

Course Syllabus for User Innovation

Approved by the Academic Council

Of Department of Educational Programmes ISSEK

Minutes AC2

Developer	Konstantin Fursov Candidate of Sciences (PhD), Associate Professor, Leading Research Fellow, Institute for Statistical Studies and Economics of Knowledge
No. of credits	3
Contact hours	32
Independent study (hours)	82
Year of study, degree programme	Master's programme "Governance of Science, Technology and Innovation" 2 nd year, 1 st module, compulsory
Study format	No use of on-line courses

1. Course Description

a. Abstract

The development of user-driven innovation has been conceptualized by academic research now for quite some time arguing for an idea that users may show remarkable levels of sophistication in adopting or creating new products. This phenomenon has ever since triggered the interest of scholars. Active individuals who are ahead of the market and could be engaged in co-creation of certain goods and services together with firms since then are considered as one of the driving forces of innovation as well as firms aiming at problem-solving that innovate mostly for themselves. Recent contributions enthusiastically have long moved beyond the original demographic studies of user innovation and discuss how users can be motivated and their creative potential be harvested, which tools can be used for successful implementation of innovation, what is the role of amateur or hobbyist communities in innovation generation, etc.

The course welcomes all those interested in social studies of innovation, science, technology and innovation studies.

The course is delivered to master students of The National Research University – Higher School of Economics/HSE in one module. The course length is 114 academic hours of which 32 hours are classroom hours for lectures and seminars and 82 hours are devoted to self-study.

Assessment is based on current work and written task. Academic control includes participation in discussions (seminars) and one short essay. The course contains five core topics, which are mutually exclusive but collectively exhaustive to cover the subject.

b. Pre-requisites

Formative reading

2. Learning objectives

- Understanding of the importance and connectedness of user-driven innovation for economic and social development.
- Clarification of basic concepts used in literature to describe user-driven innovation as an economic and social phenomenon.
- Reflection on key tensions that appear in scientific papers standing for different approaches to conceptualization and analysis of issues related to innovation development and diffusion and engagement of users.

3. Learning outcomes (competencies)

- Understanding research terminology
- Understanding the types of innovation and role of users in generation and dissemination of new ideas and practices
- Ability to use theory and previous research to create research questions and hypotheses
- Ability to independently develop a user-innovation study

4. Course Plan

The course spans one academic module. The teaching is based on selected writings and experiences of faculty members.

Lectures are organized in order to clarify major concepts and categories used in user innovation studies and integrates current knowledge in innovation development and diffusion. Seminars will follow lectures. They are aimed at sharing participant's reflections on the approaches introduced in the literature and developing analytical and practical skills required to discuss at highly professional level topics aroused during the course.

a. Lectures

Lectures are designed to deliver theoretical frameworks and international experiences. The course is accompanied by seminars, some sessions will feature additional foreign experts.

b. Seminars

Seminars consist of practical sessions and moderated discussions that will provide students with indispensable skills for social analysis of user-innovation.

During seminars, students will discuss particular cases of user engagement in innovation development and problems introduced in the papers included in the essential reading list for each lecture (marked as basic literature). Students are welcome to undertake a broader optional reading that may assist in building up stronger argumentation and help greatly both in writing an essay. Questions for discussion will be announced in advance, therefore, all participant are expected to get prepared for the seminar.

c. Reading List

Literature recommended for reading is assigned to the course topics presented in the Course Contents below.

Table 1 – Thematic Plan and Assessment Formats

Topic	Total	Lectures	Seminars	Self-study	Expected learning outcomes (ELO) to be assessed	Assessment formats
Innovation by users and lead users	22	4	2	16	<ul style="list-style-type: none"> – Understanding research terminology – Understanding the types of innovation and role of users in generation and dissemination of new ideas and practices – Ability to use theory and previous research to create research questions and hypotheses – Ability to independently develop a user-innovation study 	<ul style="list-style-type: none"> – Case-study elaboration (in a format of an essay) – Participation in discussions and presentation of case study results (colloquium)
Innovation Communities and Community Economics	22	4	2	16		
Innovation toolkits	22	4	2	16		
Innovation Policy, Innovation Measurement	22	4	2	16		
Researching user innovation and practical issues	26	4	4	18		
	114	20	12	82		

Course Contents

1. *Innovation by users and lead users*

Role of individuals and households in innovation development. A manufacture-centered paradigm and the consumer-centered paradigm and their integration. Mere users and lead users Differences between individuals who successfully carry out innovation projects in the household sector and those who do not. Factors to increase the amount of successful innovation.

Recommended literature:

- Stock, R. M., Oliveira, P., & von Hippel, E. (2015). Impacts of Hedonic and Utilitarian User Motives on the Innovativeness of User-Developed Solutions. *Journal of Product Innovation Management*, 32(3), 389-403.
- Stock, R. M., von Hippel, E., & Gillert, N. L. (2016). Impacts of personality traits on consumer innovation success. *Research Policy*, 45(4), 757-769.
- Von Hippel, E. (1976). The dominant role of users in the scientific instrument innovation process. *Research Policy*, 5(3), 212-239.
- Von Hippel, E. (1978). Successful industrial products from customer ideas. *The Journal of Marketing*, 39-49.
- Von Hippel, E. (1986). Lead users: a source of novel product concepts. *Management Science*, 32(7), 791-805.
- von Hippel E. (2017). *Free Innovation*. Cambridge, Massachusetts, USA: MIT Press.

2. *Innovation Communities and Community Economics*

The efficiency of innovation development by product users and product producers. Collaborative innovation and innovation communities and their role in altering economic landscape. User communities. User communities and peer-to-peer innovation diffusion. Sharing economy. Do it yourself (DIY), open-source software and other community-based movements.

Recommended literature:

- Baldwin, C., Hienerth, C., & von Hippel, E. (2006). How user innovations become commercial products: A theoretical investigation and case study. *Research Policy*, 35(9), 1291–1313.
- Franke, N., & Shah, S. (2003). How communities support innovative activities: an exploration of assistance and sharing among end-users. *Research Policy*, 32(1), 157-178.
- Füller, J., Matzler, K., & Hoppe, M. (2008). Brand community members as a source of innovation. *Journal of Product Innovation Management*, 25(6), 608-619.
- Füller, J., Schroll, R., & von Hippel, E. (2013). User generated brands and their contribution to the diffusion of user innovations. *Research Policy*, 42(6-7), 1197-1209.
- Hienerth, C., Von Hippel, E., & Jensen, M. B. (2014). User community vs. producer innovation development efficiency: A first empirical study. *Research Policy*, 43(1), 190-201.
- Hyysalo, S., & Usenyuk, S. (2015). The user dominated technology era: Dynamics of dispersed peer-innovation. *Research Policy*, 44(3), 560–576.

3. *Innovation toolkits*

Practical applications and ways to organize and support user-driven innovation. Guidance for users to ensure innovation design and for producers to elaborate integrated circuits to the development of customized products.

Recommended literature:

- Franke, N., & Piller, F. T. (2003). Key research issues in user interaction with user toolkits in a mass customisation system. *International Journal of Technology Management*, 26(5-6), 578-599.
- Franke, N., & Von Hippel, E. (2003). Satisfying heterogeneous user needs via innovation toolkits: the case of Apache security software. *Research Policy*, 32(7), 1199-1215.
- von Hippel, E. (2001). Perspective: User Toolkits for Innovation. *Journal of Product Innovation Management*, 18 (4), 247–257.
- Von Hippel, E., & Katz, R. (2002). Shifting innovation to users via toolkits. *Management Science*, 48(7), 821-833.

4. Innovation Policy, Innovation Measurement

Measurement of user innovation and the transfer of user innovations to producers within and beyond existing statistical frameworks. National surveys on user-driven innovation. Innovation policies and practices needed to support innovation by individual and corporate users.

Recommended literature:

- De Jong, J. P., von Hippel, E., Gault, F., Kuusisto, J., & Raasch, C. (2015). Market failure in the diffusion of consumer-developed innovations: Patterns in Finland. *Research Policy*, 44(10), 1856-1865.
- Fursov K., Thurner T. (2016) Making It Work! – A Study of User-Innovation in Russia, *Science and Public Policy*.
- Gault, F. (2012). User innovation and the market. *Science and Public Policy*, 39(1), 118-128.
- Gault, F. (Ed.). (2013). *Handbook of innovation indicators and measurement*. Edward Elgar Publishing.
- Kim, Y. (2015). Consumer user innovation in Korea: an international comparison and policy implications. *Asian Journal of Technology Innovation*, 23(1), 69-86.
- OECD/Eurostat (2018). *Oslo Manual 2018: Guidelines for Collecting, Reporting and Using Data on Innovation*, 4th Edition, The Measurement of Scientific, Technological and Innovation Activities, OECD Publishing, Paris/Eurostat, Luxembourg.
- von Hippel, E., & Jin, C. (2008). The major shift towards user-centered innovation: Implications for China's innovation policymaking. *Journal of Knowledge-based Innovation in China*, 1(1), 16-27.

5. Research methods and practical issues

Research tools to study user innovation. New methods for dividing up tasks, for experimenting in parallel, and for identifying rare individuals who might have something important to contribute. A practical guide for lead user project teams and its applications.

Recommended literature:

- Churchill, J., von Hippel, E., & Sonnack, M. (2009). Lead user project handbook: A practical guide for lead user project teams.
- Ebel, P.; Bretschneider, U. & Leimeister, J.-M. (Hrsg.) (2013): The Lead User Method for SME - a Guidebook for Practitioners and Facilitators. Erscheinungsjahr/Year: 2013. Verlag/Publisher: Chair for Information Systems, Kassel University, Kassel, Germany.
- von Hippel, E., Franke, N., & Prugl, R. (2006). Efficient identification of leading-edge expertise: screening vs. pyramiding. In Technology Management for the Global Future, 2006. PICMET 2006 (Vol. 2, pp. 884-897). IEEE.
- Von Hippel, E., Franke, N., & Prüggl, R. (2009). Pyramiding: Efficient search for rare subjects. Research Policy, 38(9), 1397-1406.

5. Grading system

The overall course grade G (10-point scale) is calculated by the formula:

$$G = 0.8 E + 0.2C,$$

includes results achieved by students in their written essay (E) and colloquium (C); it is rounded up to an integer number of points.

a. Essay (E)

During the course, students will be asked to write one short essay of around 3000-5000 words developing a particular topic covered by the course. Essay is a piece of written work focused on a suggested or selected topic and considering one particular case of user innovation. Essay should answer the following criteria:

- 1) Aims and objectives – research question, aims and objectives are concisely elaborated. Significance emerges logically from construction of argument and clearly articulated.
- 2) Background and literature review – creative and organised literature review that outlines the background and context for the research project.
- 3) Methodology – creative and appropriate methodology is clearly articulated and justified.
- 4) Presentation – proposal is logical in its construction with minimal spelling, punctuation or grammatical errors. In-text and reference list consistently adhere to a single Author-date system throughout.

b. Colloquium (C)

Participation in group discussions at which students deliver addresses on their essay topic and then answer questions relating to them. There are two colloquiums during the course. During a mid-term colloquium, students will be asked to present their essay topics and suggested strategy of analysis for the selected case study. During the second colloquium students will be asked to defend their essay in a form of a presentation explaining the achieved results. Each colloquium is assessed by 10-grade scale. Both grades are taken into consideration for the final grade calculation.

6. Examination type

There is no final exam at the course. The grade is cumulative and depends on the implementation of home assignments.

Summary Table: Correspondence of ten-point to five-point system's marks

Ten-point scale [10]	Five-point scale [5]
1 – unsatisfactory 2 – very bad 3 – bad	Unsatisfactory – 2
4 – satisfactory 5 – quite satisfactory	Satisfactory – 3
6 – good 7 – very good	Good – 4
8 – nearly excellent 9 – excellent 10 – brilliant	Excellent – 5

7. Methods of instruction

The course combines lectures and seminars through a participatory sessions and group work. Lectures are designed to clarify major theoretical concepts and international experiences employed in regional STI policy studies. Seminars are aimed at sharing the students' reflections on the approaches introduced in the literature and developing analytical and practical skills required to professionally discuss topics aroused during the course. The students are expected to be ready for discussions using the recommended readings and lecture materials.

8. Resources

The list of required and optional readings is presented in the Course Contents as distributed between the topics. Lecture materials and other information needed for group tasks implementation and home assignments, as well as the list of records, will be available at the HSE Learning Management System (LMS). No specialized software or equipment is required. Students are recommended to use HSE e-Library to access the publications and recommended reading from the list below.

HSE Library e-resources: <https://library.hse.ru/en/e-resources>

Eric von Hippel's personal webpage and a library: <https://evhippel.mit.edu/papers/>

9. Special equipment

- laptop
- multimedia projector
- screen
- flipchart
- markers

10. Organization of Studies for Persons with Limited Mobility and Disabilities

If necessary, learners with limited mobility or a disability (as per his/her application), as well as per his/her individual rehabilitation programme, may be offered the following options for receiving learning information with due consideration of his/her individual psycho-physical needs (e.g., via eLearning studies or distance technologies):

- for persons with impaired vision: enhanced fonts in hard copy documents; e-documents; audio files (transfer of study materials to an audio-format); hard copy documents with the

- use of Braille; individual consultation with a facilitated communicator; individual assignments and mentoring;
- for persons with hearing impairments: in hard copy; e-documents; video materials with subtitles; individual consultation with a facilitated communicator; individual assignments and mentoring;
 - for persons with a muscular-skeleton disorder: in hard copy; e-documents; audio-files, individual assignments and mentoring.