



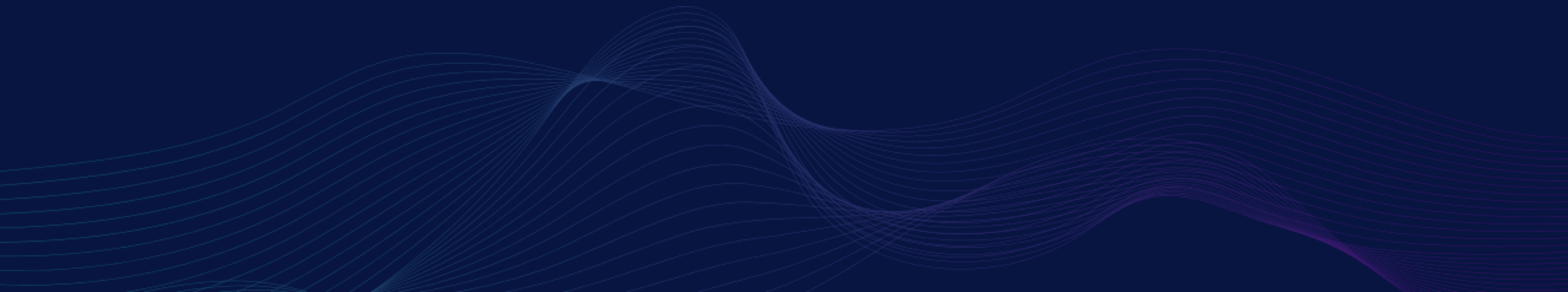
Chief Technology Officer

The human side of software development

Coenie Vermaak



Why consider the human side of software development





Software development goes beyond lines of code

Motivation, cooperation and culture

These are the invisible forces that shape the success of software projects

Burnout, stress and disengagement can derail even the most technically skilled teams



Effective software delivery

Consistently deliver software that meets user needs, business goals and quality standards

Deliver the right thing, the right way, at the right time

Technical Excellence means little if software does not solve real problems



To create Value

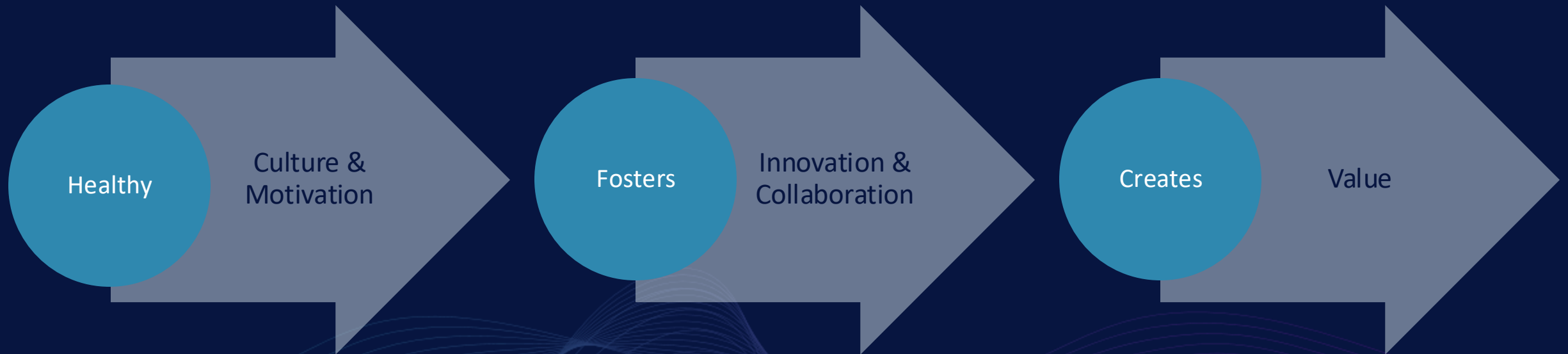


- By solving real problems, improving lives and enhancing experience
- By fostering continuous learning, a healthy culture and doing purposeful work
- By creating a competitive advantage, operating efficiently and sustainably, to ensure customer loyalty



Adding value to customers

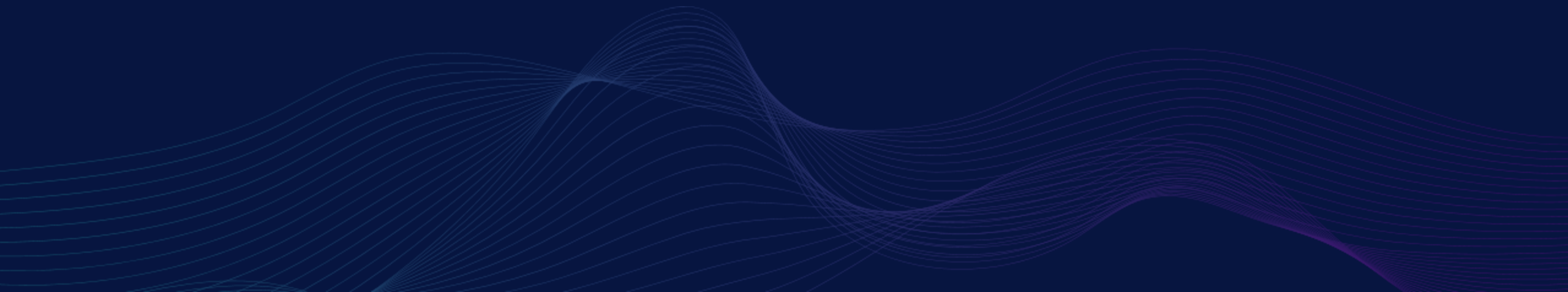
- directly impacts customer satisfaction
- and business success



A well-functioning team can achieve more collectively than the sum of what everyone could accomplish alone



What should be considered







Alignment & empathy

- Understand real needs, pain points and business goals
- Practice active listening and empathy when trying to understand
- Adapt and implement at a cadence that meets expectations and reinforce certainty

Structure & roles

- Clearly define responsibilities: Ensuring authority, and accountability is well defined
- Facilitate a culture of mutual respect, inclusive team dynamics and alignment with core values
- Foster environment for success, not for reprimand or failure

Communication & collaboration

- Strong communication and empathy improve teamwork and reduce misunderstandings
- Communicate with clear intent, in a consistent manner, in a context fit for the audience
- Communication is a two-way activity, listening builds trust and reveals insights



User experience

- Consider emotional response, satisfaction and overall value perceived by the user
- Comprehend when, where and how users interact with the solution
- Ensure that the user can effectively and efficiently achieve their goals

Developer experience

- Maintain clean codebases, good documentation, supportive tooling and fast feedback loops
- Encourage mentorship and continuous learning
- A great developer experience enhance retention, engagement, productivity and code quality

Feedback loops

- Regularly gather user and team feedback
- Comprehend and action feedback, people feel valued when their input is considered
- Acknowledge contributions publicly when appropriate
- Share outcome of feedback



Culture of innovation & ownership

- Empower teams to experiment and take initiative
- Celebrate wins and learn from failures
- Developers are often passionate about innovation and technology – Foster environment for learning and knowledge sharing

Ethical considerations

- Respect privacy and promote fairness
- Consider the human consequences of algorithms and data usage – software decisions affect privacy, equity and society
- Ethics in AI and responsible tech development are increasingly critical concerns

Sustainable pace & wellbeing

- Prevent burnout with realistic timelines and workload
- Promote work-life balance and mental health awareness
- Tired teams work slower and make more mistakes
- Pressure and blame erode collaboration, trust and value



Vision & purpose

- Align the team around a shared mission
- Inspire with clear goals and meaningful impacts
- Reduce friction and confusion in decision making
- Shape values, behaviors and priorities

Leadership

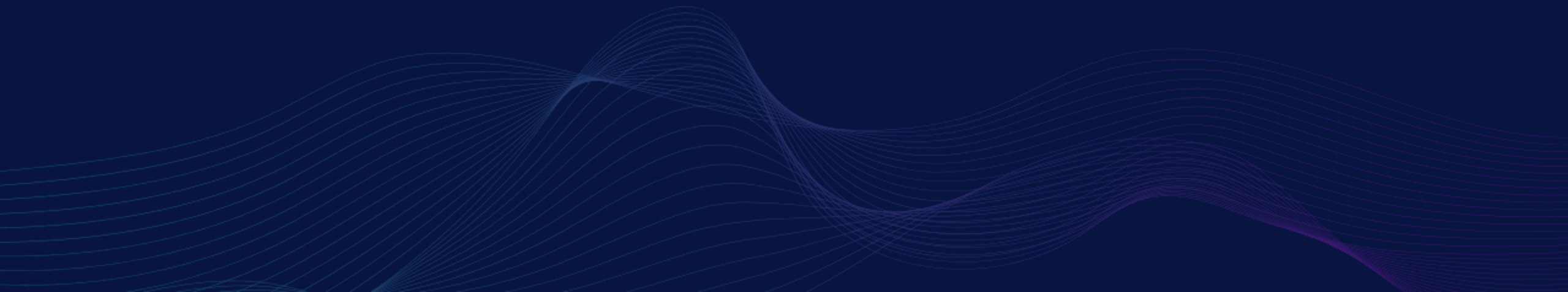
- Encourage learning and growth through challenges
- Practice empathy, active listening and emotional regulation
- Delegate effectively and trust your team
- Offer coaching, mentorship and constructive feedback

Team empowerment

- Delegate authority, not just tasks
- Avoid micromanagement
- Support self-organization and cross-functional teams
- Equip teams with the tools, training and time they need to accomplish their goals



How to level up





Observe, Identify & Sustain

Focus On

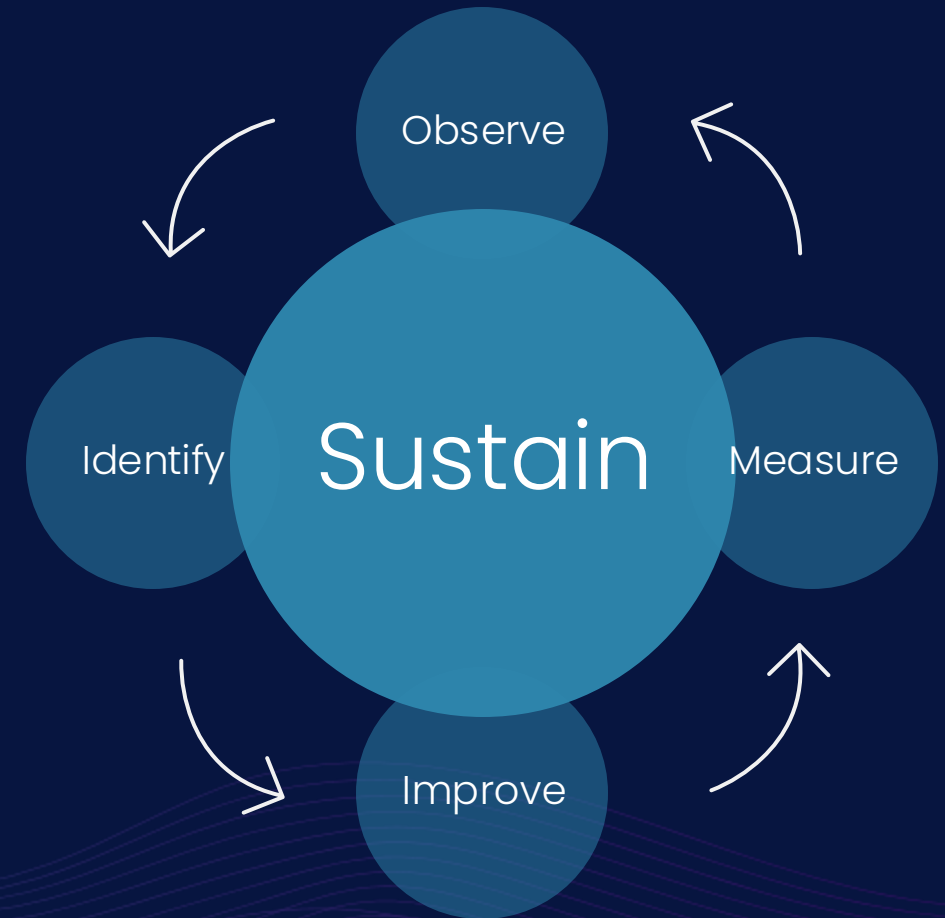
- Creating an environment where people feel safe to speak up, ask questions and admit mistakes
- Giving teams autonomy, ownership and decision-making power
- Encouraging cross-functional teamwork and open communication

Measure

- Identified items, good or bad should be measured to empirically gauge impact of changes over time
- Identify trends and comprehend elements contributing to trends
- Reflect and adapt regularly

Sustain over time

- Embed human-centered values into onboarding, performance reviews and team rituals
- Maintain a culture of respect, recognition and appreciation
- Align incentives with collaboration, learning and impact, not just output
- Regularly evolve team norms and leadership behaviors





Implement SMART goals and people centric KPIs

Specific	<ul style="list-style-type: none">• Goal should be clear and well defined
Measurable	<ul style="list-style-type: none">• It must be possible to track progress and measure the outcome
Achievable	<ul style="list-style-type: none">• Should be realistic and attainable, considering available resources and constraints
Relevant	<ul style="list-style-type: none">• The goal must align with the broader business objectives and core values
Time-bound	<ul style="list-style-type: none">• Set a deadline to create urgency and focus

In addition to traditional KPIs of Burndowns, Cadence and Sprint Quality, also measure...

Metric	Description
Engagement	Emotional commitment, motivation and enthusiasm of the team
Team dynamics	Comfort in speaking up, taking risks and being vulnerable
Collaboration quality	Effectiveness of teamwork and communication
Wellbeing index	Work-life balance, stress levels and sustainable pace
Empowerment	Autonomy, decision-making authority and ownership



Software development is a deeply human endeavor

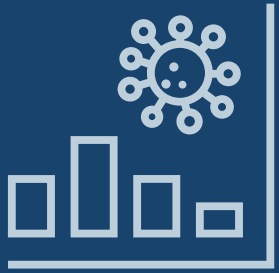
The quality of the code is shaped by

- the clarity of communication
- the strength of collaboration
- the wellbeing of our teams

Define the philosophy by

- Articulating core beliefs and values
- Build credibility and trust by having your actions consistently reflect the philosophy
- Highlight moments of growth, challenges and transformation
- Be consistent, but adaptive

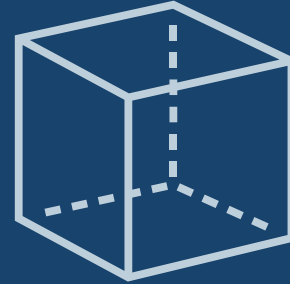
The aim is not only to build software, but to build sustainable systems that deliver real value



Set intervention thresholds



Track trends over time

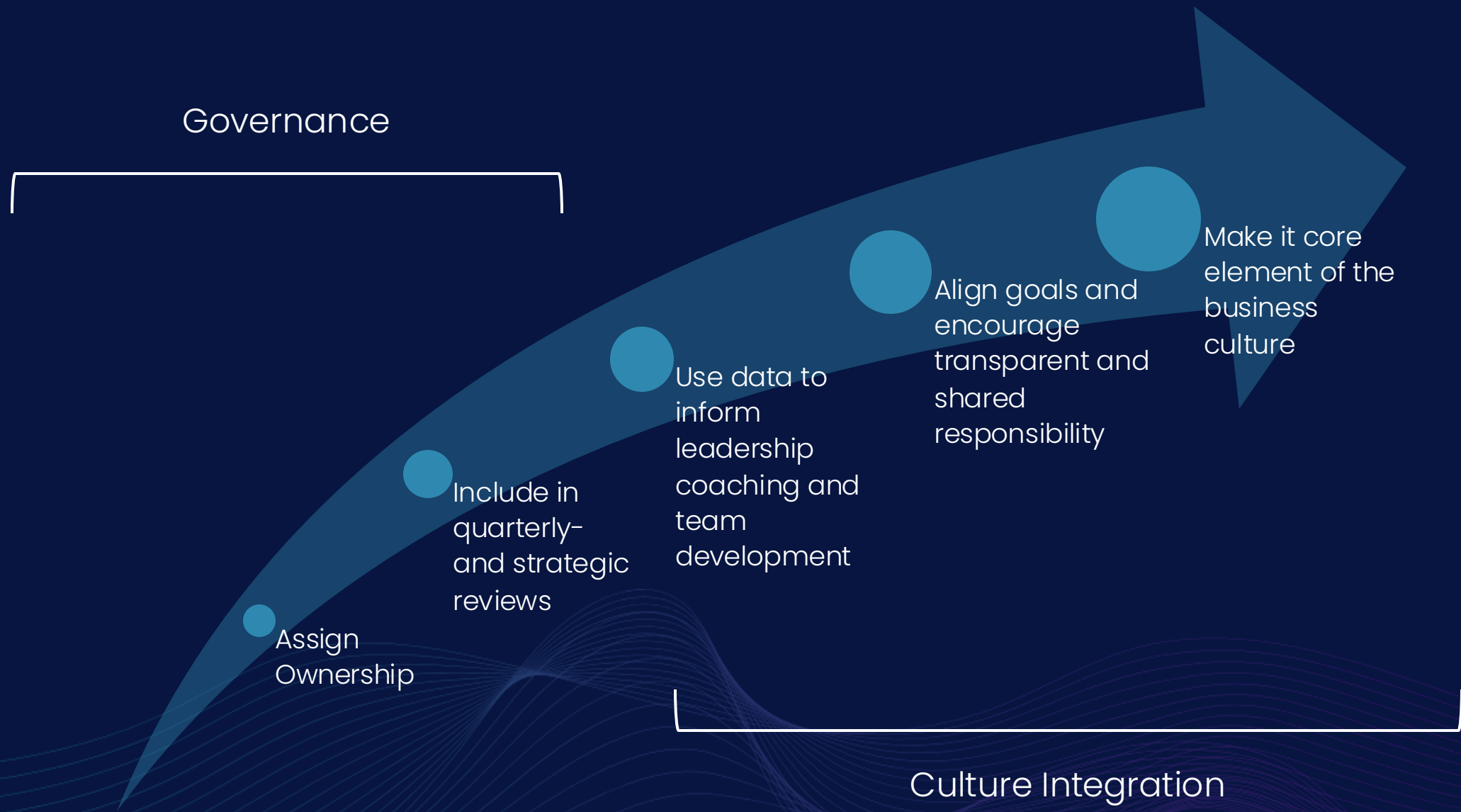


Multi-dimensional metrics

Measure & interpret across teams

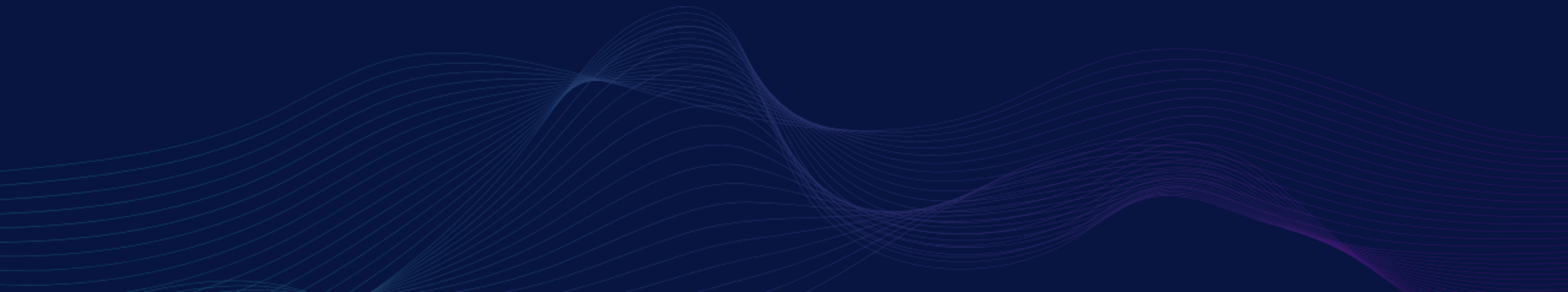
Improve by

- Running targeted workshops
- Adjust workloads and priorities
- Celebrate, share, and learn from success stories to reinforce positive behaviors
- Being consistent and deriving value from the process





Implications of ignoring the human side of software development





Reduced team moral
and engagement

Poor communication &
collaboration

Technically sounds
solutions failing to solve
real problems

Misunderstandings,
inefficient problem-
solving

Lower code quality &
maintainability

Misaligned products

Disconnected and
indifferent teams

Burnout, high staff
turnover, toxic work
culture

Leaders who overlook the human element may rely too heavily on deadlines, leading to unrealistic expectations and poor strategic choices



Ethical & Social Risks

Software built without considering human impact can reinforce biases, invade privacy or cause harm

Developers need space to raise ethical concerns and advocate for responsible use of technology



Resistance to change

Legal and compliance risks

Missed market opportunities

Loss of institutional knowledge

Ethical blind spots

Innovation Stagnation

Misuse of metrics

Inaccurate estimations

Rising product costs

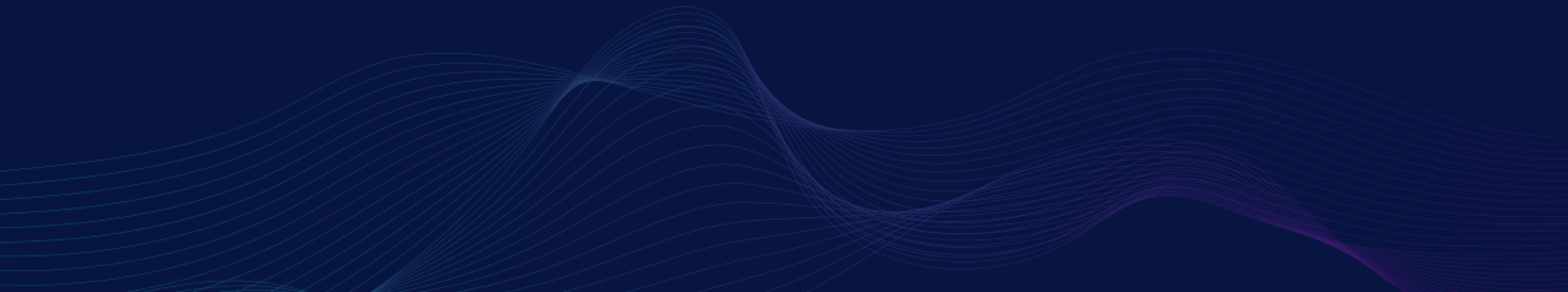
Inefficient processes

Poor stakeholder relationships

Difficulty scaling teams



In summary





Developers are not just coders, **THEY ARE PEOPLE**

COLLABORATION drives success

MOTIVATION fuels Productivity

CULTURE impacts quality

EMOTIONAL INTELLIGENCE enhances leadership

Software serves **HUMANS**

Successful solutions are built on technical excellence and psychological awareness





Questions / Comments

