

PREDICTIVE SOFTWARE ENGINEERING: EMPOWERING BUSINESS SUCCESS WITH TAILORED SOFTWARE SOLUTIONS

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ABSTRACT

This paper explores the seven core principles of the Predictive Software Engineering (PSE) framework. These principles are designed to empower custom software development companies to deliver transparent and reliable solutions, all while adhering to predetermined budgets. The paper delves into each of the seven principles: Meaningful Customer Care, Transparent End-to-End Control, Proven Productivity, Efficient Distributed Teams, Disciplined Agile Delivery Process, Measurable Quality Management and Technical Debt Reduction, and Sound Human Development.

KEYWORDS

Agile, Disciplined Agile Delivery, Distributed Team, Predictive Software Engineering, Measurable Quality Management and Technical Debt Reduction System (MQM&TDR).

1. INTRODUCTION

Conventional software development frequently grapples with unpredictability and subjective decision-making. Predictive Software Engineering (PSE) tackles this challenge by introducing seven principles, honed over 29 years of experience. These principles steer development teams towards a standardized, controlled, and transparent approach, revolutionizing software creation into a precise and predictable engineering pursuit.

2. MEANINGFUL CUSTOMER CARE

Customer-centricity remains the cornerstone of success for any business, regardless of its market orientation (B2B, B2C, etc.). Customer satisfaction, brand loyalty, and ultimately, customer acquisition volume collectively define an organization's success. When an organization's offerings fail to resonate with target audiences and translate into commercial success, it signifies that it has not yet maximized its potential.

Therefore, to objectively assess progress towards organizational goals, measuring customer satisfaction and feedback through key performance indicators (KPIs) becomes paramount. Should these metrics reveal an unfavourable trajectory, the focus should promptly shift towards transforming dissatisfied customers into ardent brand advocates. This objective can be achieved through the implementation of eight key strategies:

1. Streamline the onboarding process. This includes providing clear guidance, resources, and support to help customers quickly and efficiently integrate your products or services into their operations.

2. Offer a dedicated customer portal for easy access and engagement. A well-designed portal can serve as a centralized hub for customers to access resources, submit inquiries, track orders, and interact with support representatives.
3. Establish a clear governance model for efficient issue resolution. By defining roles, responsibilities, and escalation procedures, you can streamline the resolution process and minimize delays in addressing customer issues.
4. Define a transparent escalation path for handling complex concerns. Having a clear path for escalating issues to higher levels of support or management helps ensure that critical issues receive the attention and resources they require.
5. Implement early problem discovery methods to proactively address issues. By monitoring customer feedback, product usage data, and support interactions, you can identify emerging issues and take corrective action before they impact a larger number of customers.
6. Conduct comprehensive analysis of customer complaints to identify root causes. By analyzing trends and patterns in customer feedback and support interactions, you can uncover underlying issues and implement systemic changes to address them.
7. Proactively manage customer satisfaction through consistent monitoring and engagement. Regularly soliciting feedback from customers and taking proactive steps to address their needs and concerns helps build trust and loyalty over time.
8. Set realistic expectations to avoid disappointment and build trust. By being transparent about product capabilities, delivery timelines, and support offerings, you can manage customer expectations and ensure a positive experience throughout the customer lifecycle.

3. TRANSPARENT END-TO-END CONTROL

Transparency, characterized by openness, trust, and cooperation, is a valuable asset in today's business landscape. Organizations that prioritize transparency tend to be perceived as less risky and more reliable by stakeholders, particularly clients. This fosters a collaborative environment essential for long-term success. Transparency serves as a cornerstone for building trust and credibility in the eyes of stakeholders. When organizations operate with transparency, they demonstrate a commitment to honesty and integrity, which are essential for fostering strong relationships with clients, partners, and employees. By openly communicating information and decisions, organizations can mitigate misunderstandings and conflicts, leading to smoother operations and more successful outcomes.

Furthermore, transparency enables organizations to adapt and respond effectively to changing circumstances. By providing stakeholders with clear insights into processes, performance, and decision-making, organizations can foster a culture of accountability and continuous improvement. This empowers employees to take ownership of their work and collaborate more effectively towards achieving common goals. This paper explores the multifaceted approach required to cultivate transparency within organizations, both internally and externally.

Overall, transparency is a key driver of success in today's business environment. By prioritizing transparency and adopting a multifaceted approach to cultivate it both internally and externally, organizations can build stronger relationships, foster collaboration, and position themselves for long-term success. This paper explores the multifaceted approach required to cultivate transparency within organizations, both internally and externally.

External Transparency:

- **Governance and Project Meetings:** Regularly convening governance and project status meetings with external stakeholders serves as a key mechanism for maintaining information dissemination and fostering trust. These forums provide a platform for open communication, allowing clients to actively engage with the organization and address any concerns promptly.
- **Agile Methodologies:** The implementation of Agile methodologies plays a crucial role in promoting real-time visibility into project progress. This iterative approach enables stakeholders to remain informed and engaged throughout the development process, fostering adaptability and collaborative problem-solving.
- **Collaboration Tools and Project Portals:** The effective utilization of technology-driven solutions such as teamwork collaboration tools and project portals empowers clients with real-time access to project details. This fosters a sense of ownership and transparency, enhancing stakeholder confidence in the organization's commitment to open communication.
- **Process Audits and Proactive Monitoring:** Implementing regular process audits allows organizations to proactively identify and address potential roadblocks. Additionally, shifting from reactive monitoring to a proactive approach ensures issues are identified and addressed before they escalate, demonstrating a commitment to continuous improvement and mitigating potential risks for stakeholders.
- **On-Site Visits:** Scheduling on-site visits at key project milestones serves as a powerful tool for strengthening open communication with clients. These visits demonstrate the organization's commitment to transparency and collaboration, fostering trust and building stronger relationships with external stakeholders.

Internal Transparency:

- **Leadership Engagement:** Fostering a culture of transparency necessitates active and consistent engagement from the organization's leadership. Conducting regular meetings with C-level executives facilitates clear communication and alignment across all organizational levels, ensuring all stakeholders are informed and aligned with company goals.
- **Departmental Check-ins:** Establishing regular departmental check-in meetings with directors fosters information flow and collaboration across various divisions. This practice promotes transparency by breaking down silos and ensuring all departments are working towards common objectives.
- **Project Management Engagement:** Regular check-ins with project managers serve a two-fold purpose. Firstly, they ensure that project progress is closely monitored, and potential issues are addressed swiftly. Secondly, these interactions foster a transparent environment where project managers feel comfortable voicing concerns and seeking guidance from leadership.
- **Talent Management Integration:** Including the talent management team in fostering collaborative work environments underlines the organization's commitment to internal transparency. This collaborative approach empowers employees to voice concerns and actively participate in decision-making processes, promoting a sense of ownership and trust within the organization.
- **Team Building and Company Events:** Investing in team-building events and company gatherings strengthens internal communication and interpersonal relationships within the organization. These events provide informal spaces for information exchange and collaboration, fostering a sense of trust and transparency among employees.

Cultivating a culture of transparency requires a comprehensive and multifaceted approach. By implementing the strategies outlined above, both internally and externally, organizations can establish themselves as reliable and trustworthy partners. This commitment to openness fosters trust with stakeholders, facilitates collaboration, and ultimately positions the organization for long-term success in today's competitive business environment.

4. PROVEN PRODUCTIVITY

Evaluating software engineer productivity remains a persistent challenge across diverse organizations. This paper explores two prominent tools employed to gauge productivity and velocity during development:

- Measurable Quality Management and Technical Debt Reduction System (MQM&TDR) (addressed in a separate section)
- Software Development Efficiency Key Performance Indicator (KPI)

The Software Development Efficiency KPI encompasses ten sub-KPIs designed to assess various development aspects:

- **Static code analysis (project & individual):** Evaluates overall and individual developer code quality through automated tools.
- **Planned vs. actual work:** Compares planned workload with actual completion, providing insights into project planning efficiency.
- **Bugs per line of code (LOC):** Measures defect frequency relative to code volume, indicating code quality and potential rework effort.
- **Opened bugs per feature:** Assesses defect prevalence within individual features, aiding in identifying areas for improvement.
- **Templates/algorithms/standard libraries missed:** Evaluates adherence to established practices and best practices utilization.
- **Missed exception/error handling:** Assesses implementation of robust error handling mechanisms, indicating code robustness and user experience.
- **Security problems:** Identifies potential security vulnerabilities within the code, highlighting critical areas requiring immediate attention.

To ensure effectiveness and integrity of the Software Development Efficiency KPI, several key guidelines are recommended:

- **Double code review:** Two developers independently review the same code for accuracy and comprehensiveness.
- **Documented code review:** Meticulously document the entire code review process for auditability and future reference.
- **Management review and approval:** Team managers or leaders should comprehensively review and approve the KPI results to ensure validity and alignment with organizational goals.
- **Anti-cheating tools:** Utilize tools that mitigate manipulation and simplify the review process.
- **Code review volume limitation:** Review smaller code segments (ideally less than 500 lines) to enhance focus and thoroughness during assessment.

The Software Development Efficiency KPI goes beyond traditional metrics to provide a holistic view of development performance. By analyzing these sub-KPIs collectively, organizations gain insights into various aspects of their software development process, enabling them to identify strengths, weaknesses, and areas for improvement.

For example, by tracking static code analysis metrics, organizations can assess the overall quality of their codebase and identify opportunities for refactoring or optimization. Monitoring planned vs. actual work allows organizations to evaluate the effectiveness of their project planning and resource allocation processes, enabling them to make adjustments as needed to improve efficiency.

Similarly, tracking metrics such as bugs per line of code and opened bugs per feature provides valuable insights into the quality of the software being developed and the effectiveness of the testing and quality assurance processes. By identifying trends in these metrics over time, organizations can implement targeted interventions to reduce defects and improve overall software quality.

Additionally, metrics related to missed templates/algorithms/standard libraries and missed exception/error handling highlight areas where developers may need additional training or support to adhere to best practices and industry standards. By addressing these gaps, organizations can improve the reliability, security, and maintainability of their software products.

Overall, the Software Development Efficiency KPI provides organizations with a comprehensive framework for assessing and improving their software development processes. By leveraging these metrics, organizations can drive continuous improvement, deliver higher-quality software products, and achieve greater success in their software development initiatives.

5. EFFICIENT DISTRIBUTED TEAMS

The dissolution of geographical constraints has enabled organizations to embrace distributed teams, fostering the creation of a geographically diverse workforce. This model offers several advantages, including:

- **Time Effectiveness:** Distributed teams, spanning various time zones, ensure continuous coverage. By strategically placing development centers, organizations can guarantee at least one team is always operational, particularly valuable for entities requiring 24/7 support.
- **Cost Savings:** Hiring from diverse locations allows organizations to potentially reduce costs associated with salaries, rentals, and operating fees.
- **Talent Pool Diversification:** Distributed teams grant access to a virtually limitless pool of highly skilled talent, broadening the candidate pool beyond geographical limitations.

However, physical distance can introduce challenges such as communication issues and decreased efficiency. To ensure optimal performance within distributed teams, adhering to specific guidelines is crucial:

- **Task Design:** Tasks should be meticulously designed to facilitate collaboration, considering factors such as time zone differences, industry regulations, and individual workloads.
- **Role Clarity:** Roles and responsibilities of each team member should be clearly defined and communicated to avoid confusion and overlap.

- **Effective Communication:** Utilizing established and well-defined communication strategies, such as closed-loop communication, is paramount.
- **Loose Coupling:** Tasks should be loosely coupled, minimizing dependency on individual members' progress, and fostering overall team agility.
- **Mutual Performance Monitoring:** While maintaining individual responsibilities, team members can mutually monitor performance, fostering a sense of accountability and collaboration [1].

Beyond these considerations, social aspects also require attention. Team members from diverse backgrounds may exhibit differing communication styles and cultural norms. There are measures for addressing this:

- **Effective Leadership:** Providing strong and effective leadership is critical. Leaders should be adept at motivating team members, fostering cohesion, and offering necessary coaching.
- **Shared Experiences:** Cultivating common ground among team members is essential. When feasible, conducting shared training sessions in a centralized location can further enhance team unity.

Moreover, technology plays a pivotal role in enhancing the efficiency of distributed teams. Utilizing collaboration tools, project management software, and virtual communication platforms can streamline workflows and foster real-time collaboration, irrespective of geographical barriers. These tools enable seamless sharing of information, facilitate remote meetings, and promote transparency within the team.

By recognizing the benefits and adhering to these best practices, organizations can effectively leverage distributed teams to achieve their business objectives and harness the advantages of a geographically diverse workforce.

6. DISCIPLINED AGILE DELIVERY PROCESS

While Agile methodologies remain the predominant framework for software development, a vast array of adaptations exist. This paper posits that Disciplined Agile Delivery (DAD) emerges as a particularly advantageous variant for service organizations.

Unlike traditional Agile approaches, DAD employs a distinct lifecycle structured into three primary phases: inception, construction, and transition [2].

Moreover, DAD incorporates elements from various Agile methodologies, such as Scrum, Kanban, and Extreme Programming (XP), providing teams with a flexible framework that can be tailored to suit different project contexts. This adaptability allows organizations to leverage the strengths of multiple Agile practices while mitigating their individual limitations.

Furthermore, DAD emphasizes the importance of enterprise-level considerations, such as governance, architecture, and reuse. By addressing these factors upfront, DAD enables organizations to scale Agile practices effectively across large and complex projects, ensuring alignment with broader business objectives.

Additionally, DAD recognizes the diverse roles and responsibilities within Agile teams, accommodating the needs of not only developers but also testers, architects, analysts, and other

stakeholders. This holistic approach fosters collaboration and ensures that all team members are actively engaged in delivering value to the customer.

Overall, by embracing the principles of Disciplined Agile Delivery, service organizations can enhance their agility, improve project outcomes, and ultimately deliver greater value to their customers.

A. Inception Phase:

- **Vision Definition:** The project vision is meticulously defined, establishing a clear roadmap for development efforts.
- **Stakeholder Alignment:** Collaboration with stakeholders is crucial, ensuring project vision aligns with their expectations and objectives.
- **Initial Planning:** This phase encompasses crafting the initial project plan, outlining the preliminary technical strategy, and identifying core requirements.
- **Team Formation:** The initial project team is assembled, bringing together the necessary expertise and resources.

B. Construction Phase:

- **Adapting to Change:** Continuous adaptation to evolving stakeholder needs remains a central focus during this phase.
- **Iterative Development:** The focus shifts towards delivering a potentially usable solution through iterative development cycles.
- **Deployment Readiness:** Efforts are directed towards achieving a deployable release state.
- **Quality Assurance:** Maintaining or enhancing existing quality levels remains paramount throughout the construction phase.
- **Risk Mitigation:** Addressing the most significant project risks becomes a key priority during this phase.

C. Transition Phase:

- **Production Readiness:** This phase ensures the developed solution is fully prepared for deployment into the production environment.
- **Stakeholder Preparation:** Equipping stakeholders with the necessary knowledge and resources to effectively receive the solution is crucial.
- **Deployment Execution:** The final stage involves the successful deployment of the solution into production, marking the culmination of the project lifecycle.

By embracing the distinct phases and tailored approach of DAD, service organizations can leverage the agility and adaptability inherent in Agile methodologies while addressing the specific needs and challenges they encounter within their domain.

7. MEASURABLE QUALITY MANAGEMENT AND TECHNICAL DEBT REDUCTION

The Measurable Quality Management and Technical Debt Reduction System (MQM&TDR) emerges as a comprehensive framework designed to assess various facets of software development projects. Its core functionalities encompass:

- **Technical Debt Measurement:** MQM&TDR facilitates the quantification of technical debt, enabling proactive management and mitigation strategies to prevent accumulation and potential future issues.
- **Software Quality Assessment:** The system provides an unbiased evaluation of software quality across various dimensions, encompassing source code quality, usability, security, performance, and more.
- **Business Efficiency Determination:** MQM&TDR aids in determining the product's business efficiency, offering valuable insights for stakeholders.

The benefits of MQM&TDR extend beyond technical teams, offering advantages to various stakeholders:

- **Testers and Developers:** Gain objective feedback on their work, enabling continuous improvement and quality enhancement.
- **Managers:** Receive insights into the project's overall capabilities, facilitating informed decision-making.
- **Users:** Benefit from a reliable and well-performing final product.
- **Investors:** Utilize MQM&TDR's findings to assess investment risks and determine fair market value with greater accuracy.

The system's evaluation encompasses a comprehensive spectrum of software components:

1. Source Code Quality
2. Usability
3. Security
4. Performance
5. Business Logic
6. Solution Architecture
7. Data Quality
8. Open-Source Code Use

By leveraging MQM&TDR, various stakeholders can benefit from the following:

- **Proactive Technical Debt Management:** MQM&TDR enables the identification and mitigation of technical debt before it becomes a significant burden.
- **Reduced Costs:** Redevelopment and support costs can be significantly minimized through proactive quality management.
- **Informed Progress Evaluation:** MQM&TDR facilitates a data-driven approach to progress evaluation, fostering informed decision-making.
- **Predicted Business Efficiency:** The system provides insights into the product's anticipated business efficiency, allowing for strategic planning.
- **Comprehensive Quality Analysis:** MQM&TDR offers a holistic assessment of software quality, encompassing various critical aspects.
- **Detailed Feature Analysis:** The system provides in-depth analysis of key product features, aiding in refinement and optimization.
- **Compliance Verification:** MQM&TDR helps ensure adherence to relevant standards and regulations.
- **Actionable Improvement Recommendations:** The system offers specific recommendations for improvement, guiding ongoing development efforts.

Implementing the Measurable Quality Management and Technical Debt Reduction System (MQM&TDR) involves several key steps to ensure its effective integration into software development processes:

- **Assessment and Planning:** Begin by conducting an assessment of the current software development practices and identifying areas where MQM&TDR can add value. Develop a plan outlining the implementation strategy, including timelines, resources required, and key stakeholders involved.
- **Tool Selection:** Choose the appropriate tools and technologies needed to support the implementation of MQM&TDR. This may include software for code analysis, quality management, technical debt tracking, and reporting.
- **Training and Education:** Provide training and education to team members on the principles and practices of MQM&TDR. Ensure that everyone involved understands the importance of quality management and technical debt reduction in the software development lifecycle.
- **Integration with Existing Processes:** Integrate MQM&TDR seamlessly into existing software development processes. This may involve modifying workflows, updating documentation, and establishing clear communication channels for reporting and feedback.
- **Data Collection and Analysis:** Implement mechanisms for collecting data related to software quality, technical debt, and business efficiency. Use this data to perform regular analysis and identify areas for improvement.
- **Continuous Improvement:** Foster a culture of continuous improvement by regularly reviewing and refining the implementation of MQM&TDR. Encourage feedback from team members and stakeholders and use it to make iterative enhancements to the process.
- **Monitoring and Reporting:** Establish metrics and Key Performance Indicators (KPIs) to monitor the effectiveness of MQM&TDR. Generate regular reports to track progress, identify trends, and communicate outcomes to stakeholders.
- **Adaptation to Change:** Remain flexible and adaptable in the implementation of MQM&TDR, especially in response to changes in project requirements, technology advancements, or organizational priorities. Continuously evaluate and adjust the approach to ensure alignment with evolving needs.

By following these steps and emphasizing collaboration, communication, and commitment to quality, organizations can successfully implement MQM&TDR and realize its benefits in improving software development processes and outcomes. Given its multifaceted functionalities and demonstrably positive impacts, MQM&TDR presents a compelling approach for enhancing software development projects across diverse organizations.

8. SOUND HUMAN DEVELOPMENT

While the language of human resources often frames individuals as mere resources, a more nuanced perspective recognizes employees as autonomous agents. These agents possess the capacity for independent decision-making, skill development, and goal setting. By prioritizing human development, organizations can cultivate not only a more skilled workforce but also a more fulfilled and loyal employee base [3].

This paper explores several key strategies for promoting human development within organizations:

A. Benefits: Expanding beyond standard benefits (e.g., medical insurance, compensation, office amenities) to incorporate training and certification programs alongside language learning opportunities (e.g., English courses) demonstrates a commitment to employee development.

B. Mentorship Programs: Implementing internship and mentorship programs offers numerous benefits. Interns gain invaluable practical experience working on real-world projects, transcending purely theoretical knowledge. This exposure extends beyond technical skills in programming and testing, encompassing communication and process understanding. Moreover, successful mentorship programs can often lead to retention, with interns transitioning into permanent roles after the program concludes, fostering a sense of team continuity and internal knowledge transfer.

C. Performance Review and Career Growth: Establishing individual development plans (IDPs) for each employee is crucial. Through collaborative sessions involving the employee, talent management personnel, and relevant team members, organizations can gain insights into employee aspirations and career goals. Leveraging these insights, career paths can be charted, outlining potential developmental opportunities and advancement possibilities. Furthermore, implementing regular performance reviews using a combined approach is recommended. This approach involves self-assessment by employees followed by managerial feedback, culminating in a collaborative discussion to identify areas for improvement and establish actionable steps for the following review cycle.

D. Skills Improvement: Organizations must demonstrate a continuous commitment to facilitating skill development among their employees. This commitment can be manifested through three key strategies:

- **Engaging external experts:** Seeking external guidance from domain specialists allows employees to access cutting-edge knowledge and industry best practices.
- **Providing internal and online training:** Offering a diverse range of internal training programs and e-learning resources empowers employees to pursue self-directed learning and upskilling opportunities.
- **Establishing Centers of Excellence (CoEs):** Creating dedicated CoEs within the organization fosters knowledge sharing and expertise concentration, allowing employees to learn from industry leaders and internal specialists within specific domains.

By implementing these comprehensive strategies, organizations can move beyond the limitations of traditional human resource management and embrace a human-centric approach that prioritizes individual development, career advancement, and overall employee well-being. This shift in perspective fosters a more engaged, motivated, and skilled workforce, ultimately contributing to organizational success and sustainability.

9. RISKS COVERED WITH PSE

By embracing Predictive Software Engineering (PSE) and adhering to the outlined principles, software development teams can effectively mitigate a range of potential risks, including:

- **Executive Disengagement:** The principles of Transparent Control and Meaningful Care foster open communication and stakeholder buy-in, minimizing the risk of insufficient executive support.
- **Scope Creep:** Transparent Control promotes clear and well-defined project scope, reducing the likelihood of ambiguity and uncontrolled expansion.

- **Inaccurate Estimates:** Disciplined Agile methodologies encourage iterative development and continuous estimation refinement, mitigating the risk of inaccurate initial estimates.
- **Resource Constraints:** Distributed Teams empower organizations to leverage a wider talent pool, potentially addressing resource limitations.
- **Skill Gaps:** Sound Human Development practices, like training programs and skill-building initiatives, equip teams with the necessary skills and knowledge, minimizing the potential for inadequate training.
- **Unclear Decision-Making:** Meaningful Care emphasizes open communication and collaborative decision-making, reducing the risk of ambiguity and confusion arising from unclear decisions.
- **Infrastructure Delays:** Transparent Control promotes proactive planning and communication, allowing for the timely identification and mitigation of potential infrastructure-related delays.

In addition to the risks already covered with Predictive Software Engineering (PSE), there are several other potential challenges that PSE can help mitigate:

- **Infrastructure Delays:** Transparent Control promotes proactive planning and communication, allowing for the timely identification and mitigation of potential infrastructure-related delays.
- **Technical Debt Accumulation:** PSE emphasizes proactive management of technical debt through regular assessment and prioritization, reducing the risk of accumulating unsustainable levels of technical debt that could impede future development efforts.
- **Quality Assurance Issues:** By incorporating Measurable Quality Management and Technical Debt Reduction System (MQM&TDR) into the development process, teams can identify and address quality issues early on, minimizing the risk of releasing buggy or unreliable software.
- **Security Vulnerabilities:** PSE promotes a security-conscious development approach, integrating security considerations throughout the development lifecycle. This helps reduce the risk of overlooking critical security vulnerabilities that could compromise the integrity of the software.
- **Project Dependencies:** Transparent Control and Agile methodologies facilitate clear visibility into project dependencies and promote a flexible approach to managing changes, reducing the risk of bottlenecks or delays caused by dependencies on external factors.
- **Stakeholder Misalignment:** Meaningful Care encourages regular stakeholder engagement and feedback, helping to ensure alignment between project objectives and stakeholder expectations. This reduces the risk of misunderstandings or conflicts that could derail the project.
- **Market Volatility:** Agile methodologies and Continuous Improvement practices enable teams to respond quickly to changes in market conditions or customer requirements, reducing the risk of being outpaced by competitors or delivering obsolete solutions.

Through the adoption of PSE and its associated principles, software development teams can navigate these common challenges and increase the likelihood of project success.

10. CONCLUSION

Custom software development often encounters bottlenecks hindering efficient and reliable delivery. Predictive Software Engineering (PSE) emerges as a novel framework designed to address these challenges and reconstruct a more robust approach to software development service delivery.

PSE seeks to mitigate the inherent uncertainties often associated with the creative aspects of programming. By establishing a structured and predictable framework, PSE aims to elevate software engineering to its intended state: a precise and controlled discipline.

Comprised of seven distinct yet interconnected concepts, the PSE framework fosters transparency, controllability, and inherent predictability within the software development process.

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While proprietary to Intetics and drawing upon their extensive experience in custom development, the framework's developers emphasize its broader industry value.

Recognizing the limitations of a solely individual effort, Intetics encourages collaborative industry-wide engagement in further refining and expanding upon the PSE framework. They emphasize that the framework's objective transcends individual company success, aiming to elevate the entire software development profession. This call for collaboration underscores the shared benefit of collective knowledge sharing and continuous improvement, prioritizing the advancement of the field above competitive advantage.

It is crucial to acknowledge that PSE remains an ongoing project, continuously evolving through research and development. The initial research, led by Boris Kontsevoi and Sergei Kizyan, laid the groundwork for this promising framework, building upon established global engineering practices. By promoting collaboration and knowledge exchange, the development of PSE can be accelerated, ultimately contributing to a more efficient, reliable, and predictable software development landscape.

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