Table 3. Refined Categorical Scoring Codebook

Tag	Main Category	Subcategory	Definition	Example
1	Creating Value		Elements related to creating a positive impact on beneficiaries	Creating Value, Value Proposition
7		Problem Identification	General elements related to value creation and creating a positive impact	Identifying needs, world problems, grand challenges, meeting needs
8		Beneficiaries	Elements that show the value created for a specific person or entity. This includes beneficiaries that are not the entrepreneur or the company, such as specific users, customers, or any other external recipient of the value.	Society, customers, end user
9		Types of Value	Elements illustrating the various types of value that will have an impact by meeting a specific need or solving a specific problem. This includes the end result or outcome of the value created.	Financial, environmental, societal
2	Education		Elements that illustrate how a person learns and develops an EM through a formal process	
10		Education System	Elements denoting the formal education system or progression in the education system	Progression, institution, degree
11		Curricular	Elements related to the curriculum including EM interventions	Classroom, course project, EM project
12		Co-curricular/ Extra-curricular	Elements relating to co-curricular (university-sponsored) and non-curricular (not university-sponsored) activities that help develop an EM	Clubs, research experience, co-op, internship
3	Design Process		Elements that demonstrate specific **actions** one takes to progress toward a goal, make decisions, communicate with others, and develop a product, process, system, or service	Making connections, making assessments, decision making

13		Planning/ Strategy	Elements of the planning and strategy phase of the design process related to providing a product, service, system, or process	Planning, goal setting, market search, opportunity identification
14		Development/ Implementation	Elements denoting the methods and activities that lead to a prototype of a product or idea	Ideations, prototype development, design alternatives
15		Evaluation/ Assessment	Elements noting the experiments and tests used to evaluate if a product, process, system, or service meets stated needs or objectives	Testing, experiment, assessment
16		Collaboration	Elements noting the process or actions involved in working with others toward a shared goal	Networking, cooperation, discussion, feedback
4	Business/ Company/ Organization		Elements of EM that refer to the skills, necessities, and outcomes of providing a product or service.	
17		Channels	Elements showing the means through which an organization communicates with and delivers a specific product or service (i.e. value) to its customers or end users	Supply chain, marketing a product, distribution system
18		Start-up	Elements of organizations referring to things needed to start a business or a new business line or service	Investment/investors, partners, startup, mission statement
19		Operations	Areas of expertise and management specifically related to business operations	Accounting, financial advising, economics, administration, legal
20		Resources	Elements noting the inputs needed to produce the desired skills, solve necessities, deliver outcomes, or provide a product or service.	Capital, equipment, infrastructure, human resources
5	Innovation / Intellectual Property		Elements noting original products, services, processes, ideas, or research used to fuel the creation process or that are produced from the creation process.	

21		Novel/new invention	Elements referencing innovations in technology, products, ideas, or research that does not yet exist	Novel, creation of technology, new research
22		Existing/ Modifying	Elements referencing innovations in technology, products, or ideas that already exist or that are modified	Products that exist, using products differently, making changes to products
6	KSA's		Elements of Knowledge, Skills, and Attributes specific to an individual with an EM	
23		Knowledge & Skills	Elements related to knowledge and abilities that an individual can learn (through education or engineering practice) as they **develop their EM**	Technical skills, professional skills, leadership, science, engineering
24		Attributes & Attitudes	**Character traits** that describe a person with an EM. It includes concepts related to their personality such as attitudes and personal traits	Creativity, curiosity, open-minded,
25	Uncategorized		Terms that do not fit within any of the categories, or fit within too many categories to select one	