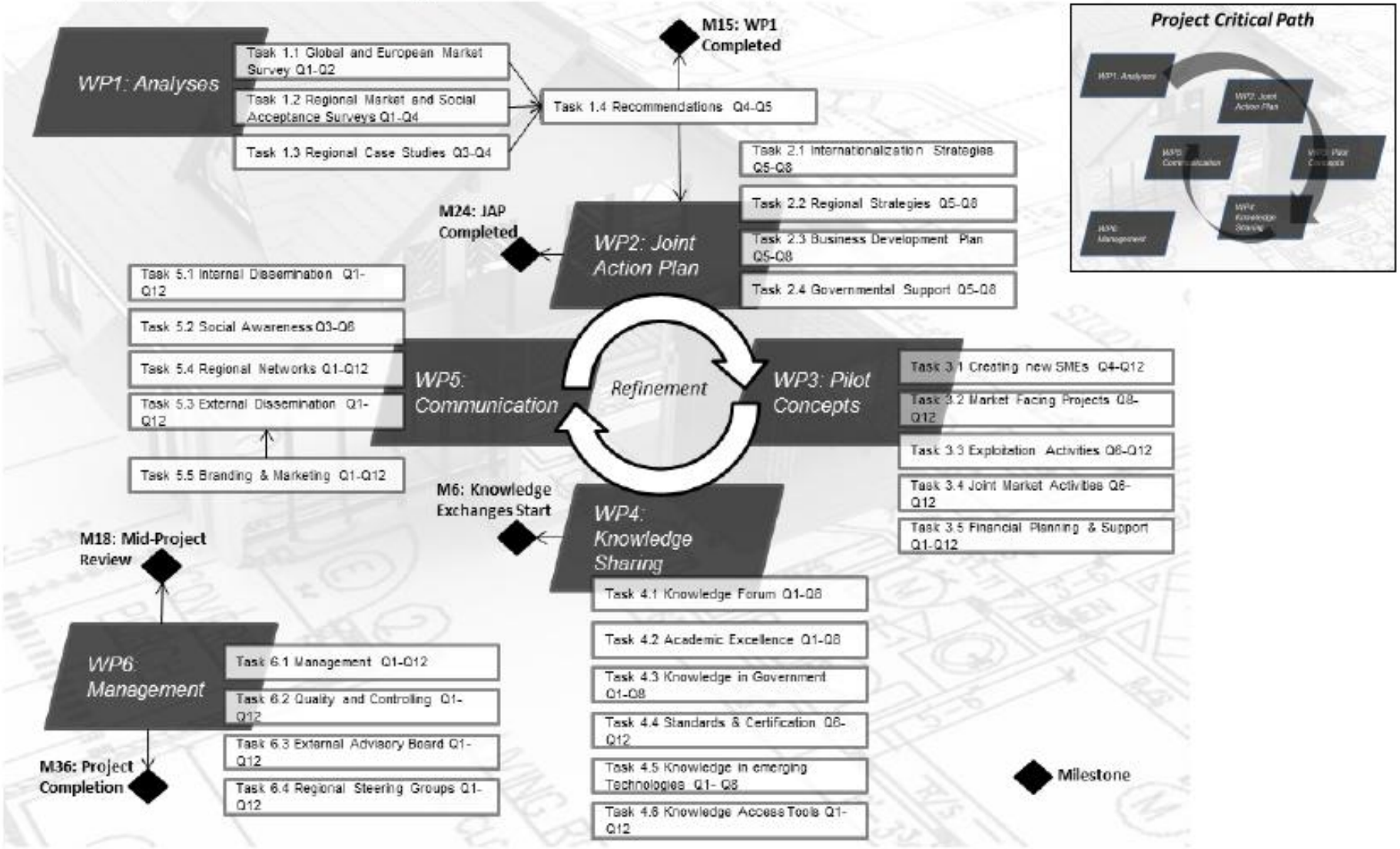
The timing of tasks and deliverables in WP1 overlap to allow maximum communication and refinement of survey and analyses needs for the purposes of making the most accurate and comprehensive recommendations possible.

1. Comprehensive regional and global market survey of the smart buildings sector, Month 6
2. Analytical report of Living Regions regional clusters, Month 12
3. Report of the regional case studies, databases of cases, and regional recommendations, Month 12
4. Recommendations report with conclusions for the Joint Action Plan of the consortium, Month 15

Management PERT

1.3.4 *Provide a graphical presentation of the components showing their interdependencies (Pert diagram or similar)*

The work packages are designed to allow the iterative refinement of knowledge and experience to take place between WPs 2, 3, 4, and 5, throughout the life cycle of the project. While WP2 ends in month 24 with the completion of the JAP, the JAP will be a living document which will be continuously updated as new innovations appear and new market knowledge is gained.



Management: Risk Table

1.3.5 Risks, and associated contingency plans

Smart buildings is a large and developing sector which could be influenced by a wide range of factors, both internal and external. We present here an overview of the main risks and contingency plans, incorporating an external PEST (Political, Economic, Social, Technological) analysis. Risk will be centrally managed by the project management board, the quality assurance task leader, and the lead partner of each task.

	Potential Risk	Risk Level	Main WPs	Possible Impact	Contingency Plan
EXTERNAL (PEST)	**Political:** Changes in EU legislation de-prioritise resource efficiency	Very Low	WP2	Lowered demand for smart building technologies and methods	Develop Joint Action Plan to focus on more specific European markets and non-EU sectors
	Political: Slow national uptake of EPBD, fragmented regulations	**Medium**	WP2	Slower than expected market growth and development	Develop Joint Action Plan to strengthen regulation and engage national governments
	Political: Climate change loses its political and/or social priority	Very Low	WP2	Public and market support for green solutions wanes	Develop Joint Action Plan market approach to focus on economic arguments for smart buildings
	Economic: Fossil fuel prices fall	Very Low	WP2	Urgency of smart buildings solutions is lowered	Develop Joint Action Plan to focus market approach on climate change and legislation
	Economic: Asian competitors accelerate technological development	**Medium**	WP2	Urgency of strong market approach and brand rises	Develop Joint Action Plan to speed up joint time to market
	Economic: Recession deepens	**Medium**	WP2	Market for solutions softens, availability of finance lowers	Focus market approach on cost savings, augment development of financial methods
	Social: Public reluctant to adopt smart building solutions	Low	WP2, WP5	Market for solutions weakens	Focus more efforts on social acceptance measures and public policy
	Social: Low availability/awareness of solutions, lack of clear market leaders and brands	**Medium**	WP2, WP5	Market fragmentation occurs, lowered market pull	Focus more resources and planning on public perception and government informational programmes, strengthen branding efforts
INTERNAL	**Technological:** Lack of technological integration between Smart Building components	**Medium**	WP2, WP3, WP4, WP5	Fragmentation prevents unified market approaches and strategies, smart buildings become harder to regulate and build	Prioritise component integration and knowledge sharing in work packages, increase efforts in standards and common certification, increase coordination and intensity of joint efforts
	Social: Loss of a consortium partner	Low	WP6	Disruption of project work	Management board seeks replacement
	Technological: Consortium insufficient to meet all technical requirements for market	**Medium**	WP2, WP6	Disruption of market approach and business planning	Management board seeks additional necessary business partners to join and integrate at end of Living Regions project
	Social: Work Package fails or does not develop properly or on time	Low	WP2, WP6	Disruption of project processes and management	Management board calls *all partners* meeting to address and correct difficulties

Management: GANTT

1.3.2 The timing of the different WPs and their components (Gantt chart or similar)

The timing of the work packages within the project represent discrete phases, while allowing the full project cycle for core cooperation and knowledge sharing activities to take place among partners (WP3, WP4).

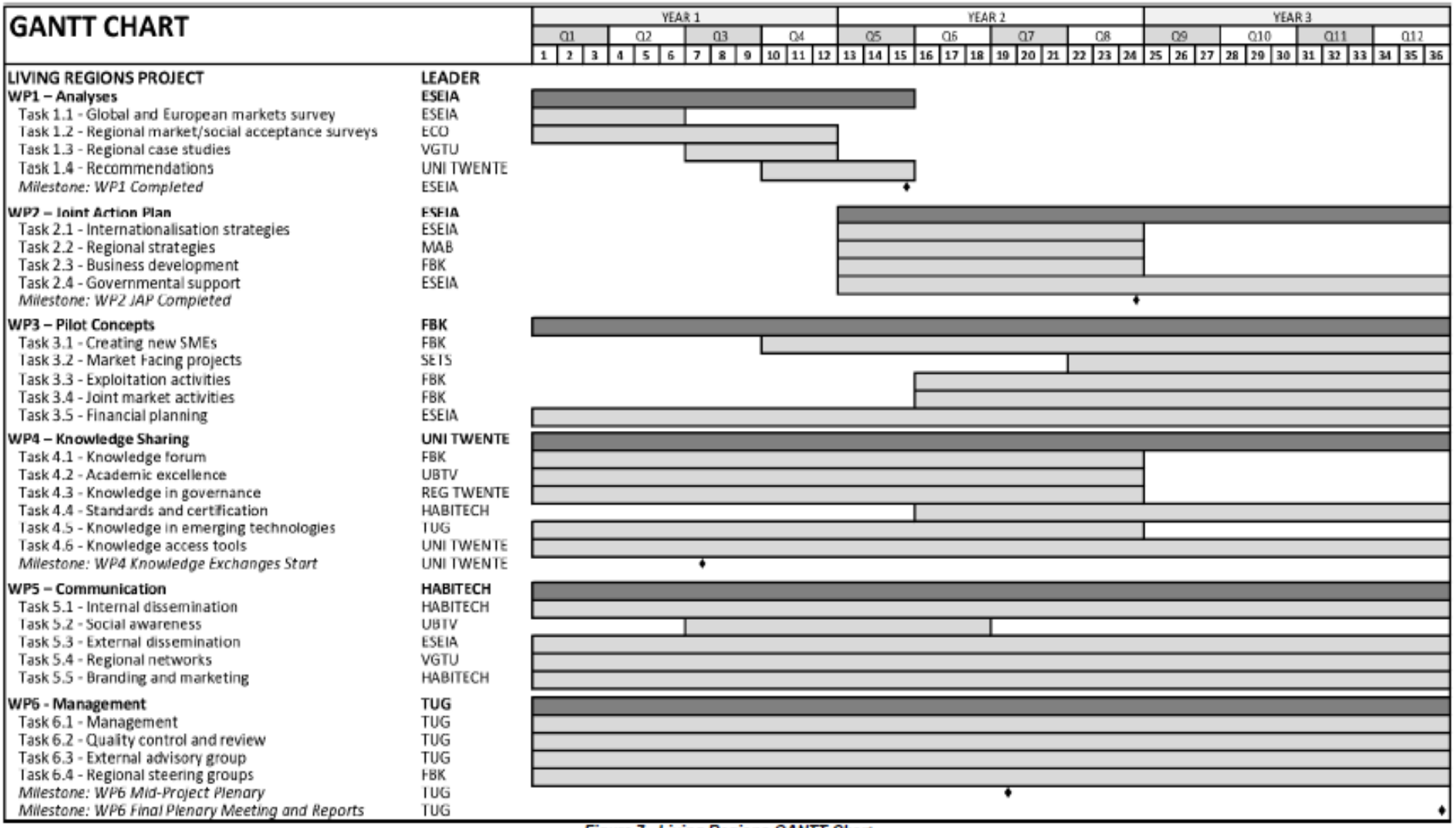


Figure 7 - Living Regions GANTT Chart

Questions?

Proposal Writing: Impact

Be ***specific***. Describe ***why***.

Tips and Tricks

- Most proposals fail on this criterion because they are not specific about the outcomes and impact. *Be very specific.* Discuss goals, measurement, documentation, marketing and adoption, and upkeep of impact beyond the end of the project.
- Impact on the European level must be linked to declared EU development goals – read the call text again. *Quantify. Reference.*
- Impact on the careers and organisations of those involved need to be specific and discuss *why* and *how much* and to what end.
- Impact on the public and scientific community needs to name names: what journals, what conferences on what dates, what public events paid for how, for what audience, and for what outcome.
- *Bad:* "The project will seek to disseminate results to the public through the channels of web and printed materials."
- *Good:* "The project has received approval in principle for a short BBC documentary to be made about the research, paid for by the UK's PUOS fund, in Q3/Y3, to be broadcast nine times in Q2/3/4/Y4. The project has made arrangements to present results for a general audience at the Edinburgh Science Festival in Q2/Y2 and Q2/Y3…"

Writing: Impact Section

3. Impact

3.1 Expected impacts listed in the work programme

In line the *regions of knowledge* call, the Living Regions project will have the most significant impact on the R&D capacity and competitiveness and innovativeness of European regional research-driven clusters and on regional economic development and excellence in the smart buildings sector by addressing the lack of cooperation and strategic integration between European clusters of excellence. It will have significant additional impact on the European *smart buildings sector,* on *European SMEs,* on *developing European regions,* on the *European Research Area,* and on the *European quality of life* as affected by a radical increase in resource efficiency in the built environment.

THESIS

SUPPORT

Living Regions will significantly impact the competiveness of four regional research-driven clusters and one Europe-wide coordination organisation in the domain of resource efficient technologies. One of the key identified barriers to European prominence in the field of resource efficiency for buildings is a lack of industry and inter-sector coherence; through the creation of a Joint Action Plan and common business plans (WP2) **focusing on *smart specialisation*** (Tasks 2.2, 2.3 and 3.4), the project will help the cluster compete more professionally and agilely, both in Europe and globally, **unlocking new business opportunities** for all partners, including SMEs. Living Region's transnational networks of research-driven clusters will help maximise the region's R&D potential, attracting the best researchers world-wide to a challenging environment of industry-engaged cutting edge science. The Joint Action Plan will specify clear and specific measures for the consortium to compete as a whole in emerging markets, and give coherent recommendations about how the JAP will be funded after the end of the ROK project.

THESIS

SUPPORT

Living Regions will create an atmosphere where technical development and integration can meet emerging market needs, causing a significant impact on commercial and R&D capacity. Resource efficient buildings require advanced, integrated components across a wide range of techniques, disciplines, and sectors. The Regions of Knowledge funding will allow inter-disciplinary and

Writing: Impact Table

IMPACT, BARRIERS, METHOD, METRIC…

Desired Impact	*Primary Barriers*	*Living Regions Measures*	*Impact Metric*
A unified joint R&D and market development plan for the clusters	Lack of cooperation and knowledge of the diverse technical, social, and legislative components necessary for the uptake of smart building solutions in the marketplace	Global market surveys, regional best practice studies, creation of a Joint Action Plan and business plan, knowledge sharing activities and joint market projects (WPs 1, 2, 3, 4, 5)	Joint Action Plan, business plan, joint activity reports, more coordinated action, better market competitiveness
A strong global market approach, brand, and contact network, leading to heightened competitive advantage and regional economic impact	Lack of cluster momentum and knowledge and resources shared, lack of communication and alignment	Joint activities, branding, internationalisation efforts, and creation of business plan (WPs 1, 2, 3, 4, 5)	Joint business plan, joint activity reports, more coordinated action, better market competitiveness
Correct European, National and Regional market failure	Fragmented markets and technical components	Better technical integration, standards, and financial models (Tasks 4.3, 4.4, 3.5)	Size and integrity of market
Networking of the companies involved	Lack of trans-national cooperation	Strengthening of regional networks and clusters, joint work and knowledge sharing (Tasks 5.4, 6.4, 4.1, 4.6)	Longevity of collaborations and depth of joint work
Mobilise financial resources **Increase public funding for research on energy**	Lack of appropriate financial models for development, market roll-out, and government support	Study of best practices in financial methods, support for financial development of partners and new SMEs (Tasks 3.5, 3.1, 1.3, 2.4)	Funding captured, success of new models, growth of regions
Improve international cooperation with industrial and developing countries to jointly tackle climate change/global energy challenges at all levels, reinforcing the internal market for energy technologies and for the buildings construction sector	Lack of consensus on measures and standards, lack of cooperation	Dedicated internationalisation, standardisation, and cooperation measures (Tasks 2.1, 4.4, 5.4)	Number of new joint projects and initiatives, opening of new markets, average CO_2 reduction, changes in energy usage

Writing: Exploitation

Be realistic.

Tips and Tricks

- *Exploitation doesn't have to be about money – it can also be about increasing European knowledge and competitiveness. Understand what your project is really about.*
- Show how the project fills a gap in the knowledge or commercial market, and *quantify* that gap. Use numbers.
- Show the *process* from research to wider adoption, including milestones, and describe why the consortium includes relevant and necessary actors in the process.
- Be realistic and specific about outcomes and steps necessary, including beyond the life cycle of the project itself.
- Show an awareness and plan for IPR, and discuss possible obstacles. Link the IPR and business development plan to the larger dissemination strategy.
- Present other exploitation routes and models: open source, public understanding, trade and standards organisations, increasing European market *readiness and competitiveness*…
- *Exploitation* creates *impact*, and the two sections should reflect this.

Writing: Exploitation Table

Outcome	*End of Project*	*End of Project + 3 years*
Development funding obtained	3 joint projects proposed, 1 accepted, 6 million Euro captured	12 projects proposed, 4 accepted, 50 million Euro captured
SMEs created	6 new SMEs created	20 new SMEs created, 3 reach IPO
International markets addressed	Comprehensive plans for the USA, China, India, Brazil, wider Europe	Significant market presence in USA, China, wider Europe
Market capture	Comprehensive plan for heightened regional cluster competitiveness	Market envelope of 15% world-wide for core market offerings in regions engaged
Business growth	Comprehensive business growth plan	Growth of 30% by turnover per year for the years starting 2015 in line with average market growth
Job creation	50 high value jobs to be created directly as a side effect of project activities	2000 new jobs to be created as a direct result of cooperation
Unification of standards	High profile presence on standard making bodies, contribution to standards	Unified EU and international standards for technical, integrative, and certification standards for the smart buildings sector
Internationalisation	Close relationships with 3 high profile international cluster or organisations in China, the USA, and wider Europe	Integration of the Living Regions consortium into the upper tier of smart buildings sector players on the international stage
Changing funding mix	Joint Action Plan detailing integrated plan for regional growth	Shift of sector funding profile from 25% national funding sources : 25% EU funding sources : and 50% commercial income to a ratio of 10% :10% : 80%.

Writing: SWOT

Smart Buildings Market Drivers and Barriers

Drivers

- Cost and risk reduction (commercial)
- Cost, quality and comfort (residential)
- Greenhouse gas reduction and public image (commercial)
- EU and national policy requirements
- Market pressures and price instability of non-renewable energy sources
- Renovation of older buildings
- Climate change, hotter summers, and extreme weather
- Property values and public demand
- Opening of new markets
- New technologies and ICT in Smart Buildings space

Barriers

- Lack of capital and funding mechanisms
- Uncertain or insufficient ROI
- Low priority/level of knowledge
- Institutional inertia and consumer path dependence
- Fragmentation of standards, certifications, designs, and build methods
- Split owner/tenant incentives
- Lack of government incentives and political will
- Low availability/awareness of solutions, lack of clear market leaders and brands
- Lack of technological integration between Smart Building components

Writing: Dissemination

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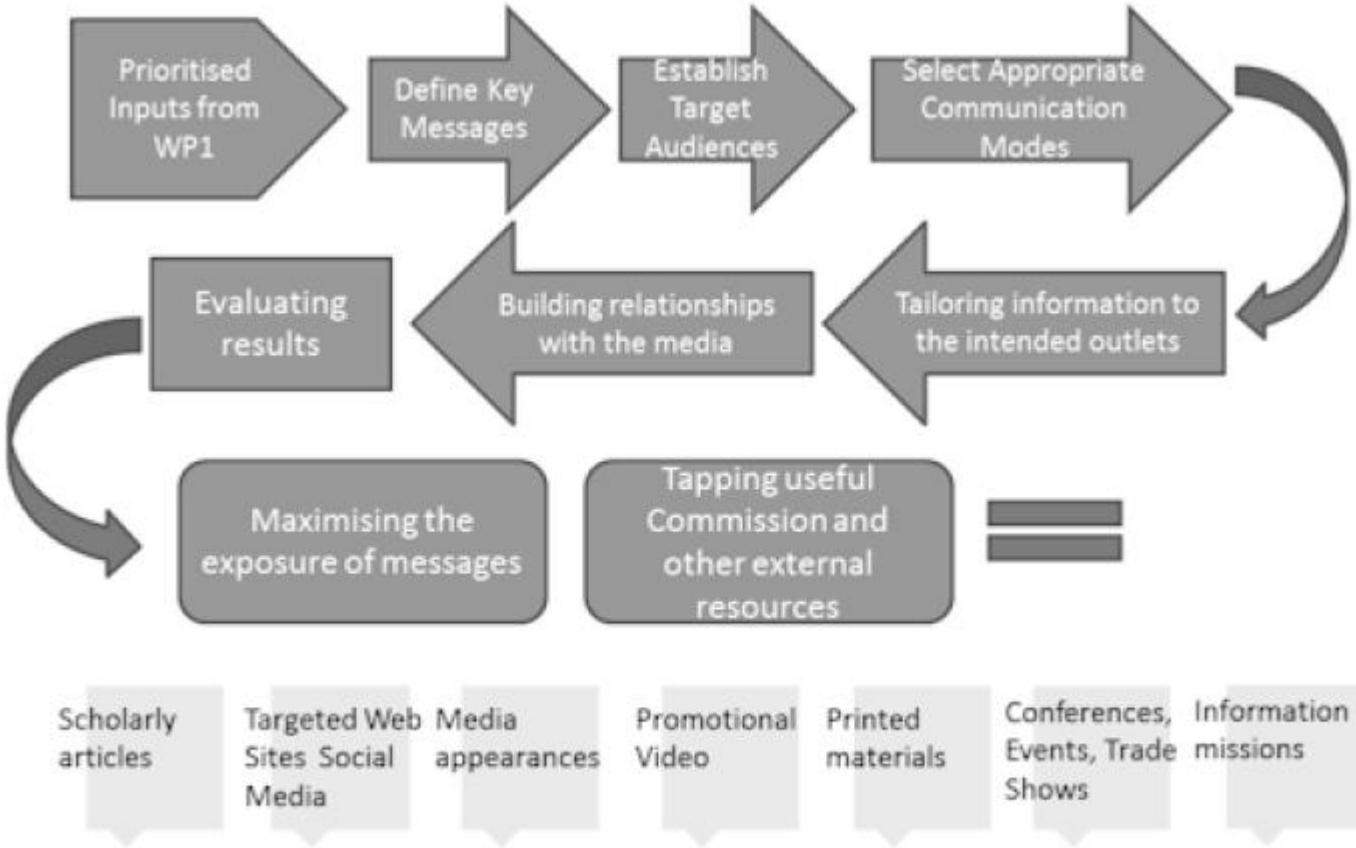

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Figure 10 - Living Regions Public Dissemination Strategy (adapted from the EU Science and Society "Guide to Successful Communications" 2011)

Writing: Public Understanding

3.2.3 *External Dissemination: Public Engagement*

"To demonstrate the feasibility of rapidly progressing towards our energy and climate objectives at a local level while proving to citizens that their quality of life and local economies can be improved through investments in energy efficiency and reduction of carbon emissions [...] and foster the dissemination throughout Europe of the most efficient models and strategies to progress towards a low carbon future." - European Initiative on Smart Cities Objectives (2012)

Public engagement has been identified as one of the key barriers to wider adoption of resource efficient buildings, and two tasks have been specified to better understand citizen's perceptions and need[illegible]2 led by ECO), and to respond to them in order to sha[illegible] public opinion and aware[illegible]ss of t[illegible] benefits of smart buildings and the impact of pending legislati[illegible] Task 5.2 led by UTBV). L[illegible]ng Reg[illegible] public rela[illegible]s str[illegible]gy w[illegible] be d[illegible]end[illegible] up[illegible] the [illegible]ding[illegible] the [illegible]st w[illegible] pac[illegible]ge, b[illegible] is likely to in[illegible] we[illegible] based [illegible]oc[illegible] ar[illegible] printed pro[illegible]tion[illegible] mate[illegible]s, [illegible] short (6 mi[illegible]e) pro[illegible]tional fi[illegible] pro[illegible]ced fo[illegible] g[illegible]eral audien[illegible] participati[illegible]n re[illegible]nal [illegible]enc[illegible]irs and festivals (*Ani[illegible] Sc[illegible]tival, [illegible]an [illegible] Scie[illegible]e F[illegible]ival*), [illegible]artne[illegible]patic[illegible]in community smart [illegible]ding and resource efficiency awareness events and demonstrations, and engagement/feature[illegible]lacement with national television media targeting science and innovation programmes for both children and adults (the consortium has prioritised *Discovery Science* on Sky Italia, the popular science show in the Netherlands called *Labyrint*, Austria's *Kreuz und Quer* and *Modern Times* on ORF, *Discovery TV* and *DaVinci Learning* in Romania, *Zinios Specials* on BTV/Lithuania, and the BBC's *Click* and *Horizon* series). Living Regions will also seek to liaise with regional associations and government agencies involved in the public understanding of science, and closely with the *European Initiative on Smart Cities*.

All dissemination activities will be carried out according to relevant clauses in the grant agreement and in accordance with established best practices.

Specific!

Questions?

Proposal Writing: Details

The devil is in the details. Every call has detailed criterion to be addressed.

Tips and Tricks

- Criterion such as *Gender Issues*, compliance with *Code and Charter, Guide for Researchers,* and *Ethics* are specific to the call and each need their *own explicit paragraph addressing the issue directly.*
- *Proposals often fail because they do not show an awareness of the requirements stated in the call. Nothing can be left implicit, everything needs to be explicit.* Reread the call and make sure everything mentioned is explicitly addressed.
- Pay attention to page lengths which are now usually by section. Annexes must be specified by the call or are removed from your application.
- Letters of support *must all be different and individual*, if they are too similar they are discounted by reviewers.
- *Do not retrofit* an old, failed proposal for another call…


Social Acceptance
Government Policy & Support
R&D
Cooperation & Knowledge Transfer
Financial Methods
Standards
Market Awareness and Readiness

Writing: Rogue's Gallery

Comments received through the years on professionally prepared proposals – S&T section only.

- *The proposal was too ambitious for the time allowed*
- *The research proposed is not ambitious enough*
- *The research seems like a continuation of previous work*
- *Sounds like work they've already done*
- *Proposal is development not research*
- *Project outputs too hard to measure and not well described*
- *Some partners seem to have no role in the research*
- *Partners all have the same competencies and expertise*
- *Research is not innovative enough*
- *Research is not believable for the applicants' profile*
- ***Research doesn't matter***
- *S&T section is unfocused and unclear*
- *Inter-disciplinary research aspects are not clear*
- *Role of industry in core project is not apparent*
- *Description lacks concrete research tasks*
- *There is no description of possible risks within the work*
- *No responsibilities for individual tasks are provided*
- *It is unclear how smaller research projects contribute to the programme as a whole*
- ***No idea what this was about***
- ***Proposal is too much vague***
- *Exchanges and knowledge sharing within the research components are not well described.*
- *Tasks and research goals are not evident in the deliverables list*
- *Research schedule, milestones, and benchmarks are not adequately linked to other sections of the proposal*
- *Research agenda is not innovative*
- *State of the art description is incomplete*
- *Background section does not make clear why applicants are suited to the project proposed*
- *References are incomplete or missing*
- *S&T section methodology is not well described*
- *Nature of joint work not convincing*
- *References provided are inadequate*
- *Research not justified*
- ***Consortium makes no sense***
- *Objectives are not clearly stated*
- *Testing and validation are not adequately presented*
- *Data availability is not explained*
- *Privacy issues in data use are not explained*
- *Gap between theory and commercialisation is not presented*
- *Research fails to take account of…*

Unfortunately, Luck.

WHAT A LOT OF WORK!

Luck plays an unfortunate role in applying for funding.

A tale of three proposals…

What it looks like when things go right.

3. Potential impact through the development, dissemination and use of project results *(Threshold 3/5)*	**Mark:** **5** / 5
The impact of the project requested in the call is clearly addressed and supported quantitatively in a credible way. The improved permanent magnets can be applied in a broad spread of industrial sectors (wind turbines, electrical motors, etc.). The industrial partners - constituting 40% of the consortium - are manufacturers and automotive companies.The SME partner will provide knowledge transfert on advanced permanent magnets. Together they will assure industrial impact in terms of applicability and market deployment strategies.	
Other remarks ***(Total Threshold 12/15)***	**Total score:**
All WPs and tasks start month 1 and finish month 36 but no milestones are planned until month 18. Additional milestones should be added earlier in the project. Resources distribution is not clearly presented and needs to be elaborated and justified.	**14,5** / 15

Secret Tips

- New programmes are often give-aways with low standards.
- Check the numbers: some calls have lots of cash but few applicants. Ask your National Contact Point (NCP) what are the most under-subscribed calls.
- Think laterally: almost every call can fund your research in some way – explore other instruments (training, infrastructure, support for SMEs…).
- Bug your NCP for matching or continuation funding channels.
- ***Math!*** Math is chronically under-subscribed and so is often combined in the review calls with other disciplines like engineering or physics. Frame your proposal's narrative around mathematics and submit it to that panel…

Conclusion

Much of it is about the writing, being clear and concise.

Read the call carefully and make a list of all issues to be explicitly addressed.

Be realistic about goals and success conditions.

Contact: Richard Wheeler
richard.wheeler@eseia.eu

QUESTIONS?