EgonZehnder

How AI Is Rewiring Software Organizations and Redefining Talent Management

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Artificial intelligence is beginning to redefine how software is built, who builds it, how development organizations operate, and what leadership and talent management must accomplish. Over the past few years, generative AI has moved rapidly from experimentation into everyday development work. Code generation, testing, documentation, debugging, and increasingly the coordination of complete workflows can now be supported—or partially executed—by AI systems.

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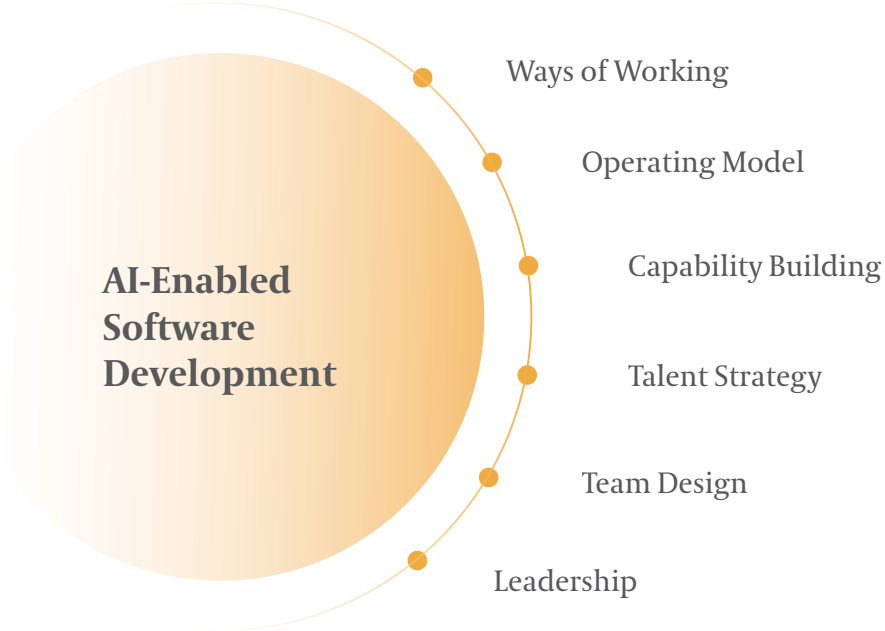
The most visible effect is greater speed. Activities that once took hours may now be completed in minutes. But productivity is only the first-order impact. The more consequential shift is organizational. As AI becomes embedded across the software development lifecycle, companies must reconsider roles, team structures, management practices, career models, sourcing strategies, and the relationship between human and machine capabilities. This is no longer merely a technology implementation. It is a transformation of the organizational system through which software is created. In conversations with general managers and talent leaders across the industry, one theme came through clearly: AI-enabled software development is becoming an organizational and leadership challenge, not simply a technology question.



For software-native businesses, this transformation may determine their future competitiveness. For established industrial companies that are becoming increasingly software-dependent, the challenge is even broader: They must build professional software talent systems while simultaneously changing traditional organizational structures and leadership assumptions.

The Step Change: From Developer Productivity to Organizational Reinvention

Many companies initially approach generative AI through a relatively narrow lens: How can individual developers write code more quickly? This is understandable. Developer productivity is visible, measurable, and offers an accessible starting point. Organizations introduce coding assistants, establish pilots, and track adoption or time savings. Early results can be significant.

Yet organizations frequently discover that isolated productivity improvements do not automatically translate into equivalent business impact. Faster coding may simply move bottlenecks elsewhere. Product decisions may remain slow. Testing, security reviews, architecture governance, deployment processes, or coordination between functions may still constrain the overall system.

The relevant question therefore changes. It is no longer simply: How much faster can an individual developer code? It becomes: How should the entire software development system be designed when significant parts of its work can be performed by AI?

Leading organizations are beginning to redesign workflows across the full development lifecycle. They are reconsidering the allocation of tasks between humans and machines, reducing handovers, integrating formerly separate activities, and challenging established assumptions about team size and composition. The implications can extend beyond internal productivity. Greater internal capacity may reduce reliance on external vendors. Smaller teams may manage broader scopes. Product cycles may accelerate. The economics of software development may shift substantially.

AI thus moves from being an individual productivity tool to becoming part of the operating backbone of software production.

The New Role of Developers: From Builders to Orchestrators

One of the most profound changes concerns what developers actually do. As AI systems take on more code generation, testing, documentation, and analysis, the human role shifts toward activities such as:

- defining objectives and constraints
- translating user and business needs into precise intent
- decomposing complex problems
- directing and coordinating AI agents
- evaluating the quality and security of outputs
- making architectural and ethical judgments
- integrating results into a coherent product and technology environment

Developers do not simply stop coding. However, coding becomes one component within a broader orchestration role. The developer increasingly manages a system of human and machine intelligence rather than producing every line of code directly. The metaphor that "developers become team leads and agents become their employees" captures part of this development. It also highlights the emergence of new management-like capabilities within technical roles. Developers need to delegate effectively, provide context, review work, recognize errors, resolve ambiguity, and remain accountable for outcomes they did not produce manually.

This requires a different skills architecture. Technical depth remains essential, particularly because people need sufficient expertise to detect plausible but incorrect AI outputs. At the same time, several capabilities gain importance:

- systems thinking
- product and customer understanding
- problem framing
- judgment under uncertainty
- critical evaluation
- communication and collaboration
- risk awareness
- the ability to learn and adapt continuously

The future will not necessarily belong to those who can generate the greatest amount of code. It may belong to those who can define the right problems, design effective human–AI workflows, and distinguish high-quality outcomes from superficially convincing ones.

The Organizational Consequences

A changing developer role inevitably alters the organization around it, encompassing everything from internal teams to external vendors.

Team Structures

Traditional software teams often have been designed around the availability and specialization of human expertise. As AI makes knowledge and execution capacity more broadly accessible, organizations may be able to create smaller, more autonomous, and more multidisciplinary teams. The boundaries between product management, engineering, quality assurance, operations, and design may become more fluid. Some specialist roles will remain essential, but parts of their routine work may be integrated into AI-enabled end-to-end workflows.

This does not automatically mean that every organization should reduce team size. It means that leaders must reconsider which combination of people, skills, and AI capabilities is required to produce a particular outcome.

Workforce Composition

Demand for some forms of entry-level execution work may decline, while demand for experienced judgment and broader problem-solving capability may increase. This creates a strategic dilemma. If organizations reduce junior hiring too aggressively because AI can perform many junior-level tasks, they risk undermining their future leadership and expertise pipeline. Companies must therefore develop new ways for early-career talent to build experience when traditional learning-by-doing tasks are increasingly automated.

Sourcing and Vendor Strategies

AI may allow organizations to internalize previously outsourced work because of limited capacity or cost constraints. This can reduce vendor dependency and retain more knowledge within the company. At the same time, sourcing decisions will become more sophisticated. Leaders will need to determine which capabilities are strategically differentiating, which can be augmented through external ecosystems, and where ownership of architecture, data, and critical knowledge must remain internal.

Why This Is a Talent Management Transformation

The widespread response to new technology is often to launch training. Training is necessary, but it is not sufficient.

The transformation affects the entire talent system, leading to questions such as:

- Which capabilities will the company need?
- Which roles will grow, change, merge, or disappear?
- How should talent be assessed?
- What experiences enable people to develop judgment?
- How should careers progress?
- What work should be performed internally?
- How can the company retain critical knowledge?
- How should leaders manage employees whose roles are changing?
- How can productivity benefits be translated into growth, innovation, or capacity rather than merely cost reduction?

Talent management must therefore move upstream. It cannot be a downstream support activity that reacts after technology and organizational decisions have already been made. It must become an integral part of business, technology, and operating-model design. This requires closer collaboration among the CEO, CTO, CHRO, and talent leadership.

The CEO: Put AI-Enabled Software Development on the Business Agenda

The CEO must frame the transformation as an enterprise issue rather than delegate it exclusively to technology leadership. This includes setting an ambition that goes beyond incremental efficiency. The central strategic question is not only how AI can reduce the cost of software development, but how greater software capacity can change the company's products, speed, customer experience, and competitive position.

The CEO must also make explicit choices about the use of productivity gains. Will they be reinvested in innovation? Used to reduce dependency on vendors? Directed toward faster transformation of legacy systems? Or primarily used for cost reduction? Without clarity, different parts of the organization may pursue conflicting objectives.

The CTO or Software Development Leader: Redesign the System of Work

The technology leader must translate the ambition into a new software operating model. This involves more than selecting tools. It includes redesigning development workflows, architecture, governance, team composition, quality controls, security practices, and decision rights. It also requires identifying where human judgment must remain decisive and where AI can be given greater autonomy.

The CTO must create environments in which teams can experiment quickly without compromising critical standards. Technology leaders also need to articulate how roles and capability requirements will evolve, making the implications understandable to employees and partners.

The CHRO: Shape the Future Workforce Before It Emerges

The CHRO must ensure that workforce implications are addressed early rather than treated as a later consequence of technology deployment. This means developing scenarios for future roles and capacity, redesigning workforce planning, adapting career architectures, and considering how recruiting, performance management, succession, mobility, and rewards need to change.

The CHRO also has to manage the human tensions of transformation. Employees will experience AI differently. Some will see opportunity and acceleration; others may experience uncertainty, status loss, or fear of displacement. Transparent communication is important, but it is insufficient unless accompanied by credible pathways for development and mobility.

A central task will be balancing short-term efficiency with long-term capability building. An organization that optimizes away its junior talent pipeline may improve current economics while creating a serious future succession problem.

The Chief Talent or Learning Officer: Build an AI-Enabled Talent System

In an AI-enabled software environment, the profile of the senior talent or learning leader will change substantially and become even more important for an organization. The role will require a combination of capabilities that have often been distributed across different functions:

- a credible understanding of software and AI-enabled work
- expertise in organizational and operating-model design
- strategic workforce planning and analytics
- learning architecture and capability building
- executive-level transformation leadership
- experience with role, career, and performance-system redesign
- the ability to connect talent investments to business and technology outcomes

This requires new learning formats: embedded practice, simulations, peer learning, AI-supported coaching, internal talent marketplaces, project-based development, and communities focused on emerging practices.

Talent leaders must help define new skill taxonomies and assessment approaches. Self-reported proficiency and course completion will provide little insight into whether a person can use AI effectively in complex, high-stakes work. Assessment must increasingly examine applied judgment and real outcomes.

In addition, most effective leaders will not position themselves primarily as providers of learning programs. They will act as architects of organizational capability. The Chief Talent or Learning Officer of the future may therefore be closer to a transformation and organizational architect than to the traditional head of corporate learning.

Leadership Behavior: Leading When the Future Operating Model Is Still Emerging

Structural changes will fail without corresponding changes in leadership behavior. Leaders must provide direction without pretending that every answer is already known. They need to combine ambition with experimentation and urgency with psychological safety.

Several behaviors become particularly important:

- **Setting bold direction**. Incremental goals tend to preserve existing processes. Leaders need to articulate what could become fundamentally different rather than ask only how current work can be made marginally faster.

- **Demonstrating personal engagement**. Employees notice whether leaders use and understand the technology themselves. Visible experimentation signals that AI-enabled work is not merely another delegated transformation program.

- **Creating permission to challenge existing work.** Teams must be able to question processes, role boundaries, governance mechanisms, and established measures of performance.
- **Managing tensions transparently**. Parts of the organization will progress at different speeds. Leaders should not conceal this variation, but explain the choices, implications, and expectations associated with it.
- **Maintaining accountability**. AI-generated work still requires clear human ownership. Leaders must prevent automation from producing ambiguity about who is responsible for quality, security, customer impact, or ethical consequences.
- **Protecting learning while increasing performance**. Employees need room to experiment and occasionally fail, but experimentation must be disciplined and connected to measurable outcomes.

The leadership challenge is therefore not simply to encourage AI adoption. It is to create a context in which people can redesign work responsibly.

The Particular Challenge for Industrial Companies

The transformation is especially significant for established industrial companies. Many of these organizations no longer regard software merely as a supporting function. Software increasingly shapes the product, the customer experience, operational performance, and future business models. Automotive, engineering, energy, healthcare, and manufacturing companies are all becoming more software-dependent.

Yet their talent and management systems were often designed for a different industrial logic. Hardware and software development may operate with different cycles, cultures, career models, and approaches to risk. Traditional structures may emphasize functional specialization, detailed planning, and long product lifecycles. Software organizations often depend on rapid iteration, product ownership, continuous deployment, and decentralized technical decisions.

AI adds another layer of complexity. Industrial companies must develop modern software capabilities while their understanding of software work is itself changing. They therefore need to avoid simply importing the talent practices of yesterday's technology companies. Instead, they must build an integrated model that combines engineering excellence, industrial reliability, software speed, product thinking, and AI-enabled ways of working.

This also has consequences for executive talent. CEOs and business leaders need sufficient software understanding to make strategic choices. Technology leaders need to navigate both digital and physical product environments. HR and talent leaders need to understand why

software talent cannot always be managed through traditional industrial career and performance systems.

From Technology Adoption to Institutional Capability

The central challenge is not whether organizations adopt AI tools. Most will. The differentiator will be whether they translate those tools into a new institutional capability: a coherent system of roles, workflows, leadership behaviors, talent practices, and organizational structures that allows humans and AI to create better software together.

Companies that treat AI primarily as a productivity initiative may achieve temporary efficiency gains. Companies that use it to rethink how work is organized can create a more fundamental advantage.

The transition from coding to orchestration is therefore not only a story about developers. It is a story about the future of organizations—and about whether their leaders and talent systems can evolve as quickly as the technology itself.

About Egon Zehnder

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