KTH
Innovation Readiness Level

A complete framework for guiding idea development and assessing idea status across key dimensions.

NGI TRUBLO

Usage Guide
28.02.2022

New, monthly survey in Moodle

Each month, please provide data about the Readiness Level of your project.

The collection of this data is important to report about the performance of all projects.

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How to use the survey in Moodle

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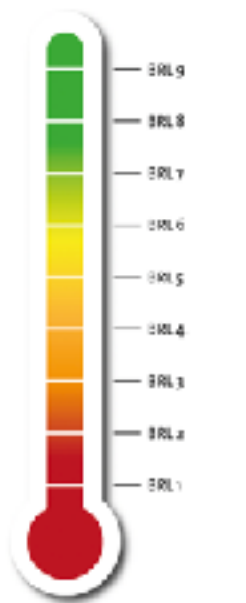# KTH Innovation Readiness Levels

COMMUNICATE

Clear and defined terminology and a visual model is a great tool for coaches and advisors to get through to and communicate effectively with idea owners. It gives a structure for individual meetings as well as the entire process.

How it works

Example: Business Readiness

Business model is final and is scaling with growing recurring revenues that results in a profitable and sustainable business

Sales and metrics show business model holds and can scale

Product/market fit and customers payment willingness shown

Full business model including pricing verified on customers

First version of revenue model including pricing hypotheses

First projections to show economic viability and market potential

Draft of business model in canvas

First possible business concept described

Hypothesizing on possible business concept

- For each Readiness Level, there are nine pre-defined levels where a number of criteria need to be met to reach each level

- On the left is an example of one criteria for each level, in reality there are often more than one.

- You need to complete a lower level, before you can advance to the next.

1. Customer Readiness Level
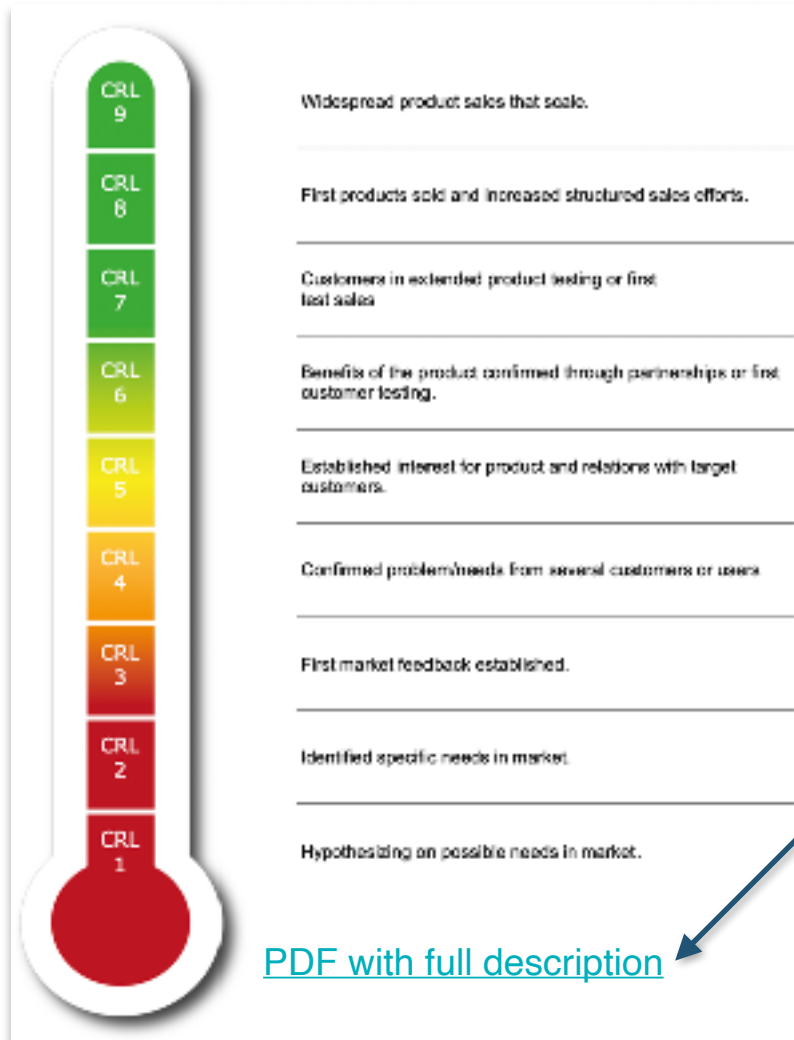
There is always an extended document to iterate the level of readiness.

For each readiness level there is a PDF, see link.

PDF with full description

2. Technology Readiness Level

TRL 9 — Actual Technology system proven in operational environment

TRL 8 — Actual Technology system completed and qualified through test and demonstration

TRL 7 — Technology prototype demonstration in an operational environment

TRL 6 — Technology demonstration in a relevant environment

TRL 5 — Technology validation in relevant environment

TRL 4 — Technology validation in laboratory

TRL 3 — Analytical and experimental proof-of-concept of critical function and/or characteristics

TRL 2 — Technology concept and/or application formulated

TRL 1 — Basic principles observed

[PDF with full description](#)

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3. Business Readiness

Level	Description
9	- Business model is final and business is scaling with growing and recurring revenues. - The business scales by growing in new markets, new geographies, new segments etc. - There is a working business which is profitable and sustainable over time.
8	- Sales and other metrics show the business model holds and is profitable e.g. customer acquisition is not costing too much. - The business model shows it can scale (potentially globally). Sales channels and supply chain are fully in place. - Business model is set but is continuously fine-tuned to explore more revenue options.
7	- There is product/market fit meaning you can demonstrate significant customer interest and use of products and sales where customers show clear payment willingness. - Attractive revenue vs cost projections (being validated by sales and data) implying a sustainable/ attractive business could be built. - Preparations for scaling business with suppliers, sales channels etc (incl. agreements).
6	- A complete business model incl. the pricing is tested vs. customers by test sales or similar. - The revenue model incl. pricing is updated and refined based on customer feedback. - First more complete projections on revenue/costs (profit and loss projections or similar) with more details and well-grounded assumptions/data (e.g. 1-3 years horizon)
5	- The business model (at least parts of it) is tested against customers for verifying hypotheses. - The business model is updated and refined to new version based on customer feedback - There is a first version of a more detailed revenue model incl. pricing hypotheses (what revenue streams are there, from what, when, how and what prices are possible?) - The competitive position and differentiation is verified by market feedback.
4	- There is a full business model in canvas format incl. details on possible revenues/costs. - First economic projections with numbers to show the market potential and economic viability (bottom-up calculations based on projections/guesstimates on volumes, prices etc) - Assessed feasible Share Of Market based on e.g. barriers to entry incl. competition - Made a competitive analysis on your position and uniqueness/differentiation vs them.
3	- There is draft of the business model in a canvas format (business model canvas/lean canvas) but typically without the revenues/cost parts and details of these. - The market description is getting more highly resolved with more specific market applications and segments being identified. Target applications identified. - The market potential and the market size is quantified with TAM and SAM-Segmented/Served Available/Addressable Market (everyone you have decided/can reach) - A more complete competitor overview with direct/indirect competitors and alternatives
2	- Described the proposed business concept in some structured form e.g. NABC - One or several markets or applications are identified and described on overall level e.g. user numbers, TAM- Total Available or Addressable Market (everyone you wish to reach) - Some competitors and/or alternatives are identified and listed
1	- Vague and unspecific description of the potential business idea or business concept - Little insight into the market and its potential/size-hypothesizing on possible applications - Little knowledge or insight into competition and alternative solutions

4. IPR Readiness

IPRL 9 — Strong IPR support and protection for business. Patent granted in relevant countries and maintained in force

IPRL 8 — IPR strategy and IP management fully implemented. More complete assessment of freedom-to-operate.

IPRL 7 — All relevant IPR filed (e.g. additional patents). Patent entry into national/regional phase.

IPRL 6 — IPR/patent strategy implemented and supporting business. Positive response on filed applications. Initial assessment of freedom-to-operate (or landscape)

IPRL 5 — Draft of IPR/patent strategy in place to use IPR for business. Filed first complete patent application (or other IP registrations)

IPRL 4 — Confirmed if protection possible and for what (e.g. patentability). Decided why to protect certain IPR (business relevance).

IPRL 3 — Detailed description of possible key IPR (e.g. invention or code). Initial search of technical field and existing IPR.

IPRL 2 — Identified different forms of possible IPR that you have. Ownership is clarified and you clearly own/control IPR.

IPRL 1 — Hypothesizing on possible IPR you might have (such as patents, software, copyright, designs, trade secrets etc.)

[PDF with full description](#)

Level	Description
9	– Strong IPR support and protection for business, for example using various other forms of registered IPR (trademarks, designs etc) or for example using agreements, trade secrets etc. – Patent granted and maintained in several countries relevant for business – Patent is in force/valid with no invalidation procedures
8	– IPR strategy is fully implemented and managed. IPR is proactively used to support business, for example all IPR related agreements are professionally managed and new IP is managed. – First patent is granted with relevant scope for business – No oppositions encountered for patent grant – More complete assessment of freedom-to-operate
7	– Other forms of relevant IPR might be registered such as trademarks, designs. – Entry into national phase (US, EU, JP etc.) – Complementary or additional new patents might be filed
6	– More full IPR strategy in place that is validated by professional and that really links to and supports business strategy. – Patent strategy in place-identifying possible additional patents, country strategy, claim changes. – Positive response on applications from authorities and analysis of response performed. – If no positive response: analysis is performed together with professional with strong arguments and strategy for prosecution. – Initial assessment of freedom-to-operate (e.g. competitor based, narrowed product scope etc.) or landscaping. Overall purpose to get knowledge on the field, key IPR, players and activity.
5	– Draft IPR strategy- first analysis (preferably by professional) on how different IPR can be used to protect and be of value for the business. – Patent strategy- professional analysis on what/how to patent and how to improve/build value of patent application (e.g. supporting data, new/additional details to be filed etc.) – Basic agreements in place to ascertain control of IPR (e.g. assignments, ownership copyright) – First complete patent application (or other IPR registration) filed in cooperation with professional
4	– Confirmed novelty and patentability through searches/analysis by professional – Confirmed possibilities for protecting other forms of IPR – Possibly filed "provisional" patent application i.e. not professionally drafted and complete – Analyzed (ideally with professional) the key IPR and what the priorities should be for what to protect (e.g. patent). Decided on alternative forms of protection if patents are not suitable.
3	– Considered what forms of IPR are key and could/should be protected (e.g. through patents) – Sufficiently detailed description of possible IPR and patentable inventions (invention disclosure) – Made own searches/analysis of publications, state-of- the art solutions etc. – Possibly initial searches by professional to find prior art within patent databases
2	– Mapped different forms of IPR that exist or could emanate during development – Specific ideas for patenting exist, but are not well described and defined. – Agreements related to IPR are identified and ownership is clarified. IPR is verified to be under your ownership or control. Inventors are clarified. Knowledge of applicable IP policies etc.
1	– Hypothesizing results or ideas might contain possible patents or some other form of IPR. – Some ideas on IPR e.g. for patenting may exist, but are speculative and uniqueness etc. not clear. – Vague description and documentation of the possible IPR. – Limited knowledge or unclarities regarding relevant legal agreements (ownership, use-rights etc.) – Limited or non-existing knowledge of the technical field, state-of-the art, publications etc

5. Team Readiness
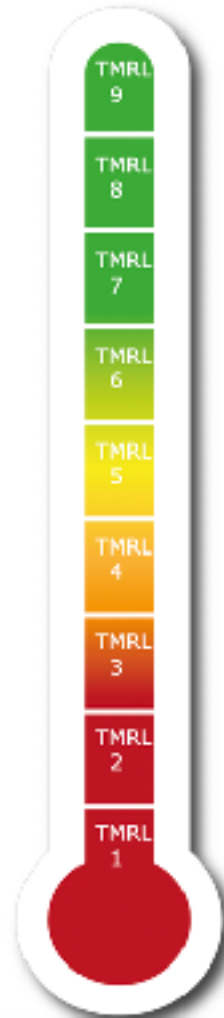
TMRL 9 — High performing, well-structured team and organization that is maintained and performs over time.

TMRL 8 — Management and CEO in place. Professional use of board/advisors. Activated plan and recruitment for building long term team.

TMRL 7 — Team and culture is fully in place and proactively developed. Updated plan for building necessary team on longer term.

TMRL 6 — Complementary, diverse and committed team with all necessary competencies/resources incl. both business and tech.

TMRL 5 — Initial founding team with main needed competencies. Team agrees on ownership and roles and has aligned goals

TMRL 4 — A champion is present. Several needed competencies in place. Initiated plan for recruiting or securing additional key resources.

TMRL 3 — A few of necessary competencies/resources are present. Defined needed competencies/resources (and plan for finding).

TMRL 2 — Insight and first idea on necessary competencies or external resources (e.g. partners).

TMRL 1 — Little insight into the need for a team (typically an individual). Lack of necessary competencies/resources.

[PDF with full description]

Level	Description
9	- The team is high performing and well functioning (cooperation, social environment etc). - The team is motivated, coached and rewarded to reach goals. Team-building is active. - Strong culture, a clear and functional structure (organization, roles etc) exists with processes etc. - The team is maintained and developed and performs over time - Personnel is developed and trained professionally according to a more long term strategic plan.
8	- There is a clear leadership and management. CEO in place with relevant business experience. - There is a competent board which is professionally used. Relevant advisors are in place and used. - Necessary recruitments according to longer term plan are ongoing to ascertain competencies - The team is properly motivated and rewarded so everyone performs at their max.
7	- Culture is formed and used to develop and support the team and company development - The team is well aligned with shared goals/vision and the team is well functioning with clear roles - The team is proactively developing their skills, cooperation etc. and there is a plan for this. - Some additional recruitment needs might exist, e.g. a new CEO or key technical personnel - There is a plan for necessary recruitments and needed resources over longer term (~2 yrs)
6	- Complementary team in place with technology and business as well as team diversity. - Committed team where everyone is feeling responsibility and accountability. - All key competencies necessary for the near term are present. - Advisors (e.g. advisory board) and/or board members are considered and recruited. - Low dependency on a single individual for specific key skill or expertise - Awareness of risks to team performance (internal conflicts, politics, conflicting agendas/priorities) - Initial recruitment and other activities for securing competence/resources completed successfully.
5	- An initial founding team working together and all spending significant time. The founding team jointly having main needed competencies - Additional team aspects e.g. background and diversity are considered (e.g. balance male/female) - Recruitment or network activities to ascertain additional persons/resources are progressing - The team has agreed on their respective shares (signed agreement). Ownership is balanced and incentivizing and reflects historical and future commitment and contribution. - The team is aligned with clarified roles, shared goals and clear commitment (e.g. time spent)
4	- A champion (driver and committed to take the project forward) is present in the team - Several, but not all, competencies necessary are present, typically multiple individuals in team. - A plan is in place and initiated to recruit persons with defined needed skills (described e.g. in a requirement profile). Activities initiated for ascertaining key resources in e.g. partnerships. - The team has started discussions on ownership as well as roles and commitment going forward
3	- A few of the necessary competencies/resources are present. One or several individuals that possess some, but not all, of necessary competencies/resources. - The existing and needed competencies/resources have been defined and gaps to fill identified. - An initial "Team plan" is put in place for what is most needed near term (<1 year) and how to find these prioritized competences
2	- Some insight that additional necessary competencies and/or resources (e.g. partners) are needed - First idea on what additional persons, competencies and resources that could be needed - Limited competencies present– typically an individual.
1	- Little insight into needed/necessary competences (knowledge, skills) and other needed resources (e.g. partners, service providers etc) - Typically an individual lacking the necessary skills in key areas such as technology, business etc. - No consideration or interest to build a team with additional and complementary skills

6. Funding Readiness

Level	Description
9	- Investment formally concluded with all relevant documentation and money obtained. - Additional future investment needs and options are continuously being considered for future
8	• The company is reasonably structured e.g. in terms of agreements, ownership (not fragmented or significant parts held by inactive/non-contributing persons) etc. • There is formal order in the company e.g. bookkeeping, documentation etc. - Clear interest and discussions (on term sheet level or similar)with interested investor(s) - All necessary material often required by investors in place (financials, business plan) - Concrete discussions with one or several possible investors that clearly are interested.
7	- There is a team that can present well the investment case where key areas are in place such as prototype, traction/customer interest, market potential with scalability etc. - There is a complete business plan with financials and milestone plan etc in place - Discussions with potential investors are on-going around a defined offer (how much money, for what, conditions, valuation etc) - There is alignment amongst existing team and owners with a shared view on investment
6	- There is an investor pitch deck that has been tested and fine-tuned and which includes a focus on the business potential and financials to attract investor interest. - Insight into equity financing especially how investors think/evaluate, investment criteria etc. Decided to pursue equity funding and take in new owners. • Decided on a first offer to private investors i.e. amount/valuation and use of funds
5	- There is an investor presentation (pitch deck) that has been tested and is being fine-tuned. - Supporting material e.g. financial projections and budgets etc. are being developed • Applications for other types of funding e.g. grants or loans are prepared and filed. - Larger soft funding (e.g. 0.5-1 MSEK is achieved) - Insight into the basics of equity financing and willingness to consider it, i.e. no major fear of losing control/ownership.
4	• A succinct pitch (oral) and good written presentation of business concept is in place - There is a more complete plan for funding needs/options over time (12-18 months) i.e. overall budget and potential sources of funding.
3	• Well described business concept and initial verification plan (incl. hypothesis to verify, goals) - Basic insight and knowledge of different financing options - Obtained first small soft funding (50-200 KSEK) for commercial verification according plan
2	- The business idea/business concept is reasonably well described incl. first version of value proposition (e.g. NABC). The business concept is not verified and updated - The initial funding needs are mapped for initial key steps and milestones i.e. costs/budget • There is a basic plan with funding options for initial milestones (3-6 months)
1	- Initial business idea with unclear/poor description- no value proposition (e.g. NABC) - No insight into how much funding needed and for what. - Little insight into different funding options and funding types.

Thermometer scale (FRL levels):

- **FRL 9** — Investment obtained. Additional investment needs and options continuously considered.
- **FRL 8** — There is corporate order and structure enabling investment. Term sheet discussions with interested investor(s).
- **FRL 7** — Team presents a solid investment case incl. status and plans. Discussions with potential investors on-going around an offer.
- **FRL 6** — Improved investor presentation in place incl. business/ financials. Decided on seeking private investors and initial contacts taken
- **FRL 5** — Investor oriented presentation and supporting material tested. Applied for and secured additional larger funding (soft or other).
- **FRL 4** — Good pitch and short presentation of the business in place. Plan in place with different funding options over time.
- **FRL 3** — Well described business concept and initial verification plan. First small soft funding secured.
- **FRL 2** — Description of business concept (e.g. NABC). Defined funding needs and funding options for initial milestones.
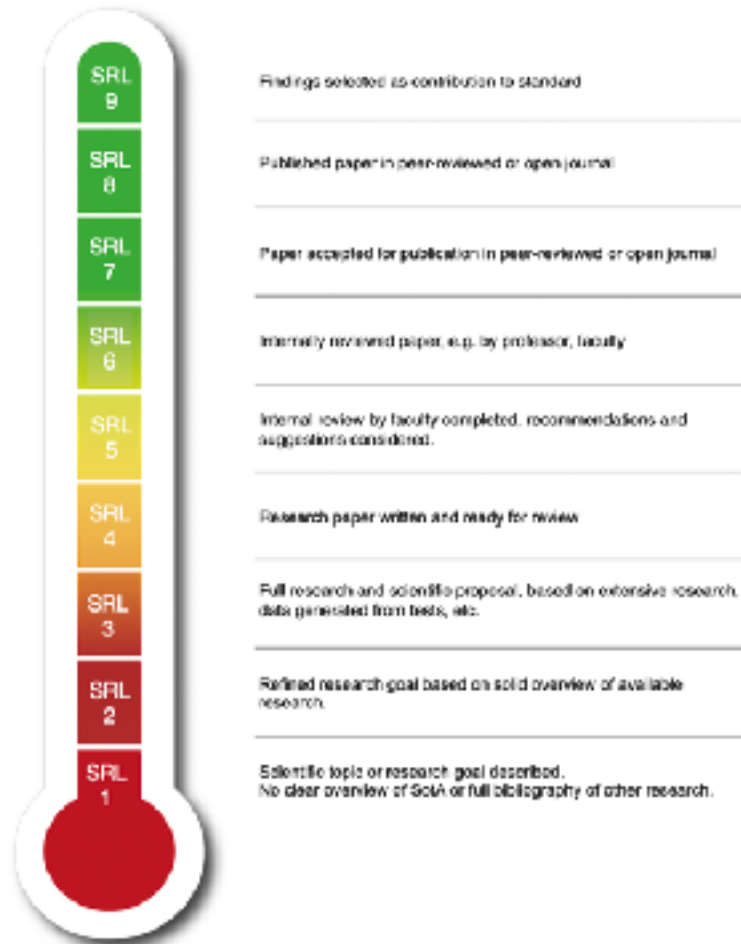- **FRL 1** — Initial business idea with vague description. No clear view of funding needs and funding options.

7. Scientific Readiness

Scientific Readiness Level - SRL

Level	Description
9	Research paper is accepted as contribution to standard is cited >30 times by other academic institutions.
8	Paper is published in journal
7	Paper is accepted for publication after peer review or similar selection mechanism
6	Paper is submitted to one or several peer reviewed journals
5	Paper is internally reviewed, recommendations or extensions considered
4	Research paper written and ready for internal review
3	Fully researched proposal based on extensive review of existing literature, generated data or from test use cases, such as surveys or working software demos.
2	Refined research goals and full ToCs, based on solid overview of existing research
1	Scientific topis or research goal is described. No clear overview of SotA or full biography of other research already published on the subject.

Benefits

Snapshot of status and maturity - Use the tool to quickly and without bias assess the maturity and current development status of an idea

Reality check – the tool enables idea owners to more objectively define their progress across several important dimensions

Coaching and communication – offering clear and defined terminology and a visual model allows coaches, advisors, and idea owners to communicate effectively around the idea development. It also provides a structure for individual meetings as well as the entire process

Guidance – the model provides key steps and questions that need to be addressed and gives a clear roadmap for both coaches and idea owners throughout the process

Portfolio management – the possibility to quantify and visualise the development progress of the ideas in a portfolio of investments

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This is not a race

For example, if you loose important team members, reset your Team readiness level accordingly.

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