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"Humanizing PropTech: Building Communities, Not Just Buildings" - A Philosophical Piece on Blending Technology, Urbanism, and the Social Fabric of Cities to Create Places where People Truly Feel They Belong

Anastasiia Livintseva

Miami, USA
Email: *livintsevaaa[at]gmail.com*

Abstract: ***In the context of the rapid diffusion of digital solutions into the real estate market (PropTech), a persistent contradiction emerges: tools conceived as drivers of operational efficiency often precipitate the dissolution of horizontal ties and the erosion of a sense of community in residential environments. This study develops and theoretically substantiates a conceptual framework for the humanization of PropTech, which shifts the focus from the exploitation of physical assets to the purposive construction of resident communities. The objective is to demonstrate that strategic, anthropocentric implementations can simultaneously enhance the quality of everyday life and generate measurable economic returns. The methodological basis includes a systematic literature review on urban theories and the PropTech market, as well as an in-depth case study analysis grounded in the author's methodology of integrated development (PPP system) and the digital platform Community as a Service (CaaS). As an applied demonstration of this logic, the study integrates preliminary insights from the author's b. with platform, a working prototype that operationalizes the Community-as-a-Service (CaaS) business model through AI-driven behavioral analysis and resident engagement mechanisms. The results indicate that CaaS models that activate social interactions are consistently associated with a 10-15% increase in tenant retention, an appreciation of asset value, and the formation of new revenue streams for property management companies. The conclusion presented is that the proposed model serves as a viable scaffold for aligning technological innovation with social objectives, transforming buildings into spaces of genuine belonging. The information reflected in the study will be of interest to developers, investors, property managers, and urban planners focused on designing sustainable, socially oriented projects.***

Keywords: PropTech, humanization of technology, urban development, community building, placemaking, b.with platform, Community as a Service (CaaS), tenant retention, social capital, New Urbanism, digital transformation of real estate.

1. Introduction

The contemporary evolution of cities unfolds at the intersection of two powerful and partly conflicting trends: rapid technologization that optimizes everyday urban processes, and a growing emphasis on human connections as the foundation of the resilience and viability of the urban fabric. This tension is most evident in real estate, where the wave of solutions encompassed by the notion of PropTech is radically redefining the practices of design, construction, operation, and capitalization of assets. By estimates, the aggregate PropTech market volume in 2024 exceeded 36.5 billion USD, and by 2030–2032 it is expected to expand to 88–104 billion at a compound annual growth rate of 11.9–18.1% [1]- a trajectory indicative of a structural transformation of the industry.

Against this backdrop, a fundamental dilemma arises: does total automation lead to the erosion of the humanistic dimension of the residential environment? Classical urbanist schools, from the Chicago School to the analyses of Jane Jacobs, consistently asserted that the city is above all a network of social exchange rather than a sum of buildings [3]. Technologies aimed exclusively at operational efficiency- from automated payments and digital requests via chatbots to depersonalized access control systems - minimize interpersonal contacts and form vertical suburbs in which residents remain isolated.

The relevance of the study is driven by the need to bridge this divide. The scientific problem lies in the absence of integrated frameworks capable of systematically aligning the principles of social urbanism - including placemaking and new urbanism [5]- with the applied PropTech toolkit for the purposeful formation of communities [7]. Existing works either reduce technologies to a managerial function or consider social effects outside their technoeconomic context.

The purpose of the study is to develop and theoretically substantiate a conceptual model of the humanization of PropTech, demonstrating how technologies can be strategically deployed not for administrative management of assets but for cultivating active and resilient resident communities.

The author's hypothesis is that the integration of the Community as a Service (CaaS) model, supported by a holistic development methodology- for example, the PPP system (Product–Positioning–Promotion)- can transform PropTech from a potentially isolating factor into an effective catalyst for the formation of social capital. The resulting social capital, in turn, is converted into measurable economic

effects through increased tenant loyalty, reduced churn, and growth in the aggregate capitalization of the asset.

The scientific novelty lies in the conceptualization of CaaS as a key mechanism for humanizing PropTech, which shifts technological solutions from the realm of operational optimization tools into the category of catalysts for constructing the social fabric and augmenting the economic value of real estate. As part of this research trajectory, the author is developing the b.with platform , a working prototype that represents an applied implementation of the Community-as-a-Service (CaaS) model. b.with platform serves as a practical instrument for testing how AI-supported decision-making can structure, scale, and personalize community development processes within residential environments.

2. Materials and methods

This study relies on a mixed design integrating qualitative and quantitative procedures to enhance analytical depth and verifiability of results. The framework of the work consists of a systematic literature review and an in-depth qualitative case study analysis.

The methodological basis of the study includes:

Systematic literature review. A critical analysis of academic and industry publications was carried out to construct a theoretical framework and contextualize the research problem. The review is focused on three key fields: theories of social urbanism and placemaking; market trends and technological drivers in the PropTech sector; and the economic and social effects of engaging local communities in development processes.

Qualitative case study analysis. As empirical support, a detailed examination of two interrelated authorial developments is applied: the methodological system of integrated development PPP (Product – Positioning – Promotion) and the digital platform Community as a Service (CaaS) using the b.with platform - b.with platform startup as an example. This design makes it possible to move from theoretical assumptions to the consideration of specific mechanisms, instruments, and measurable effects of their implementation in real projects. To operationalize this analytical lens, the study also incorporates materials derived from the b.with platform . Developed by the author, b.with platform functions as a prototypical implementation of the Community-as-a-Service (CaaS) model, enabling the testing of its functional architecture through AI-supported community behavior modeling.

The source base of the study is classified into three main types:

Academic publications. Peer-reviewed articles from journals indexed in Scopus and Web of Science, and specialized monographs on the theory of urban development, urban sociology, the critical analysis of smart cities, and the influence of ICT on social structures. These materials form the theoretical foundation of the work.

Industry analytical reports. Data and forecasts of leading research and consulting agencies (including Mordor Intelligence, Fortune Business Insights, Spherical Insights) specializing in real estate and technology markets. These sources provide up-to-date quantitative estimates of the size, dynamics, segmentation, and key drivers of the PropTech market.

Primary author materials. Internal documentation describing the PPP-System methodology and the business model of the b.with platform offers a prototype implementation of the Community-as-a-Service (CaaS) model , including the value proposition, functional components, and projected economic indicators; they serve as a unique empirical basis for the case analysis. The empirical base is further expanded by preliminary analytical outputs from the b.with platform , the author's applied prototype designed to embody the Community-as-a-Service (CaaS) model and examine its operational mechanisms through machine-learning-based segmentation and resident engagement pathways.

3. Results and Discussion

Contemporary development practice is undergoing a qualitative shift: the priority is moving from the erection of material structures to the creation of intangible assets, with the community becoming central. This transition is driven not only by a humanitarian perspective but also by strict economic rationality. The tenets of New Urbanism- pedestrian connectivity, multifunctionality of the environment, and the deliberate shaping of public spaces that provoke unplanned social contacts [6]- have moved beyond theoretical schemas, turning into practical mechanisms for increasing project capitalization.

Accumulated empirical evidence demonstrates a stable link between the degree of community engagement and the economic outcome of development. Early and substantive dialogue with local residents strengthens trust, increases the alignment of design decisions with real demand, and, as a result, reduces the likelihood of public resistance and delays in permitting procedures [16]. Moreover, initiatives unfolding in co-production with the community show better dynamics of financial indicators over the long horizon. Thus, properties in pedestrian-oriented locations with saturated public spaces (parks, squares, improved streets) are accompanied by an average increase in land value of 17%, and proximity to public transport nodes can raise housing value up to 150% [18].

Thus, community formation is not a secondary social option, but a system-forming component of risk management and value creation. Establishing stable relationships with current and potential residents transforms the transaction with space: instead of a simple sale or lease of square meters, value of a higher order is offered- the experience of belonging and participation. This seemingly intangible resource is converted into quite measurable effects. Resident satisfaction, 67% determined by the presence of a sense of community [19], is a key predictor of lease renewal [17]. Given that the average turnover costs for a single tenant (marketing, repairs, downtime and lost income) can exceed USD 4000, and retaining a resident yields approximately USD 900 per year

in addition to rent, a loyalty-oriented strategy proves economically preferable to the constant acquisition of new customers [6, 14]. Consequently, investment in community building is direct investment in cash flow stability and the reduction of operating expenses.

Within this logic, PropTech technologies act as a catalyst that makes it possible to scale previously local and labor-intensive community management practices. Data on the global market indicate the presence of both technological and economic prerequisites for this expansion. As shown in Fig. 1, the market demonstrates steady double-digit growth rates, indicating a strong inflow of investment and high demand for digital solutions in real estate.

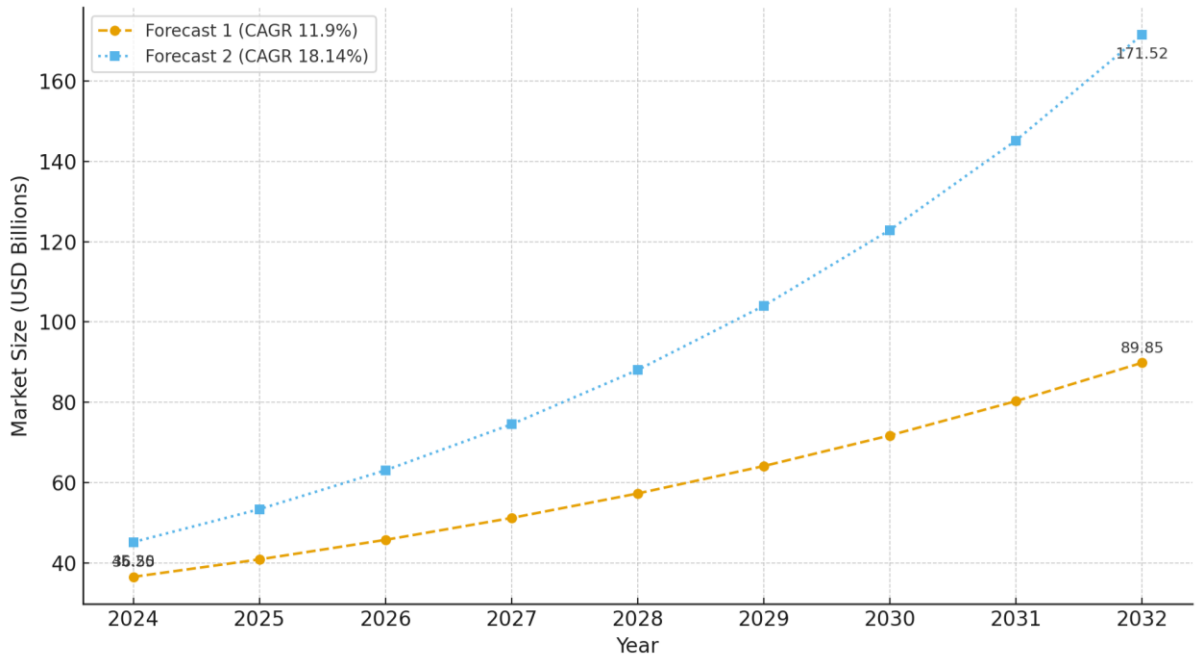

Figure 1: Forecast of global PropTech market growth, 2024–2032 (USD billions) (compiled by the author based on [1, 2, 4]).

The key market contours indicate that the industry is mature enough for the deployment of comprehensive, socially oriented solutions. The largest weight is formed by software platforms (67,6%) and cloud services (78,0%), which records a shift from a set of disparate utilities to coherent ecosystems. The main user group is property owners and asset managers (37,8%), for whom tools that enhance operational efficiency and asset capitalization are critical [2].

At the same time, the prevailing technological narrative in PropTech has long focused on automation, control, and cost reduction [15]. This brings the industry to a point of conceptual bifurcation. Technologies are not neutral: architectural decisions and functional logic set the format of social interactions. A PropTech stack aimed exclusively at efficiency can inadvertently amplify social fragmentation. At the same time, the very same technological capabilities- mobile applications, data analytics, AI systems- can be purposefully reinterpreted for the opposite task: not the displacement of human communication but its facilitation and enrichment. Humanization of PropTech is not a rejection of technology but a deliberate strategy to retune its potential. Market expansion implies an inflow of capital that can be directed either toward deepening fragmentation or toward the large-scale formation of communities.

A practical implementation of this logic is the model Community as a Service (CaaS), which presupposes providing residents and managers with digital infrastructure and a set of tools for initiating, maintaining, and developing social ties within a residential complex.

As a concrete example, consider the b.with platform platform offers a prototype implementation of the Community-as-a-Service (CaaS) model platform, a cloud-based SaaS solution aimed at a radical transformation of property management practices. All functionality is assembled in a single mobile application through which residents can: organize and attend events- from joint yoga in common areas to film clubs and lecture series; exchange services- find neighbors for dog walking, childcare, or help with minor repairs; interact with local businesses- receive exclusive offers from nearby cafes, fitness centers, and service companies integrated into the platform; and also communicate effectively- both in thematic chats among themselves and with the management company on everyday issues.

The value proposition of the CaaS model is multicomponent. For residents, it addresses basic needs for belonging, safety, and social capital [9]. For the management company, the platform serves as a tool for achieving key business outcomes: first, it directly increases tenant retention, which, according to preliminary estimates, may rise by 10–15% during the first year of active implementation; second, it opens the possibility to monetize previously unused or loss-making assets (common spaces, recreational areas), transforming them from cost centers into profit sources through paid events, partnership programs with local enterprises, and the provision of additional services, for which the platform and the

management company receive a commission. This mechanism fully corresponds to the strengthening industry trend toward amenities monetization and the growth of their profitability.

The implementation of technological solutions at the level of a CaaS platform does not yield a sustainable effect outside a strategic context. Their effectiveness increases exponentially when they are initially embedded in the holistic logic of a development project. One such framing approach is the proprietary PPP-System (Product–Positioning–Promotion).

This system addresses a fundamental industry flaw- the fragmentation of work contours, wherein marketing analytics, architectural design, branding, and sales operate as non-communicating silos, generating misalignment, errors, and the loss of created value. PPP eliminates this fragmentation by uniting the listed domains into a single iterative logic (see Fig. 2).

Product: Based on in-depth research of target segments and the market environment, a concept of the real estate asset is formed. It is clearly determined what exactly is being created and for which audience, ensuring that product characteristics correspond to the genuine demands of the market.

Positioning: A unique value proposition and a brand platform for the project are developed. Identity, emotional connection with the audience, and key differentiators relative to the competitive environment are defined.

Promotion: A communication strategy is determined and- crucially- community engagement practices. At this stage, the CaaS platform serves as a natural and necessary instrument for implementing the community idea embedded in the brand, ensuring its operationalization in interaction practice.

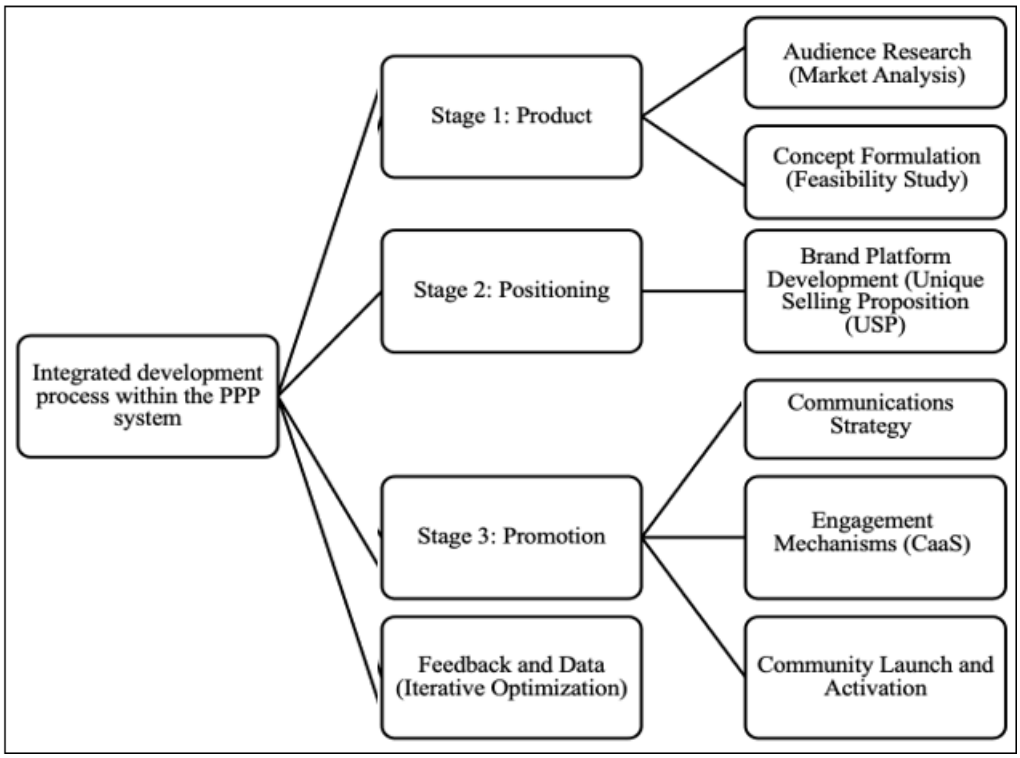

Figure 2: Integrated development process within the PPP system (compiled by the author based on [8, 10, 15]).

The effectiveness of the integrated approach is empirically confirmed. Cases implemented within the PPP logic consistently demonstrate a 30–40% reduction in the conceptual development horizon due to the elimination of cross-functional gaps. Additionally, precise market focus and the early embedment of community-building instruments provide a 10–15% increase in margin through capitalization of brand premium and finer tuning to the expectations of target audiences.

At the same time, socially oriented PropTech, despite the obvious enhancement of value, is associated with substantial barriers and risks that require careful critical assessment. It is expedient to differentiate these risks into practical (technological and organizational) and deeper socio-ethical ones.

At the practical level, the key constraints are:

1) Technological integration: high costs of coupling new platforms with legacy property management systems that dominate among many operators [10, 11].
2) Financial barriers: significant upfront capital intensity and the need to compellingly demonstrate ROI to a conservatively oriented management tier.
3) Data security: processing arrays of residents' personal information generates elevated cyber risks and requires strict compliance with legal data protection regimes [8].
4) Resistance to change: low readiness of both employees of management organizations and the residents themselves to adopt digital tools and to reassemble entrenched behavioral models.

Nevertheless, the most significant threats lie in the socio-ethical plane:

1) Technodeterminism and the deepening of inequality: excessive reliance on technology as a universal means of solving urban problems, inherent in a number of smart city approaches, is fraught with the displacement of real social challenges from the agenda. Design solutions often target an ideal user- digitally competent and financially secure- which ultimately entrenches and amplifies stratification in access to the benefits of the urban environment [12].
2) Digital divide and exclusionary practices: platforms built exclusively around online interactions de facto marginalize large groups- older adults, citizens with limited digital literacy, or without access to modern devices. This leads to the formation of a two-tier community in which full participation is available only to a portion of the population.
3) Commodification of community: with incorrect configuration, CaaS models substitute genuine relations of belonging with a system of transactions. Shifting the emphasis from the value of belonging to the monetization of every contact undermines the foundation of collective life, reducing the community to yet another market product [13].

Effective navigation of these risks requires the development of well-considered mitigation strategies (see Table 1).

Table 1: Key risks of implementing socially oriented PropTech solutions and strategies for their mitigation (compiled by the author based on [12, 13]).

Risk	Description	Mitigation strategies
Technological integration	The complexity of integrating new platforms with the legacy systems of management companies.	Selecting platforms with open APIs; phased rollout; partnerships with vendors for customization.
Digital divide	Exclusion of residents with low digital literacy or without access to devices.	Hybrid models (offline + online activities); provision of shared access terminals; resident training.
Data privacy	Unlawful use of residents' personal data.	Transparent privacy policy; compliance with GDPR/local laws; data anonymization for analytics.
Techno-determinism	Excessive belief in technology as a solution to social problems, ignoring the human factor.	Application of human-centered design (HCD); the role of the community manager as a moderator; regular feedback collection.
Commodification of community	Transformation of social ties into purely commercial transactions.	Balance between paid and free services; support for residents' noncommercial initiatives; focus on the value of belonging rather than sales alone.

The conducted analysis allows us to assert that the humanization of PropTech is not an automatic consequence of technological progress; it is the result of a deliberate, strategically calibrated trajectory of development. In an era when the same digital tools can both intensify fragmentation and strengthen a sense of belonging, the real estate market faces the task of designing human-centered digital ecosystems that prioritize users' needs for community and mutual support.

4. Conclusion

Summing up the study, it should be noted that the stated objective has been achieved: a conceptual model has been proposed and substantiated that demonstrates how technologies can function not only as means of asset operation and administration, but also as an infrastructure for community formation. Its key components include:

A redefinition of the development paradigm that recognizes the community as the primary intangible asset creating economic value.

A strategic reconfiguration of PropTech from a focus on operational efficiency to the purposeful design and support of social interactions.

The implementation of the Community as a Service (CaaS) model as a practical mechanism for resident activation and the generation of new value propositions.

The integration of CaaS into a holistic development methodology (for example, the PPP system) that ensures coherence among product decisions, brand positioning, and engagement instruments.

The hypothesis of a positive feedback loop is confirmed: investments in community development increase residents' satisfaction and loyalty, which reduces turnover and increases operating profit; the latter, in turn, can be directed toward further strengthening of the social infrastructure.

The practical significance of the study consists in offering a clear and measurable route for developers, investors, and management companies. The use of CaaS transforms business processes from a logic of cost control to the creation of added value and contributes to the formation of more resilient and competitive assets. For residents, this translates into an improved quality of life and the emergence of an environment they can proudly call home.

In practical terms, the author's b.with platform offers a prototype implementation of the Community-as-a-Service (CaaS) model, demonstrating how technological instrumentation can operationalize the human-centered PropTech framework developed in the study.

Prospects for further research are associated with longitudinal quantitative assessments of the long-term impact of CaaS platforms on indicators of social capital, residents' mental health, and the dynamics of real estate values. Of additional interest is a comparative analysis of the results of implementing such models in different sociocultural and economic contexts in order to identify success factors and parameters of adaptability.

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