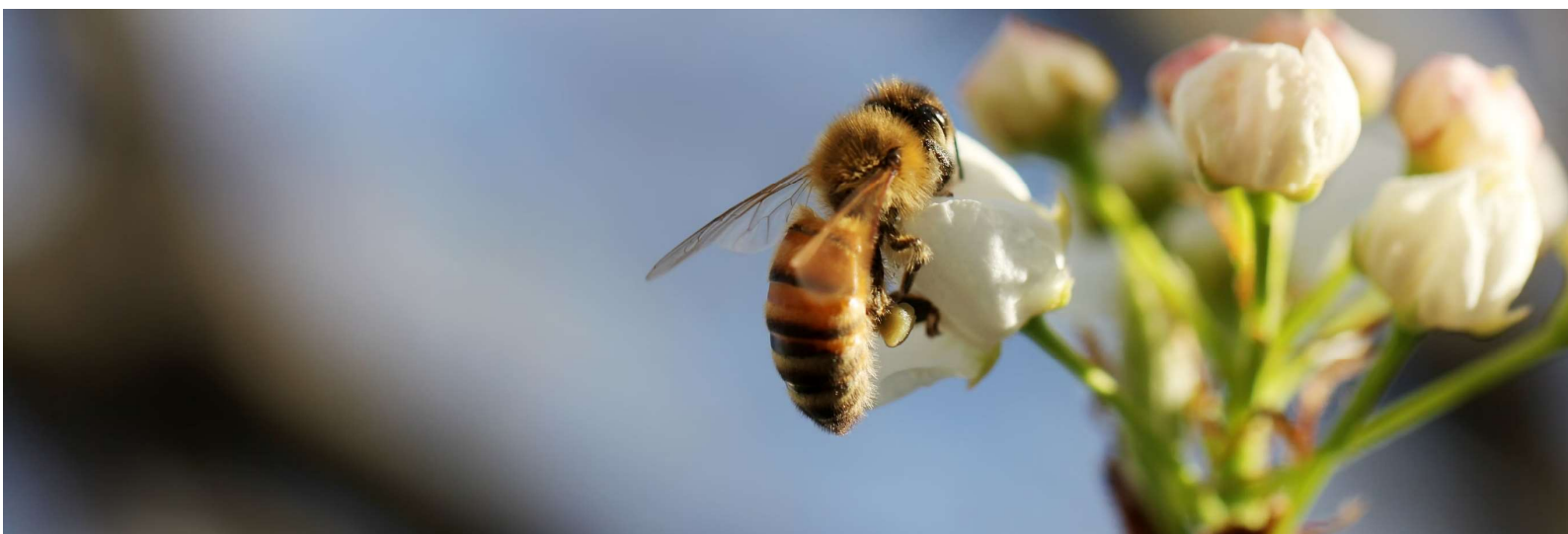


***Project Business Management*^{1,2}**

Ecosystems in Project Business

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“Selfish and contentious people will not cohere, and without coherence nothing can be effected.”
– Charles Darwin³



Summary

Projects performed under contract form complex ecosystems in which companies compete and cooperate simultaneously. This article explores how Project Business mirrors biological systems – from the interdependence of cells and mitochondria to the balance of predators, parasites, and symbionts. It links conflict-causing factors, such as divergent interests and incompatible organizations, to systemic behavior in project networks. By viewing projects as living ecosystems rather than zero-sum transactions, professionals can foster trust, resilience, and shared success across corporate boundaries — sustaining both business and collaboration in the global Project Economy.

¹ This is an article in a series by Oliver Lehmann, author of the book “[Project Business Management](#)” (ISBN 9781138197503), published by Auerbach / Taylor & Francis. See full author profile at the end of this article. A list of the other articles in PM World Journal can be found at <https://pmworldlibrary.net/authors/oliver-f-lehmann>.

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³ (Darwin, 1871)

Definitions⁴

Ecosystem:

1. All the living things in an area and the way they affect each other and the environment
2. Any complicated system consisting of many different people, processes, activities, etc., especially relating to technology, and the way that they affect each other
3. All the plants, animals, and people living in an area considered together with their environment as a system of relationships
4. A group of businesses or business activities that affect each other and work well together

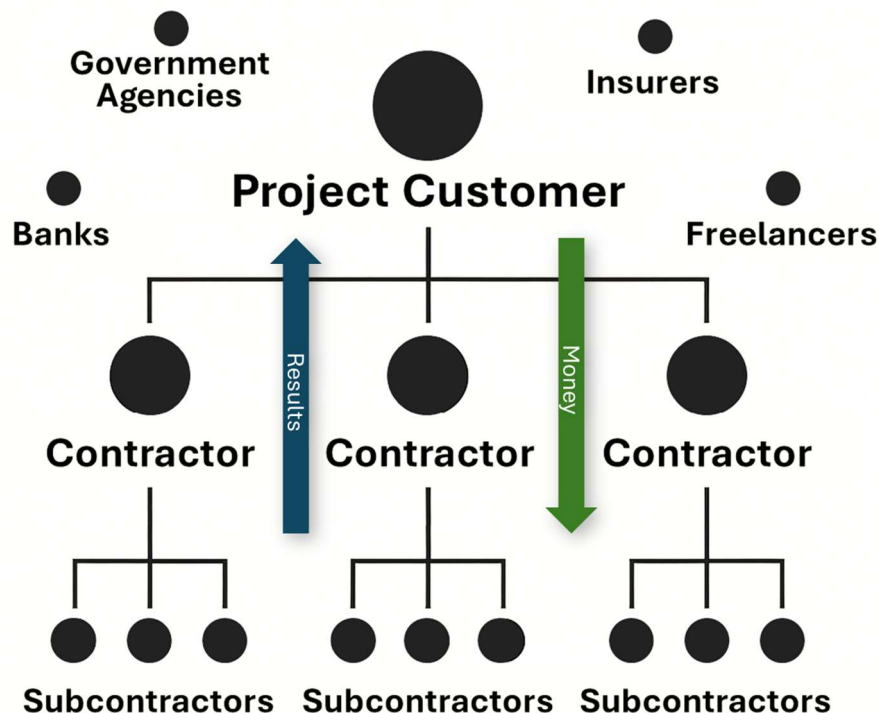


Figure 1: A Project Business ecosystem is a living network of independent, interdependent actors and flows of money and results.

A Story from the Field

The project began with great expectations.

MetalForm GmbH⁵, a respected German automotive supplier, had just won a prestigious contract to design and deliver lightweight battery enclosures for a new electric-vehicle

⁴ (Cambridge Dictionary, n.a.)

⁵ Names changed

platform. The customer – a global car manufacturer – trusted MetalForm’s engineering expertise and innovative approach.

But what started as a triumph slowly turned into a case study of failure.

At the first joint meeting, MetalForm’s managers radiated confidence – and control. Their goal, they said, was clear: maximize profit and keep the customer “in check.” Each negotiation became a tug-of-war. Every design change was treated as a revenue opportunity. When a subcontractor fell behind schedule, MetalForm’s purchasing department imposed penalties rather than seeking solutions.

Meanwhile, communication grew tense. The customer, once collaborative, began to hedge its bets by launching its own internal design effort “just in case.” Trust evaporated.

Months later, costs had ballooned, schedules slipped, and nobody could say who was in charge anymore. In a final post-mortem meeting, one exhausted engineer summed it up:

“We behaved like predators in a forest we depended on for food.”

MetalForm’s management had failed to see that they were really part of a living ecosystem – not a zero-sum contract.

From Nature to Business

In nature, every organism lives within an ecosystem – a web of relationships that balances competition and cooperation. Forests, coral reefs, wetlands, and even the human body itself are complex adaptive systems that survive only through interaction and interdependence.

The human body offers a striking example. It is not just a single being but a community of life forms, a vast ecosystem composed of human cells and trillions of microorganisms – bacteria, fungi, and viruses – that live in and on us. Together they form the microbiome, a densely populated world that digests our food, supports our immune system, protects our skin, and even influences our emotions and behavior.

When these inner and outer ecosystems become unbalanced, disease follows.

Inside each of our cells lives another kind of ancient symbiont: the mitochondria. They were once independent bacteria that entered primitive cells about 1.5 billion years ago – perhaps as prey, perhaps as parasites – but gradually evolved into partners.⁶ The cells provided protection and nutrients; the mitochondria supplied energy in return and took over a vast array of other tasks that the cells could not perform alone.

Over time, cells and mitochondria became inseparable. Neither could survive without the other. What began as an act of predation became one of the most successful symbiotic relationships in the history of life. Without mitochondria, animals including us couldn’t move or think, and our heart would not beat.

⁶ (Alberts et al., 2002)

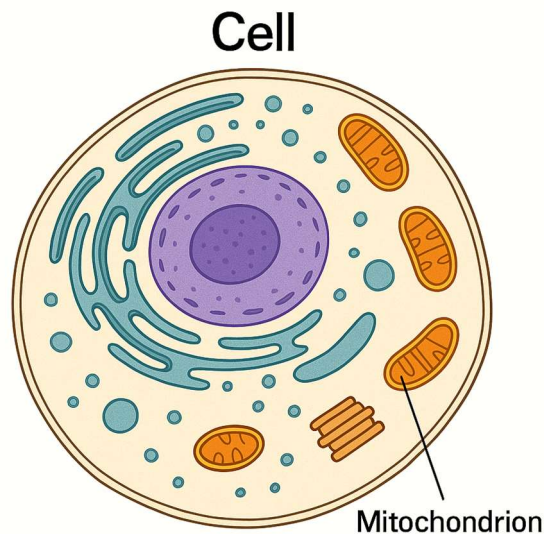


Figure 2: Mitochondria today are inseparable organelles inside cells. However, over 1,5 billion years ago, they were independent organisms.

Interesting: Mitochondria even go through their own process of evolution, including reproduction, mutation, and selection. Inside a cell, mitochondria compete with each other but also cooperate to their own benefit and that of the cell, with whom they share evolutionary success and failure.

Inside most human cells, there are 1,000 to 2,500 mitochondria; some cells may have many more⁷. The human body has 28 to 36 trillion cells⁸. Obviously, for bacteria, turning into mitochondria was a good decision in evolutionary terms.

Human societies and economies mirror this pattern.

We depend on one another through countless visible and invisible exchanges – energy, knowledge, trust, and value. Companies, like cells, specialize in certain functions, while their suppliers, customers, business partners, and regulators play complementary roles. Together they form industrial ecosystems where independence and interdependence must coexist.

Project Business represents one of the most intricate and dynamic of these human-made ecosystems. Here, independent organizations – customers, contractors, subcontractors, consultants, financiers, and insurers – come together temporarily under contract to deliver outcomes none could achieve alone. Each party acts like an organ or a cell within a larger body. Money flows through the system as blood; information travels like nerve impulses; governance functions as the immune response; and trust serves as the vital force that holds everything together.

When one part hoards resources or turns against the others, the ecosystem weakens – just as disease spreads when cells forget that they belong to a body. When cooperation and balance prevail, the system thrives, adapts, and evolves toward resilience. Project Business, like life itself, advances through these symbiotic relationships – fragile, interdependent, and essential for survival.

⁷ (Pizzorno, 2014)

⁸ (Murugesu, 2023)

Fine-Tuning the Balance

In both nature and Project Business, neither competition nor cooperation is inherently good or bad – what matters is their balance. Ecosystems thrive on a dynamic equilibrium where rivalry stimulates adaptation and collaboration sustains survival.

Too much competition, however, turns the ecosystem into a battlefield.

In nature, overpredation leads to extinction; in Project Business, it leads to price wars, squeezed margins for contractors, frustratingly poor performance performed for clients, and distrust. Contractors may underbid to win work, then struggle to deliver, triggering cascades of failure across the supply network. The short-term victor often becomes the long-term loser as the network loses its capacity to regenerate value.

Excessive cooperation, on the other hand, can also weaken resilience. It may also turn into forms of corruption.



Figure 3: Project Business must find the balance between excessive rivalry and harmony

When relationships become too cozy, innovation slows, inefficiencies grow unnoticed, and accountability fades. In biological terms, this resembles an ecosystem that has lost selective pressure – a monoculture awaiting the next pest. In Project Business, such stagnation may show up as groupthink, inflated costs, or chronic complacency disguised as harmony.

Healthy ecosystems – natural or commercial – are therefore finely tuned tension systems. They rely on continuous adjustment: enough friction to drive evolution, enough alignment to maintain stability.

Leaders who understand this do not try to eliminate tension; they manage it, ensuring that competitive energy fuels creativity while cooperative spirit preserves the common habitat. In essence, resilience in Project Business depends not on choosing sides between cooperation and competition, but on mastering the rhythm between them.

Understanding this biological truth helps project professionals see that they are not mechanical operators but participants in a living, breathing system – one that flourishes only when every actor recognizes the others as partners in shared existence.

Conflicts in the Ecosystem – When Competition Turns Toxic

Every ecosystem contains tension, and in Project Business, this tension often surfaces as conflict. Some degree of disagreement is natural and even healthy – it sharpens understanding, encourages negotiation, and drives improvement. Yet when competition overshadows cooperation, conflict turns toxic and threatens the balance that keeps the network alive.

Research by the Project Business Foundation on *Conflicts in Project Business*⁹ shows that the most frequent and most destructive disputes rarely arise from technical problems – they come from behavioral and structural misalignments among the parties involved. At the top of the list are divergent business interests – the simple fact that every organization in a cross-corporate project pursues its own goals. Customers seek maximum value and cost control, contractors aim for profit and liquidity, subcontractors depend on continuity and timely payments, while financiers, insurers, and regulators focus on stability and compliance. All these aims are legitimate, yet they seldom coincide completely. Where interests overlap, cooperation thrives; where they diverge, friction becomes inevitable.

The second and third leading causes of conflict identified in the study are incompatible organizations and incompatible individuals. Some companies simply do not fit together – their governance models, values, or corporate cultures collide like mismatched tissues in a living body. Even when the structures align, individuals may clash – leaders with conflicting ethics, temperaments, or communication styles can inject toxicity into an otherwise sound relationship. Divergent interests, incompatible organizations, and incompatible people thus form the triad of systemic friction in Project Business – the hidden engine behind most disputes.

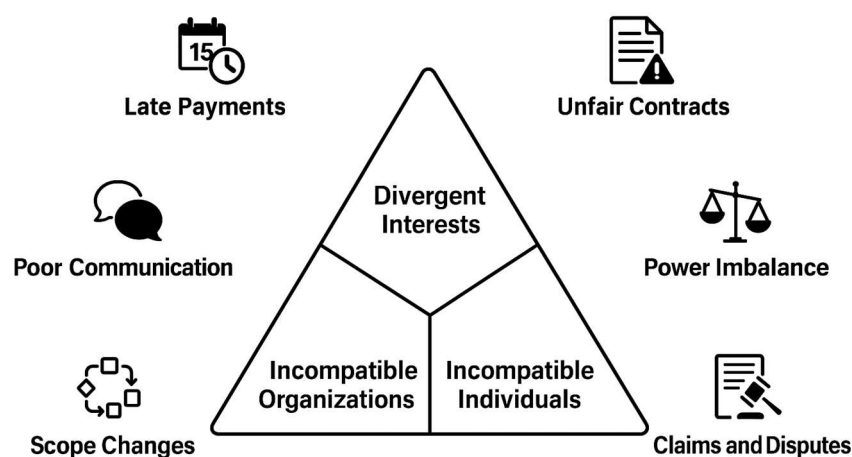


Figure 4: The triad of systemic friction in Project Business – conflict sources rooted in behavior, structure, and interest.

Other triggers amplify these root causes and make them visible: unclear or unfair contracts that invite opportunism; late or missing payments that block the project's financial

⁹ (Project Business Foundation, 2022)

bloodstream; unilateral scope changes and asymmetric risk transfers that shift burdens without consent; and weak governance or missing escalation paths that prevent early resolution. Each of these acts like an ecological disturbance – drought, pollution, or disease – eroding the system’s ability to regenerate trust.

In essence, conflict in Project Business is the natural outcome of independent entities defending their own survival, much like species competing for limited resources in nature. But while competition drives evolution, over-competition destroys ecosystems. Mature organizations therefore do not try to eradicate conflict; they manage it intelligently. They recognize that divergence is unavoidable and treat conflict as a form of feedback – a sign that the system needs recalibration. Constructive dialogue, transparency, and balanced governance act as the ecosystem’s immune response, restoring health before crises spread.

Handled this way, conflict becomes an instrument of adaptation rather than destruction. The most resilient Project Business ecosystems are not those without disagreement, but those in which divergent interests, organizations, and individuals coexist productively – turning friction into learning and learning into collective strength.

The Project Business Ecosystem

A Project Business ecosystem is far more than a linear supply chain. It is a living network of interdependent actors – customers who define the need and fund the work, contractors who deliver and bear performance risk, and a multitude of subcontractors and suppliers whose contributions, though small, are vital. Around them orbit consultants and freelancers providing flexible expertise, while banks, insurers, auditors, and regulators serve as the system’s financial and ethical stabilizers – its equivalent of an immune system that keeps the entire network healthy.

Each relies on the others. Each benefits when the system thrives – and suffers when it fails. Information, money, and goodwill flow through this web like nutrients through a forest floor. When these flows stop – when payments are delayed, data is withheld, or trust erodes – the system begins to starve.

Competition and Cooperation – The Dual Nature of the System

In every ecosystem, competition and cooperation coexist.

- In nature, predators and prey keep populations balanced.
- In business, rivalry drives innovation and efficiency.

But cooperation sustains the environment that allows all to survive. The same tension defines Project Business. Companies fight hard to win contracts – then must turn around and collaborate to deliver them. The shift from “beat the competition” to “build together” is not easy.

When that shift fails, ecosystems weaken. When it succeeds, projects flourish, learning accelerates, and future business follows. Healthy ecosystems balance these opposites:

- Compete to enter.
- Cooperate to endure.
- Co-evolve to grow.

Parasites, Predators, and Symbiosis

Not every relationship in nature is healthy. Instead, parasites steal resources without giving anything back; predators often overhunt; and symbionts sometimes develop an egotistic self and threaten the partner organism.

The same patterns exist in Project Business:

- Parasitic behavior: delaying payments, exploiting change orders, or hiding information.
- Predatory behavior: squeezing suppliers until quality drops or pushing unfair risks downstream.
- Symbiotic behavior: co-creating solutions, sharing risks, and investing in mutual success.

Every ecosystem contains all three types – but balance decides survival. When parasitism becomes dominant, trust erodes, projects stall, and entire industries suffer reputational damage. When symbiosis prevails, innovation and resilience follow naturally.

Ecosystem health in a project depends on transparency in contracts, ethical leadership, long-term relationship thinking, business energy, and flow of information and work results.

The Flow of Energy

In a forest, energy flows through sunlight, plants, and animals. In Project Business, the energy flows through money, information, and motivation.

- Money – the lifeblood.
Delayed payments starve subcontractors.
- Unbalanced cash flow kills initiative.
Information – the nervous system.
- Transparency enables coordination.
Misinformation spreads chaos.
- Motivation – the emotional energy.
Trust, recognition, and shared purpose keep the system alive.

When one of these flows is blocked, the entire ecosystem weakens. Good leaders monitor these flows continuously – just as biologists monitor water quality in a lake.

Governance – The Climate of the Ecosystem

Nature's climate shapes its ecosystems. Too dry, and plants die; too wet, and roots rot.

In Project Business, governance plays the same role. It defines the “weather” of collaboration, including contract terms and fairness, risk distribution, dispute mechanisms, communication processes, and rules for joint decision making.

Good governance provides stable conditions – predictability without rigidity. Bad governance creates storms: bureaucracy, mistrust, and finger-pointing. A healthy climate of Project Business includes:

- Clear roles and responsibilities across corporate borders.
- Balanced incentives.
- Shared tools for planning and risk management.
- Ethical norms backed by leadership example.

Governance is not just about control; it's about sustaining balance.

The Micro-Ecosystem of Trust

In every ecosystem, countless small interactions keep the system alive – a bee pollinating a flower, fungi feeding tree roots. In Project Business, these interactions take the form of:

- Prompt replies to emails.
- Honest progress reports.
- Respectful feedback and problem-solving.

They may seem small, but they build trust, the most precious resource in any project ecosystem. Trust reduces transaction costs, speeds up decisions and makes people share their best ideas.

Lose trust – and even the most detailed contract turns into a weapon.

Build trust – and the ecosystem grows stronger with every project.

Leadership as Stewardship

Leadership in Project Business is not about dominance. It is about stewardship – caring for the system that sustains your success. Effective leaders:

- See the big picture beyond their own company's walls.
- Nurture fair and transparent relationships.
- Reward cooperation as much as technical performance.
- Protect their partners as they would protect critical infrastructure.

Ethical leadership is not moral decoration – it is strategic hygiene. A reputation for fairness attracts the best partners and opportunities. A reputation for exploitation drives them away. In the long run, only ecosystems led by stewards survive.

Adaptation and Evolution

Every ecosystem evolves. Species that cannot adapt to change go extinct.

In Project Business, adaptation means learning. Each project is a test of resilience and innovation. Organizations that reflect on what worked – and what didn't – evolve faster. Those that treat every project as unique and unconnected stagnate.

Digital transformation accelerates this evolution:

- Shared data environments enable transparency.
- AI-based analytics reveal patterns of cooperation and risk.
- Virtual collaboration tools expand the ecosystem's reach.

Technology can strengthen the ecosystem – but only if it remains open and balanced. Monopolizing data or controlling access is the new form of overpredation.

Resilience Through Diversity

Monocultures die easily; diverse forests endure. In Project Business:

- Overreliance on one customer or one contractor creates fragility.
- A mix of industries, regions, and project types builds resilience.
- Diverse teams – in culture, experience, and mindset – handle volatility better.

Diversity is not only social virtue; it is economic survival strategy.

Economics of the Ecosystem

Traditional accounting asks, "What is my profit?" Ecosystem thinking asks, "What keeps everyone profitable enough to stay in business?"

Project Business thrives when:

- Risk and reward are balanced across the network.
- Cash flow is reliable at every level.
- Profits are sustainable, not extractive.

Shared value is not charity – it is enlightened self-interest. When partners stay healthy, future collaboration becomes easier, faster, and cheaper. The ecosystem as a whole gains competitive strength.

When Ecosystems Collapse

Collapse rarely happens suddenly. It builds quietly, like drought in a forest. Early warning signs include:

- Constant disputes over contract interpretation.
- Late payments or unilateral changes.
- Distrust and defensive communication.
- Loss of key people and knowledge.

Then comes the tipping point – a supplier bankruptcy, a lawsuit, a funding stop – and the system implodes. Rebuilding trust and capacity takes years. Wise organizations monitor ecosystem health continuously, using tools such as regular partner surveys, financial stability checks, and joint risk reviews.

An ounce of prevention saves a forest.

Tools for Ecosystem Management

Healthy Project Business ecosystems are actively managed, not left to chance. Key tools include:

- Teaming agreements: to define principles before formal contracts.
- Risk-sharing models: to align incentives and discourage opportunism.
- Contract lifecycle management (CLM): to maintain consistency and transparency.
- Joint governance boards: to resolve issues early.
- Performance dashboards: combining technical, financial, and relational metrics.

These are not bureaucratic rituals; they are the immune system of the project economy.

When Ecosystem Thinking Works

Not all stories end like MetalForm's. A global engineering company, working on a hydroelectric project in South America, did things differently. Before signing any contracts, the key participants – the customer, contractor, and suppliers – met for a two-day workshop to create a "Partner Ecosystem Charter."

It defined shared values: transparency, mutual respect, quick issue resolution, and open communication. Every company signed it voluntarily. Delays still occurred, but disputes were solved within hours. Costs stayed stable. Trust grew. When the project ended, the customer extended the collaboration for the next phase – without retendering.

The reason? Confidence in the ecosystem.

The success of this project was not the result of flawless execution or perfect planning – there were still setbacks, technical surprises, and tense moments. What made the

difference was the behavioral climate that the ecosystem fostered. Instead of using the contract as a weapon, participants used it as a shared safety net. When risks materialized, they were addressed collectively. When new opportunities arose, benefits were shared rather than hoarded.

Over time, the project network developed its own form of intelligence – a collective ability to sense problems early and self-correct before they escalated. Relationships deepened into partnerships, and knowledge accumulated across corporate boundaries. By the time the project closed, the participants had created something that outlived the contract itself – a functioning and resilient ecosystem capable of taking on new challenges together.

Such outcomes are not accidents. They emerge when leaders act as stewards rather than owners, when fairness and competence carry equal weight, and when the ecosystem's health is treated as a shared strategic asset. Ecosystem thinking works when people realize that success is not measured only by delivered scope or earned profit, but by the system's ability to continue thriving beyond the project's end.

True maturity in Project Business is reached when organizations stop asking "What do we get out of this project?" and start asking "What does the ecosystem gain from our participation?" – because in a healthy system, those two answers eventually become the same.

The Bigger Picture – Project Business and the Global Economy

Today, between 20 and 30 percent of the global GDP – around 11 trillion US-dollars – is generated by Project Business: the delivery of projects under contract for paying customers. This is no niche activity but a major pillar of the world economy. Yet it remains largely invisible in economic statistics and policy discussions. Governments measure manufacturing, construction, and services, but the temporary, cross-corporate networks that actually deliver much of that value often fall through the cracks.

As globalization and specialization deepen, these networks multiply. Energy, infrastructure, IT, and defense projects increasingly rely on complex ecosystems that dissolve and re-form around new opportunities. Every time such a network succeeds, value is created far beyond the individual participants – knowledge, innovation, and employment spread across borders. Every time it collapses, the losses ripple just as widely, disrupting supply chains, eroding trust, and draining capital from entire regions.

The Project Economy therefore mirrors a global biosphere. Its health depends on diversity, trust, and balance. If those elements weaken, systemic fragility emerges. When one dominant customer squeezes its suppliers too hard, the damage can travel up the chain, just

as deforestation in one area can alter a whole climate zone. When transparency and fair risk sharing prevail, by contrast, prosperity spreads like a regenerative ecosystem.



Figure 5: Project ecosystems as the living infrastructure of the global economy.

In many industries, short-term opportunism has already shown its cost. Predatory contracting, unrealistic bidding, and one-sided risk allocation may yield quarterly profits, but they silently deplete the soil that future business depends on. Rebuilding that trust capital takes years, sometimes decades. Sustainable Project Business instead aims for what natural systems have perfected over billions of years – equilibrium through constant adaptation.

Project ecosystems also act as incubators for innovation. Technologies such as artificial intelligence, digital twins, and shared data environments are accelerating collaboration across companies and continents. When used ethically and openly, they strengthen the fabric of global Project Business; when monopolized or closed off, they create digital deserts where only a few can survive.

For the global economy, the challenge of the coming decade is therefore not merely to manage projects faster or cheaper, but to cultivate resilient project ecosystems – capable of withstanding shocks, learning collectively, and regenerating trust. Policymakers, financiers, and industry leaders must start to see Project Business not as a set of transactions, but as a living infrastructure of cooperation.

If this perspective takes hold, the impact could be transformative. A healthier Project Economy would mean more equitable global growth, fewer systemic failures, and more sustainable innovation. But achieving this requires a shift in mindset: from isolated competition to ecosystem stewardship. The task is clear – manage complexity without losing cooperation, encourage innovation without destroying fairness, and compete hard without forgetting the forest we live in.

Conclusion – Thinking Like an Ecosystem

Project Business is not necessarily a battlefield. It is a living ecosystem where every participant – customer, contractor, supplier, or consultant – plays a part in the system's survival.

To thrive within it, professionals must learn to think ecologically:

- See connections, not silos.
- Value trust as much as cash.
- Understand that ethics are not optional; they are functional.
- Treat every project not as a transaction but as a shared habitat.

Because in Project Business, as in nature, greed destroys, cooperation sustains, and shared purpose makes life flourish.

A Call to Action – Building Healthier Project Ecosystems

Ecosystem thinking must now move from awareness to action. Each of us – whether as project manager, executive, customer, or contractor – has the power to strengthen the system we depend on.

Here are tangible steps to begin with:

- Acknowledge interdependence. Recognize that your project's success depends on the prosperity and reliability of others.
- Foster transparency. Share data, intentions, and concerns early – before issues escalate.
- Reward fairness. Make integrity and long-term cooperation measurable performance criteria.
- Encourage learning. Conduct honest post-project reviews across corporate borders.
- Invest in capability. Develop professionals who understand Project Business as both project management and business management.
- Promote trust. It grows slowly – but once built, it becomes your most renewable asset.
- Perform healing days, moderated one-day workshops under the guidance of an experienced facilitator to resolve conflicts among the parties involved.

The Project Economy will only remain sustainable if its participants act as stewards, not exploiters. Our projects, our organizations, and our global industries form a living fabric. Every decision we make either nourishes or depletes it.

So let's choose wisely. Let's make Project Business not just profitable – but alive, resilient, and regenerative.

Appendix: What is Project Business?

Many of today's projects are no longer internal endeavors. In a world shaped by global supply chains, outsourcing, and cross-border collaboration, projects are increasingly delivered by networks of companies. These projects are not just technical undertakings – they are commercial ventures.¹⁰

Project Business arises when two or more companies team up to perform a project under contract. It operates at the boundaries between organizations and often involves diverse legal systems, cultures, and moral compasses. Some project networks are simple; others are complex and fragile ecosystems with dozens, sometimes hundreds of organizations involved.

Though long overlooked, Project Business contributes an estimated 20% to 30% of global GDP and employs more project managers than internal projects. It deserves far more attention – not only for its scale but for the unique challenges it poses.

Traditional project management handbooks (for example, Turner¹¹) typically address internal projects within organizations. By contrast, project business takes place across corporate boundaries, introducing commercial, legal, and relational complexities that such works only partly cover. Project business (cross-corporate, customer-contractor) has different challenges and rules – success depends here not only on planning and execution, but on commercial acumen, legal awareness, and a deeply cooperative mindset. Trust must be built among parties with differing interests and asymmetric power to enable collaboration toward shared success.

The risks in Project Business go beyond deadlines and deliverables – they include cash flow instability, legal exposure, reputational damage, and contractual disputes. Where information is asymmetrical and objectives diverge, the project manager must act as negotiator, strategist, and builder of partnerships.

¹⁰ (Lehmann, 2018)

¹¹ (Turner, 2009)

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He studied Linguistics, Literature, and History at the University of Stuttgart and Project Management at the University of Liverpool, UK, where he holds a Master of Science Degree (with Merit). Oliver has trained thousands of project managers in Europe, the USA, and Asia in methodological project management, focusing on certification preparation. In addition, he is a visiting lecturer at the Technical University of Munich.



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- ["Situational Project Management: The Dynamics of Success and Failure"](#) (ISBN 9781498722612), published by Auerbach / Taylor & Francis in 2016
- ["Project Business Management"](#) (ISBN 9781138197503), published by Auerbach / Taylor & Francis in 2018.

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- <https://pmworldlibrary.net/authors/oliver-f-lehmann>