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LABOR MIGRATION, KNOWLEDGE, AND CREATIVITY UNDER NIS.2: REPRODUCTION OF HUMAN POTENTIAL IN THE PROCESS OF THE NOOTRANSITION

Abstract: This article furthers the study of labor migration as an indicator of the transformation of the political economy category of “labor” within the theory of noonomy. Prior works have substantiated the spatial and functional modalities of labor migration and examined digital employment as a form of labor function displacement. The present study shifts the core analysis toward the migration of knowledge, understood as the movement of open and mastered knowledge implemented into activity. Knowledge is treated as the primary substance of the aromorphosis of labor; labor, as the method of its objective realization; and creativity, as the highest form of knowledge-intensive activity, in which what is known receives objective embodiment in a design, a mental object, and a socially useful innovation. The essence of this transition is that labor gradually emerges from the regime of external necessity and unfolds as a form of human measure, responsibility, and the creation of a new social result. It is substantiated that a territory develops to the extent that it reproduces knowledge-intensive functions within its own educational, research-and-production, and cultural space, retains the creative function, and transforms worker mobility into the circulation of human potential. The article concludes that under the conditions of NIS.2, labor mobility policy must be viewed as an integral part of the reproduction of human potential, and its substance must be determined by the embedding of knowledge in labor, the expansion of human creative participation, and the institutional consolidation of the knowledge-intensive functions of the new industrialization.

Keywords: noonomy, nootransition, NIS.2, knowledge, knowledge-intensive labor, knowledge intensity, creative labor, creativity, mental object, labor migration, knowledge migration, functional migration, spatial migration, embedding of knowledge, human potential, new industrialization.

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第二代新型工业化(NIS.2)条件下的劳动力迁移、知识与创造力： 智慧型转型过程中的人力资本再生产

摘要: 本文继续探讨了劳动力迁移作为智慧经济理论中“劳动”这一政治经济范畴的重构指标的问题。在先前的研究中, 已论证了劳动力迁移的空间与功能模态, 并将数字化就业视为劳动功能转变的一种形式。本研究将分析重点转向知识迁移, 将其理解为已被运用到实践中的开放的知识的运动。知识被视为劳动形态演化的初级实体; 劳动被视为知识的客观上的实现方式; 创造力则被视为知识密集型活动的最高形式, 在此活动中, 被认知的内容通过构想、心理对象及对社会有益的创新获得客观体现。这一转变的意义在于, 劳动正在逐渐摆脱来自外部的必须性的束缚, 展现为一种体现人类的手段、责任以及创造新社会成果的形式。研究论证了: 一个地区的发展程度取决于其在自身教育、科研生产及文化空间中知识密集型功能的再生产能力, 取决于其保持创造性功能的能力, 以及将劳动者流动性转化为人力资本流通的能力。研究得出结论: 在NIS.2条件下, 劳动力流动政策应被视为人力资本再生产的组成部分, 其内涵应由知识在劳动中的扎根、人类创造性参与的扩大以及新工业化中知识密集型功能的制度化固定来决定。

关键词: 智慧经济、智慧型转型、NIS.2、知识、知识密集型劳动、知识密集度、创造性劳动、创造力、心理对象、劳动力迁移、知识迁移、功能迁移、空间迁移、知识扎根、人力资本、新工业化。

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Introduction

Previous publications in a series of papers on labor, creativity, and scientific and technological progress, published by S. Y. Witte Institute for New Industrial Development (INID) between 2016 and 2026, form the starting point for this study. The concept of “aromorphosis of labor”, coined by S.D. Bodrunov (see the proceedings of the St. Petersburg International Economic Congress (SPEC-2025)), has recently undergone significant development. In the report by S.D. Bodrunov and N.D. Dmitriev, labor migration is shown as an indicator of the aromorphosis of “labor” political economy category: the spatial movements and functional transitions of workers are evidences of changes in employment and simultaneously reveal a deeper restructuring of human connection to production [Bodrunov, Dmitriev, 2025]. Labor migration acts as a “signal” of the aromorphosis of labor, where reproductive operations gradually move to the technosphere, and human participation shifts toward goal-setting, design, control, and creative achievement of results.

In S.D. Bodrunov’s article [Bodrunov, 2026], digital employment is examined as a form of dual labor migration, where labor function begins to shift before the worker’s physical movement. A person may remain in their current location, while their activity is already integrated into a networked economic cycle subject to a different density of knowledge, cooperation, and appropriate

tion of results. Along with this function, a person's competencies and products of their labor are drawn into the movement.

This article shifts the analysis to a more profound "shift in the labor function" – the **migration of knowledge**. Here, knowledge is the active ability of humans to conceive, engage in cooperation, and translate creative function into socially useful innovation. It takes on an objective form in human activity, then returns to social reproduction in the form of a technology, project, cultural product, engineering solution, or new form of cooperation. Therefore, the subject of our analysis is connected with how knowledge is "rooted in labor" (implemented and becomes its integral part), where it goes beyond physical territory, and where it is transformed into a source of expanded reproduction of human potential.

Knowledge as a Primary Prerequisite for Shifts in Labor

We proceed from the premise that knowledge becomes the primary substance of production transformation and its fundamental factor at the NIS.2 stage [Bodrunov, 2016]. Discovered and assimilated knowledge is embodied in technology, organization, and product, giving production a knowledge-intensive nature and changing the very purpose of humans within the productive forces. The worker gradually overcomes the confines of a repetitive operation and increasingly becomes a bearer of an intention, capable of directing technical action toward a socially beneficial deliverables.

In classical industrial production, knowledge was largely alienated from the worker and enshrined in technology and work regulations; the worker maintained a predetermined order of operations. In NIS.2, labor goes beyond operational obligation and acquires the characteristics of conscious creation.

In this regard, Marx's idea of human's transition from a direct appendage of the machine to a position of controller and regulator of the production process retains its methodological force [Marx, 1973]. However, a technology shift in itself does not yet signify the liberation of labor: capital is capable of appropriating knowledge and turning it into a new form of subordination (which is what we are witnessing today!). NIS.2 opens up a historic opportunity of a different order – the transformation of knowledge from a resource for value appropriation into a socially directed force for the aromorphosis of labor, as described in the works of S.D. Bodrunov [Bodrunov, 2025a].

J.K. Galbraith demonstrated in his research that a developed corporation can no longer be reduced to an abstract market: its operations are determined by technostructure, planning, and managed application of knowledge [Galbraith, 1967]. D. Bell developed this point in his analysis of post-industrial society, where theoretical knowledge becomes the "axial principle" of social organization, determining innovation, professional structure, and the nature of future services [Bell, 1973]. The theory of noonomy shifts the focus from the professional class and technostructure to Knowledge as the primary substance of knowledge-intensive labor and the future social structure.

P. Drucker, introducing the "knowledge worker", captured the shift in late-industrial society: productivity increasingly depends on the person's ability to handle knowledge [Drucker, 1969]. For the theory of noonomy, this figure remains transitional! Knowledge is not "produced" or created out of nothing – people discover it, master it, and implement it into their activities. Therefore, the "knowledge worker", limited by the market valuation of skill, does not yet express the comprehensiveness of the nootransition. The next step concerns the person as the bearer of human potential – a subject capable of transforming public knowledge into creative action and socially beneficial deliverables.

In this regard, the category of human potential takes precedence over the market category of human capital. Human capital primarily expresses the value projection of skills, while human potential reveals a human's ability to acquire knowledge, transform it into creative action, and participate in the creation of socially beneficial deliverables. It is not limited to qualifications and professional aptitude as it includes cultural self-improvement, shared participation, and responsibility for the meaning of what is created.

K. Freeman shows innovation as a publicly organized movement of knowledge: innovation is consolidated through the interaction of science, education, industrial cooperation, and technology policy [Freeman, 1987; Freeman, Louçã, 2001]. Innovation thus acts as a form of collective circulation of knowledge in productive forces. For this study, this has direct implications: the migration of knowledge signifies the movement not of information per se, but of society's ability to transform knowledge into labor, labor into creativity, and creativity into publicly useful innovation.

In NIS.2, knowledge becomes the primary content of labor. Through conception and mental object, it enters into action, receives objective expression in a publicly useful innovation, and returns to reproduction as new knowledge. Breaking this chain means shifting the creative function to an external center; maintaining it fosters the entrenchment of knowledge in labor and the ability of the territory to reproduce human potential.

The cycle of knowledge reproduction in creative labor is presented in Figure 1. It shows how the subject of creative labor translates open knowledge into knowledge-intensive action, forms an image of the future solution, and returns the result to social reproduction.

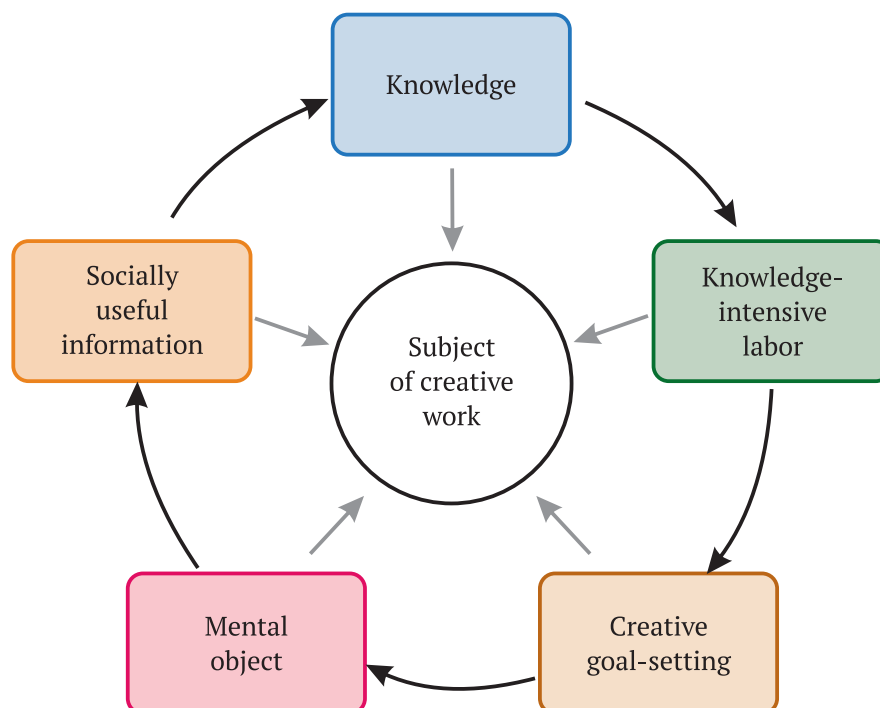


Fig. 1. Circle of Knowledge Reproduction in Creative Labor

Note: The product of creative work returns to social reproduction as newly discovered knowledge, strengthening the capacity of human and territory for subsequent acts of creation. Source: adapted by the authors from [Bodrunov, 2018; Bodrunov, 2021], in the light of the approach to mental object [Freeman, 2021].

Creative Work as the Ultimate Form of Knowledge-Intensive Labor

Creative work cannot be contained within the confines of art, media, design, and the cultural industries; it is much broader, despite the fact that these are the areas that provide measurable manifestations of creative labor, often market-driven. Its political economy content is revealed where knowledge ceases to be an external resource for an operation and becomes the force of conception, for example, in engineering solutions, scientific research, process engineering, software code, educational methods, cultural forms, and new modes of cooperation. What these manifestations have in common is the transformation of knowledge into a conception and then into a creative action that leaves its mark on social reproduction – that is, the transformation of this action into a publicly useful innovation.

The Old Slavonic word “*tvoriti*” (to create) refers to the act of creation, to the creation of a form that has not yet existed in specific human and social experience. The Russian word “*tvorchestvo*” (creation, creative work) retains this depth: it embodies the derivation of meaning from possibility into being, the birth of form, measure, and the human orientation of the result. Therefore, creative work expresses not external originality, but the objective destiny of knowledge, its value density and human meaningfulness.

Creativity captures the observable aspect of creative work – the ability to create a distinguishable product, suitable for evaluation by both the market and the customer, as well as other audiences, including the cultural environment. Creative work goes deeper – it is associated with the creation of meaning, purpose, and a method of action. Creative work, however, is not limited to creative industries; they identify that part of it that has taken on a commodity, service, or cultural-institutional form. In this regard, the works of A. Freeman are significant, showing the mental object as an intermediate entity between the conception and its objective embodiment [Freeman, 2021; Freeman, 2023].

Table 1

Creative Work and Creativity in the Analysis of Knowledge-Intensive Labor.

Parameter	Creative work	Creativity	Comparison findings
Meaning	Creating a sense bearing form of action	Creating a distinctive and marketable product	Creativity captures the observable manifestation of a part of creative work
Connection with knowledge	Knowledge becomes the material of conception and the environment for human self-realization	Knowledge is used to produce a result that is suitable for recording and dissemination	Knowledge is primary for both phenomena
Result/deliverables	Innovation, project, technology, cultural form, new mode of cooperation	Product, service, content, design, market or cultural outcome	Creative work is not limited to creative sector
Evaluation	Measure of human development, social utility and expansion of freedom	Distinctiveness, demand, income, cultural visibility	A noocriteria-based, not just market-based, evaluation is required
Limits	May not have immediate market manifestation	More often it takes a measurable form in industries, platforms and orders	Economic visibility is not equal to the fullness of creative content

Note: Creativity is the observable economic manifestation of creative labor, while creative work encompasses the deeper act of creating meaning, form, and mode of action. Source: prepared by the authors.

The English word “*creativity*” often denotes the ability to create something original and feasible, while the Russian word “*tvorchestvo*,” which derives from “*tvoriti*,” retains a deeper meaning of creating the form, value, and human measure of the result. This distinction is summarized in Table 1.

Knowledge Migration and Territorial Rooting of the Creative Function in the Context of NIS.2

The concept of dual labor migration, introduced in previous articles [Bodrunov, Dmitriev, 2025; Bodrunov, 2026], is further expanded in this study. Spatial migration captures the movement of the worker, while functional migration captures the shift in labor function. Behind this visible movement lies a deeper process.

Knowledge migration expresses the inner essence of spatial and functional migration. When a specialist enters a research and production hub, the ability to engage in knowledge-intensive work is transferred there. When a digital function is consolidated in an external production hub, the design ability and mental image of the future result flow there. This is how “**silent migration**” occurs – a subtle, almost statistically invisible shift in the creative core of a territory.

The familiar phrase “*brain drain*” captures only the external symptom. The process itself is rooted in the removal of knowledge from local production. A territory can retain its population and employment, but outsource the most complex stages of labor, including its creative functions. We observe that employment then remains an external veneer, while the ability to create one’s own future gradually moves beyond the borders of the territory.

The internal dynamics of knowledge migration allow us to distinguish three modes of this movement:

1. Knowledge outflow occurs when established competencies serve an external node and provide a weak back impulse to the local environment.
2. Knowledge circulation occurs when projects, practices, and new requirements for the quality of education and production are reintroduced.
3. Knowledge rooting takes place where the territory transforms knowledge into labor, creative work and new results in its own economic and cultural space.

This takes the analysis beyond the choice between closure and passive outflow.

Nootransition [Bodrunov, 2025b; Bodrunov, Arkhipova, 2024; Bodrunov, Glazyev, 2023] requires a change in the very content of movement. Mobility must become the circulation and rooting of knowledge. Labor migration in this case is an issue of the territory’s historical capacity to enter NIS.2 as a creative subject, not as a “donor of human material” for external appropriation chains.

Territory in NIS.2 acts as a reproductive environment for knowledge-intensive functions. Its significance is determined by its ability to connect people and knowledge in a holistic creative environment. In the language of V.I. Vernadsky, scientific thought has a planetary nature [Vernadsky, 1991], but its movement, including the migration of knowledge, takes on different qualities: it either imbues a territory with new meaning or devastates its creative core. Knowledge becomes a social force and transforms not a single profession, but the horizon of human existence. Where it becomes a public good, labor gains the opportunity to transcend external necessity and move toward a form of conscious creation.

Creation begins before the thing itself – in the conception where knowledge is assembled into an image of the future and seeks a form of social embodiment.

This opens up a higher level of analysis: knowledge migration becomes a sign of a historical shift in the quality of productive forces. In the works of S. Yu. Glazyev, his analysis of technological paradigms and the emergence of an integrated world economic order reveals this depth of transition [Glazyev, 2022]. The transition to the sixth technological paradigm (according to Glazyev) imbues this movement with a particular historical tension, as the decisive factor is the territory's ability to transform the knowledge-intensive content of new technologies into its own labor potential and, importantly, into creative potential. From the perspective of NIS.2, this signifies the rise of Knowledge to the role of an internal law of production: through it, labor acquires meaning, territory acquires the capacity for self-development, and mobility becomes a circulation for human potential.

In the context of the new industrialization, this shift takes on systemic significance. Technological renewal becomes a truly new industrial development only when production is filled with knowledge to the extent that humans emerge from the role of operator and become bearers of ideas [Bodrunov, 2021]. The category of "knowledge economy" is limited here – it identifies knowledge primarily as a resource for efficiency [Bell, 1973; Drucker, 1969], whereas noonomy links it with the movement from economic coercion to creative work as the ultimate form of human activity [Bodrunov, 2023; Bodrunov, 2025c]. NIS.2 makes Knowledge the primary force in the humanization of production.

R.S. Grinberg's assertion that "smart factories" require "smart people" and a "smart economy" takes the new industrialization beyond the technocratic understanding [Grinberg, 2016]. A machine becomes "smart" only when its intellectual capacity is matched by human rationality, responsible labor, and the social orientation of the outcome. This type of economy emerges when knowledge is given effective form through labor and protected from dissolution in the data stream. Data redundancy makes the noo-selection of knowledge crucial – the ability to separate meaning from information noise and transform machine inference into a humanly meaningful decision [Dmitriev, 2025; Dmitriev, 2026]. Noo-selection becomes a hidden measure of territorial development (or even semantic sovereignty), since a territory capable of sustaining the selection of meaning determines the direction of future labor.

At this level, the distinction between the territory of preparation and the territory of rooting takes on the meaning of the spatial **entelechy of knowledge** (according to Aristotle; this is the transition from *dynamis* (potential) to *entelecheia* (realization), when a latent capacity takes on an active form and becomes a force for development).

The territory of preparation shapes a person as a bearer of such potential, but the realization of a conception often extends beyond the environment that gave birth to it. The rooting space brings this potential to action and transforms it into its own form of development. In the first case, human potential becomes the resource of an external node. In the second, knowledge returns to the space that generated it as the capacity for independent creation.

The transition from human capital of neoliberal paradigm to human potential of NIS.2 receives spatial expression. The market category of "capital" measures skill through return; the category of "potential" reveals the environment's ability to bring human intention to a creative result [Yakovleva, 2024; Bodrunov et al., 2025]. A.V. Buzgalin and A.I. Kolganov demonstrate how late capitalism draws creative abilities into precarious forms of employment, transforming creativity into a mobile resource of so-called "external appropriation" [Buzgalin, Kolganov, 2019]. Hence, the rooting of creative function becomes a way to preserve for the territory a subject capable of continuing its development.

Developing the creative function means more than maintaining employment. It creates a *topos* for the realization of knowledge, i.e., an environment where ideas take on objective form, labor unlocks creative content, and mobility returns the territory to increased human potential. In the ancient tradition, *topos* means place, and Aristotle's *entelecheia* reveals the transition of potential to actualization [Aristotle, 1976; Aristotle, 1981]; for the analysis of knowledge migration, this means movement from prepared ability to creative result.

In NIS.2, the subject of the rooted creative function acts as the bearer of conception, measure, and responsibility, going beyond mere qualifications. Aristotle's *entelechy* helps to discover the form of this transition [Aristotle, 1976]; Vernadsky's understanding of scientific thought as a planetary phenomenon sets the scale of knowledge movement [Vernadsky, 1991]; Bodrunov's noonomic approach reveals Knowledge as a force for the transformation of labor, needs, and social existence [Bodrunov, 2018].

The typology presented in Table 2 shows the degrees of realization of human potential in the space of nootransition. Some territories prepare humans for external integration, others maintain creative function in their own development, and still others transform mobility into a reversible movement of knowledge. Therefore, knowledge migration is linked to a key question: where does human potential become a source of self-development, and where does it become resource for external appropriation?

Table 2
Typology of territories based on their ability to reproduce creative function.

Type of territory	Status of knowledge	Content of labor	Migration result
Reproductive territory	Knowledge remains an unclaimed opportunity	Labor is consolidated in the executive tasks and predetermined outcome	Outflow of people and labor functions
Preparation territory	Education creates potential, but the conception seeks fulfillment outside the environment that generated it	Labor is formed as a capacity for future action	Removal of knowledge
Platform-dependent territory	Knowledge connects to an external digital node	Remote function services someone else's result cycle	Hidden migration of knowledge
Rooting territory	Knowledge receives the topos of realization	Labor is revealed as a creative action	Rooting of creative function
NIS.2 crystallization territory	Knowledge becomes a self-reproducing force of development	Labor takes the form of co-creation and meaningful selection (noo-selection) of the result	Circulation of knowledge and the growth of human potential

Note: The typology shows the degrees of realization of human potential in the space of nootransition. The NIS.2 crystallization territory is considered the ultimate type, where knowledge returns to the development of the environment itself and consolidates its semantic sovereignty. Source: adapted by the authors from [Bodrunov, Dmitriev, 2025; Bodrunov, 2026] in view of S.D. Bodrunov's works on noonomy [Bodrunov, 2018; Bodrunov, 2021].

Knowledge Migration and Institutions for Rooting of Creative Labor

The form of employment provides only the external veneer of labor. Digital work can accelerate reproductive performance; the creative sector can serve the chrematistics of simulative needs; the migration of a professional can become the removal of knowledge from the environ-

ment where it originated. Therefore, analysis must address the very content of labor, where the fundamental difference emerges: labor either reveals the subjective power of creation within a person or transforms it into an alienated function of external reproduction.

In NIS.2, the “level of creativity” (the saturation of work activity with creativity) is determined by the degree of a person’s involvement in the birth of a conception. Its core lies in the ability to retain the future result before its externalization and to transform the task into a responsible action. For A. Freeman, mental object acts as a pre-objective state of the result, connecting the conception with subsequent implementation; it allows us to see creative work before the product appears – in the formation of the image of the future [Freeman, 2021; Freeman, 2023]. For S.D. Bodrunov, Knowledge is revealed as the primary force of the aromorphosis of labor, and creative activity as a person’s exit from the mode of reproductive performance to creative participation [Bodrunov, 2025a; Bodrunov, 2026].

The criterion for the level of creativity in labor is the degree to which the conception has been realized. Labor enters a creative state when a person retains an internal image of the result, relates it to public benefit, and accepts the creation as their own share of responsibility. Here (and specifically here) activity becomes the entelechy of knowledge: hidden ability takes the form of action; expended energy is returned to the person as a new store of understanding and readiness for the next act of creation.

K. Marx demonstrated that the commodity form gives social relations a material appearance [Marx, 1960]. In the context of digital employment, this inversion takes on a new form: the human creative function can be represented as a “digital footprint,” a set of metrics and an alienable fragment of a platform order. K. Polanyi showed the limits of the market transformation of labor into a “fictitious commodity” [Polanyi, 2001], and H. Braverman – how managerial rationalization impoverishes the content of skilled labor [Braverman, 1974]. In the platform organization of employment, these warnings sound new, since algorithms can appropriate not only the result and its standard, but also the measure itself, the limit of permissible action.

This necessitates a noocriterial assessment of labor.

Digital form, speed of execution, and outward creativity do not necessarily indicate creative content. Creative work is that in which knowledge is transformed into meaningful action, the result achieves policy relevance, and the person retains the capacity for further development. Reproductive performance, on the other hand, can be technologically accelerated but still remain labor without an internal conception.

This leads to an institutional shift in migration policy in NIS.2. If knowledge is primary, and creative work is the ultimate form of knowledge-intensive labor, mobility management extends beyond administrative restraints. Its objective becomes the rooting of creative function: the creation of conditions under which human movement enhances the reproduction of knowledge and preserves the environment that generated it as the source of new results [Bodrunov, Dmitriev, 2025; Bodrunov, 2026].

Education here ceases to be preparation for an employer’s needs. It becomes an introduction of human to complex action where knowledge is separated from information noise, and the future professionals learn to be responsible for what they create. This approach is consistent with a strategic vision, since it is in strategizing the transformation of society that knowledge and technology are viewed as interconnected foundations for future development towards noonomy [Kvint, Bodrunov, 2021]; therefore, education begins to serve noosociety when it leads knowledge

out of the confines of academic secrecy to scientific and industrial co-creation and shapes the subject of future action.

Culture acts as an internal condition for the rooting of knowledge. It sustains the human focus of needs and the capacity for public recognition of new results. Without a cultural dimension, technical efficiency easily slips into chrematistics, serving a simulative demand. The rooting environment must connect the production task with noovalues, so that what is created becomes not only applicable but also publicly feasible [Grechko, Pleshivtseva, 2025; Stasev, Grechko, Tyulina, 2025]. This is where the value system of nootransition manifests itself – culture returns the human role of knowledge migration and transforms movement of the creative function into the reproduction of meaning within the generative environment.

Migration policy in the context of NIS.2 must provide conditions under which human mobility enhances the reproduction of labor and creative work. Administrative retention of professionals produces a short-term effect; sustainable development occurs where territory becomes a place (*topos*) for the return of a conception, and where cultivated capacity is given the opportunity to transform into creative results. It is in such environments that NIS.2 crystallizes.

The practical content of this policy is revealed through the institutional linkages between education, research, and production. Professionals, especially beginners, must see before them not only a career trajectory, but also a horizon of creative participation where a complex task requires independent conception and a secure outcome. Social protection for new forms of labor is part of this system as a prerequisite for maintaining the creative function, not as external compensation for instability.

Within the country's domestic space, this process manifests itself as an asymmetry between the environment where knowledge is generated and the node where the results are appropriated. A region that trains professionals and then loses their creative function becomes a *donor of knowledge*. A region capable of integrating the developed conception into its own development becomes a *territory of rooting*. Thus, migration policy is integrated into the logic of the nootransition as a policy for the reproduction of human potential.

J.M. Keynes, reflecting on future economic possibilities, pointed to the prospect of liberating people from forced employment and transitioning to a different organization of life [Keynes, 1931]. In the theory of noonomy, this Keynesian perspective is examined not as a forecast of leisure, but as a question of liberating human energy for creative activity: the freed time becomes a "light reserve" for society, capable of transitioning from a mode of consumption to Knowledge, and then to culture and creative labor [Bodrunov, 2025a; Bodrunov, 2025c]. Migration policy in the context of NIS.2 must provide conditions under which this reserve takes on a social form and becomes a source of reproduction of human potential.

The synergetic tradition of I. Prigogine, I. Stengers, and H. Haken allows us to consider the nootransition as a nonlinear change of order, where accumulated fluctuations are capable of generating a new quality of the whole [Prigogine, Stengers, 1984; Haken, 1977]. The automatism of such a transition is excluded. For knowledge migration, this implies the existence of a bifurcation point: technologies, platforms, and algorithms can unlock the creative function or consolidate accelerated reproduction in a new form. The quality of creative participation becomes the parameter of order. Therefore, NIS.2 policy requires noocriteria that allow for the evaluation of the movement of people and functions based on whether it leads to the emergence of the noohuman as a creative human capable of overcoming the narrowness of economic design [Bodrunov, 2024].

The mode of appropriation of creative outputs requires special attention. When a mental object, design concept, or technological solution is completely transferred to an external node, the migration of knowledge ends with “ability extraction,” i.e., the environment that generated it retains the memory of the person’s preparation but loses the fruit of their creative act. A different situation arises with associative use and recognition of contribution, since the creative output remains embedded in the environment in which it originated and continues to nurture its development.

This is where the diffusion of ownership in the theory of noonomy is revealed. For S.D. Bodrunov, the diffusion of ownership, the socialization of society, and solidarism form one of the pillars of the “quadriga of noonomy” [Bodrunov, 2021]. Therefore, the creative output should be viewed as a “node of continuation” rather than a closed asset. It maintains a connection with the author, the collective application, and the environment in which the original ability arose.

A creative output rarely belongs solely to a single contributor; it is a confluence of the technological environment, the cultural code, and forms of collective cooperation. Late capitalism, as A.V. Buzgalin and A.I. Kolganov demonstrate, is capable of transforming creative abilities into a mobile resource for external appropriation [Buzgalin, Kolganov, 2019]. NIS.2 presupposes a mode of result consolidation where openness of application is combined with the return of the capacity for new creation to the environment that generated it.

Knowledge migration has its own hidden “arithmetic”. The same human conception can become a loss, a reversal, or a gain. It becomes a loss (*removal*) when the result is externally appropriated. It becomes a reversal (*circulation*) when the created object enters the general circulation of knowledge. It becomes a gain (*rooting*) when the generative environment receives the continuation of the capacity from which the result arose.

For Russia, as for any sovereign country, this means the need to align industrial, educational, digital, and cultural policies around the reproduction of human potential. Industrial orders must provide knowledge with a subject for action; education must cultivate the subject of conception; the digital environment must protect creation from dissolution in the external circuit of appropriation; and culture must maintain the noovalue purpose of the result. In such a combination, creative work gains institutional rooting, and knowledge migration ceases to be a loss of capacity and becomes a means of expanding society’s creative forces.

Conclusion

The third article in the trilogical series (see “Noonomy and Noosociety. Almanac of Scientific Works of the S.Y. Witte INID”, No. 4 in 2025, No. 1 in 2026) completes the transition from a *description of the external manifestations of labor migration* to *exploration of its internal political-economic content*. While the first article examined labor migration as an **indicator of the aromorphosis of “labor” category**, and the second revealed **digital employment as a form of dual migration** where labor function can shift ahead of the physical movement of the worker [Bodrunov, Dmitriev, 2025; Bodrunov, 2026], then this study shows the next layer of this movement. Spatial movements and functional shifts reveal the migration of knowledge, embodied in the human capacity for knowledge-intensive and creative labor.

2. Knowledge, acting as the primary substance of labor transformation (under the context of NIS.2, this is becoming increasingly unnecessary), enters into activity through conception and *mental object*, receives *objective form* in action, and returns as a *publicly useful result*. Creative work

is shown as the ultimate form of knowledge-intensive labor, where a person transcends the limits of reproductive performance and becomes the bearer of creative capacity. Therefore, the *criterion of labor* becomes the realization of a conception, when hidden knowledge takes the form of action, changes the environment of human participation, and returns to the person as a new store of understanding.

3. **Knowledge migration** changes the meaning of *territorial development*. A territory can retain its population and employment, but lose the ability to develop its own future if the complex stages of labor and the results of a conception are consolidated in an *external center of appropriation*. A different outcome arises where knowledge receives a *topos* of realization, prepared capacity is brought to action, and *knowledge-intensity of production is combined with the reproduction of human potential*.

4. The article identifies three modes of Knowledge migration: *removal*, *circulation*, and *rooting*. Removal means the loss of creative function through external appropriation of the result. Circulation occurs when the professional's movement returns new connections, experience, and modes of action to the environment that generated it. Rooting occurs where Knowledge is consolidated in labor, receives institutional protection, and becomes a reproducible force for human and territorial development. Therefore, knowledge migration has its own hidden arithmetic: *the same conception can result in loss, reversal, or gain*.

5. Migration policy in NIS.2 should be based on the **reproduction of human potential**. Its goal is not the administrative retention of professionals, but rather the creation of an environment where human mobility *enhances the "reproduction"* of Knowledge, labor, and creative work. Education, production, digital infrastructure, culture, and the protection of results must be linked and united around the rooting of creative function. With such institutional coherence, mobility ceases to be a drain on capacity and becomes a *reversal movement of human power*, and ultimately a form of expanded reproduction of human potential.

6. For Russia, these findings extend beyond theoretical generalization and into the realm of long-term development. New industrialization (*reindustrialization* based on the latest technological paradigm) acquires noocontent where knowledge-intensity of production is combined with the "cultivation" of the person as a *subject of creative labor*. **Industrial policy** divorced from the reproduction of the subject of creative labor creates a technological shell without a bearer of the conception; education without a field of application prepares people for "departure"; digitalization without protection of results accelerates the removal of functions; culture without a connection to labor risks remaining symbolic consumption. In their confluence, a territory of knowledge rooting is born, where NIS.2 is revealed as the movement of productive forces toward people.

7. **Labor migration** in the context of *nootransition* goes beyond the movement of workers following earnings. It reveals where Knowledge takes active form in labor, where labor ascends to creativity, and where socially shaped abilities are relegated to external appropriation.

The answer of NIS.2 lies in *transforming the very nature of mobility* so that human movement becomes the return of Knowledge to its generative environment, the rooting of human potential, and the transition from forced labor to labor as conscious participation in a shared future – where human creative activity will become the foundation of life.

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