Why SRE is the best way to improve efficiency in crises time?

Conf42 2023 – SRE
Fabio Alves do Nascimento

Age of Digital Transformation

- Virtualization

- Cloud Computing

- Waterfall → Agile

- DevOps

- Mobile

- Covid 19

- Quiet Quitting

- Devs with 2, 3 jobs simultaneously

- Web 3.0, MetaVerse, NFT

Age of Digital Efficiency

- Global economy recession
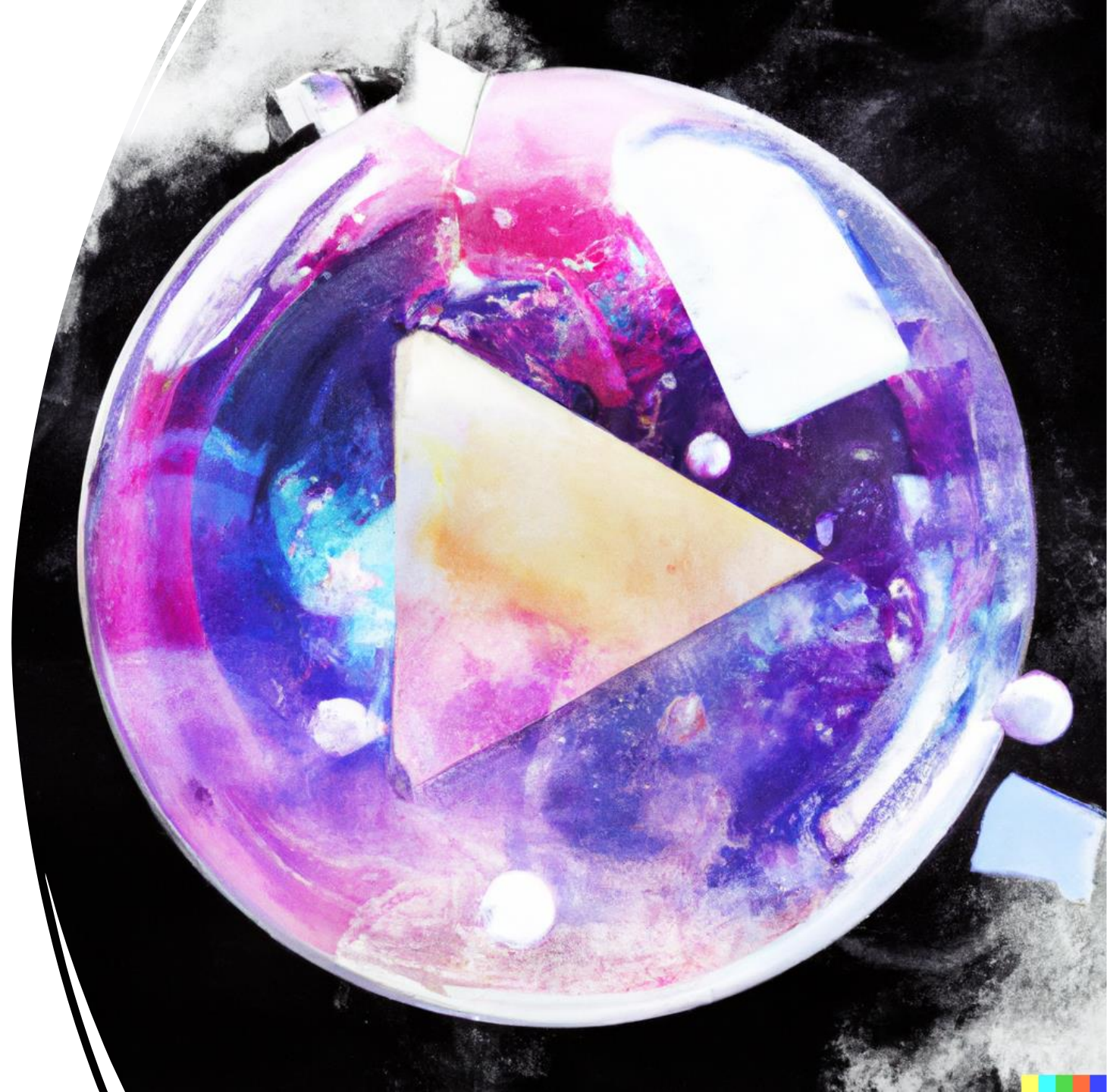
- Inflation

- Budget cuts

- Lay-offs

- Chat-GPT

Lay-offs

2023 is the year of efficiency

But what does it mean, in the end ?

- Cutting investment

- Search for savings on operations

- And some companies taking this moment to eliminate some people that was not performing well...
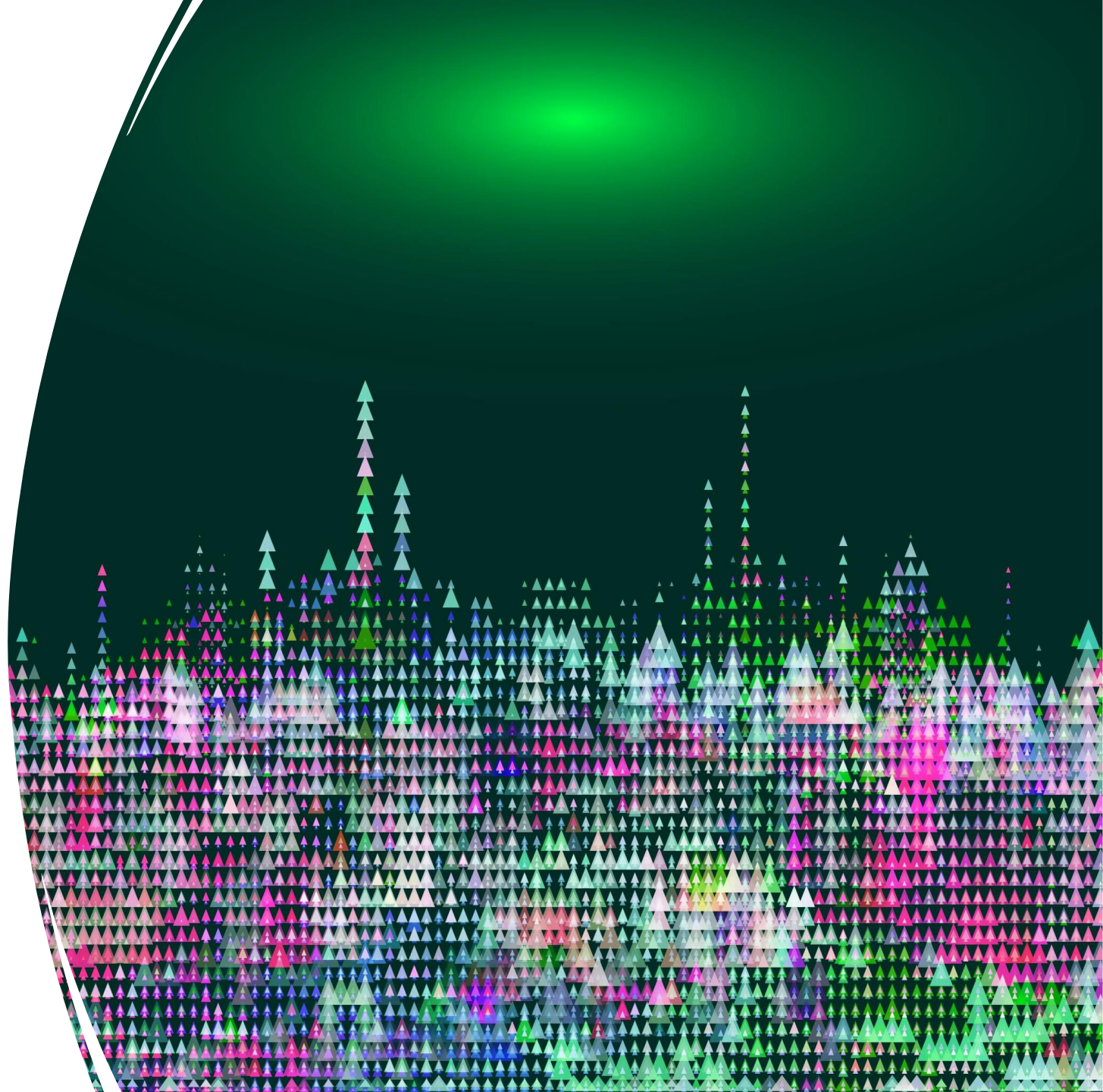
What is on the table for us?

- Efficiency

- Adopting AI – everybody talking about Chat GPT disrupting the world.

Why should companies invest on SRE ?

- Improved system reliability

- Faster incident resolution

- Increased agility

- Better collaboration

- Improved customer satisfaction

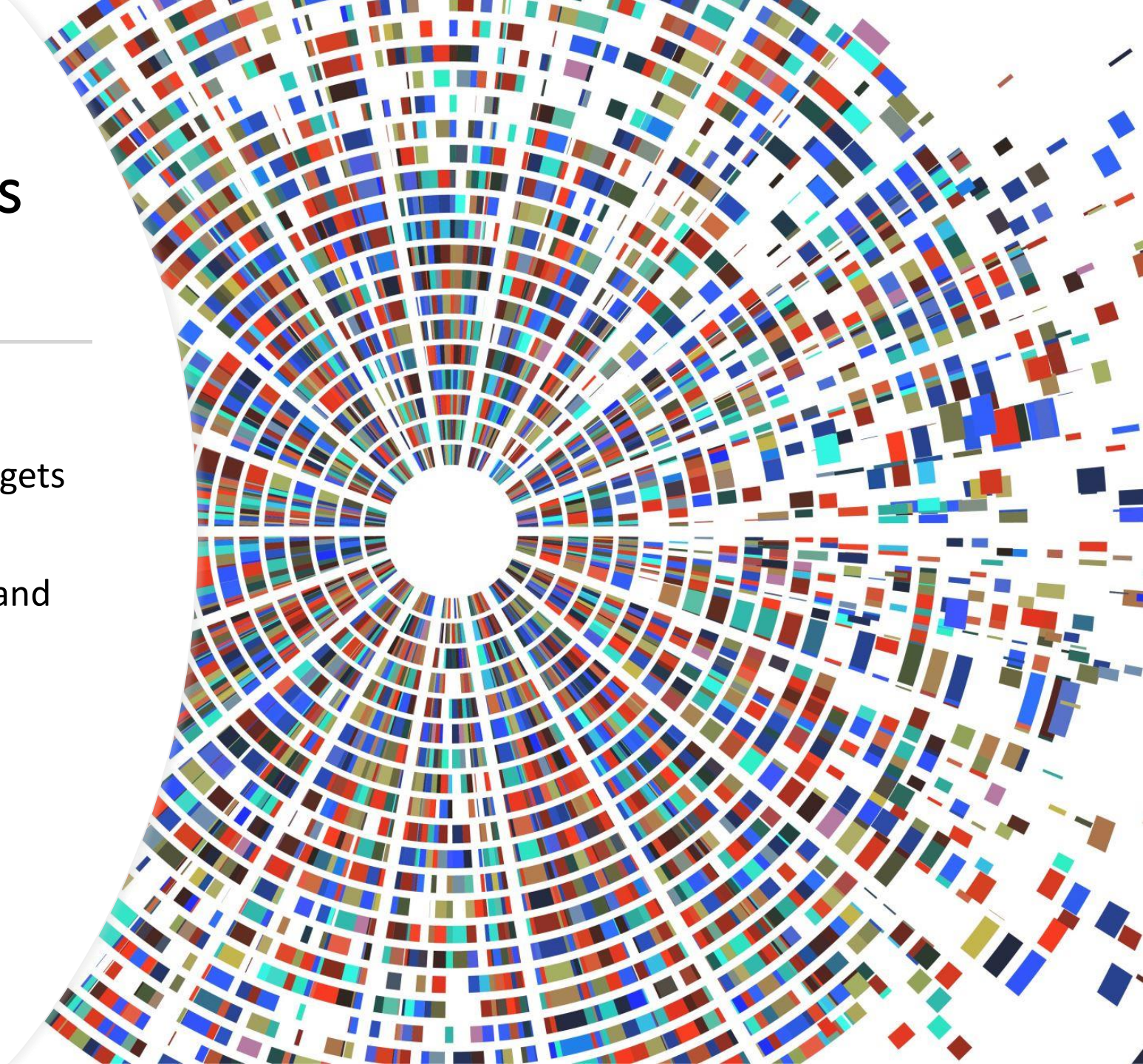# Why should companies invest on SRE ?

Adopting SRE can lead to several financial benefits for a company, including:

- Reduced downtime costs

- Increased efficiency

- Better resource allocation

- Improved scalability

- Reduced maintenance costs

Why even consulting firms should invest on SRE ?

Clients cancelling projects and cutting budgets

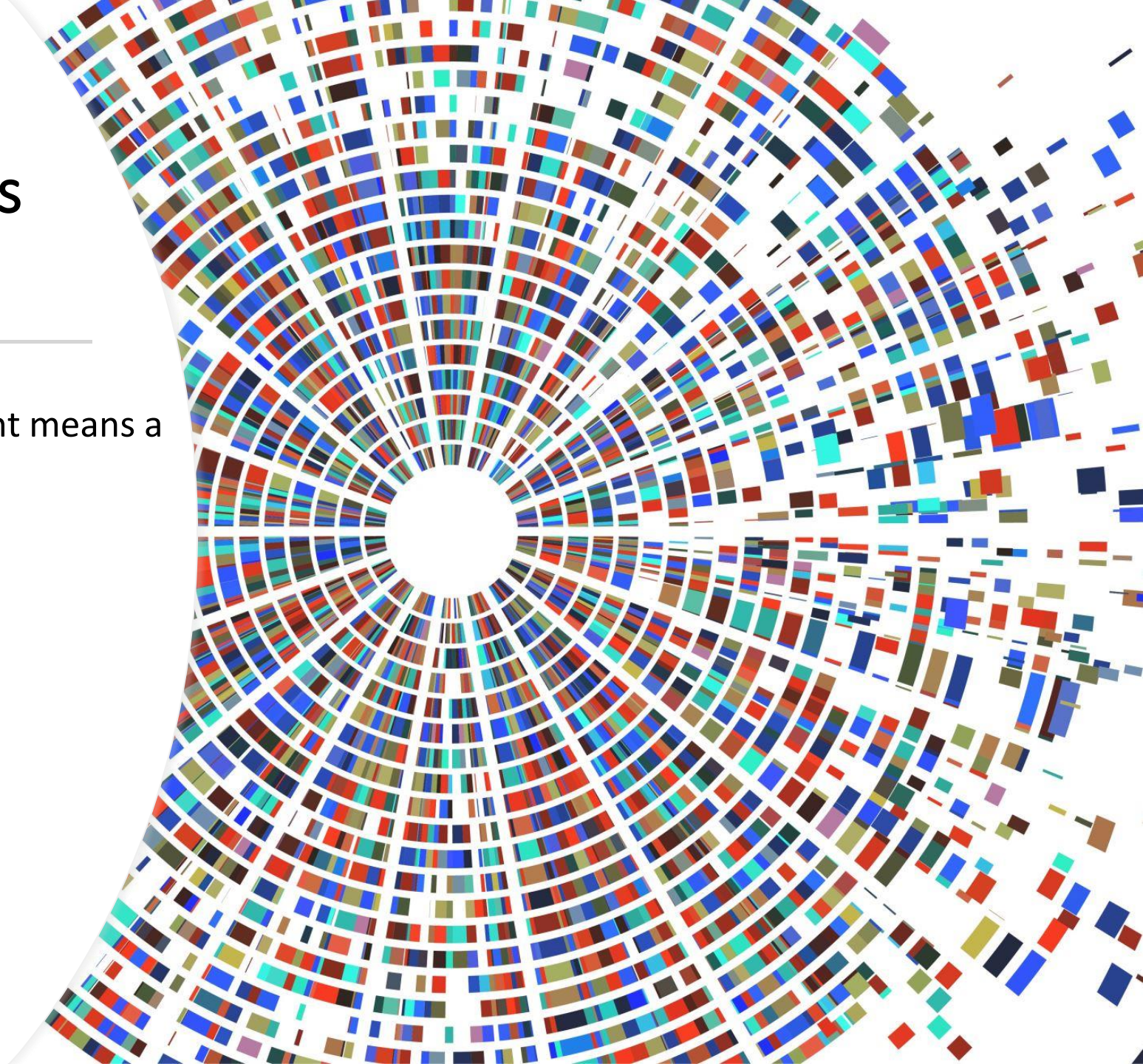mean directly impact on Consulting firms and

professional departments.

Why even consulting firms should invest on SRE ?

Adopting SRE practices in app development means a
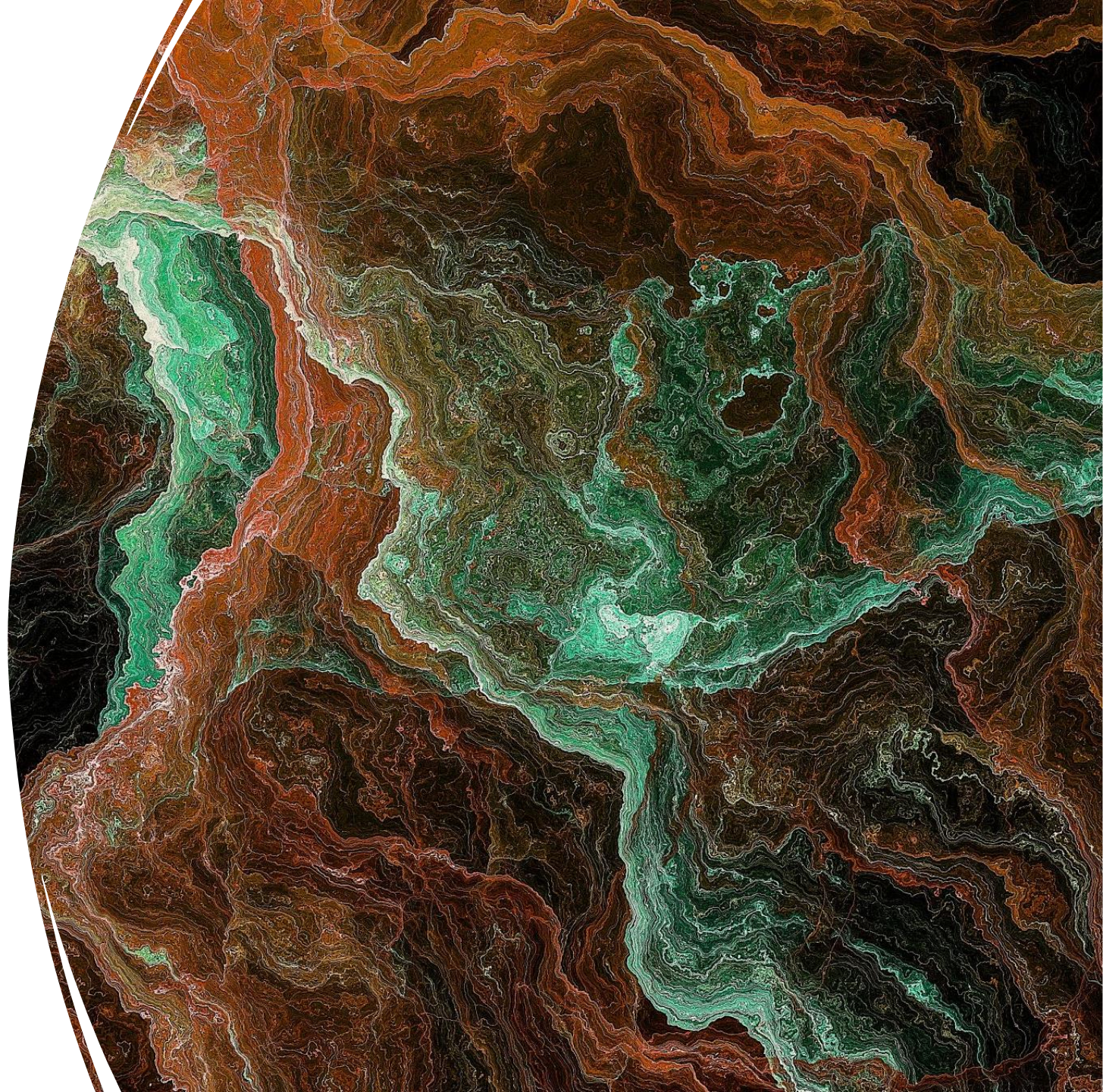
significant differentiation:

- Reducing MTTR

- Security improvement

- More reliable architecture
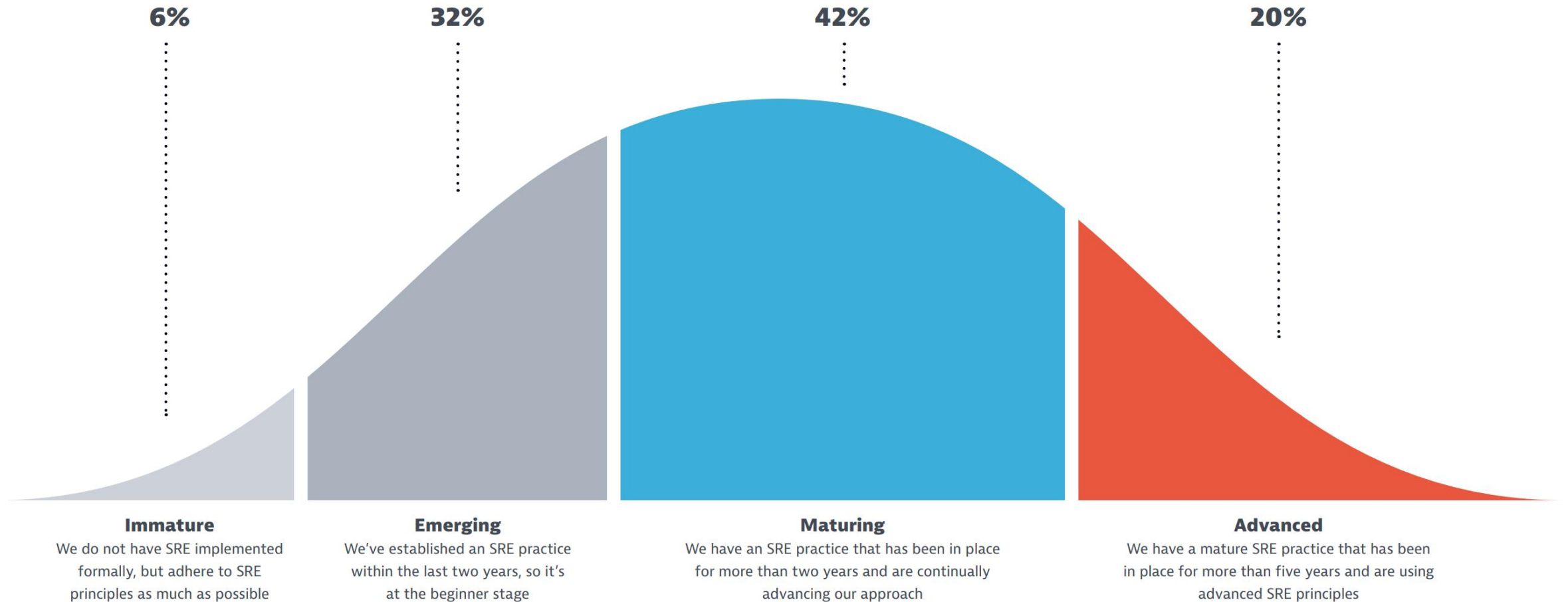
Quantitative results of adopting SRE
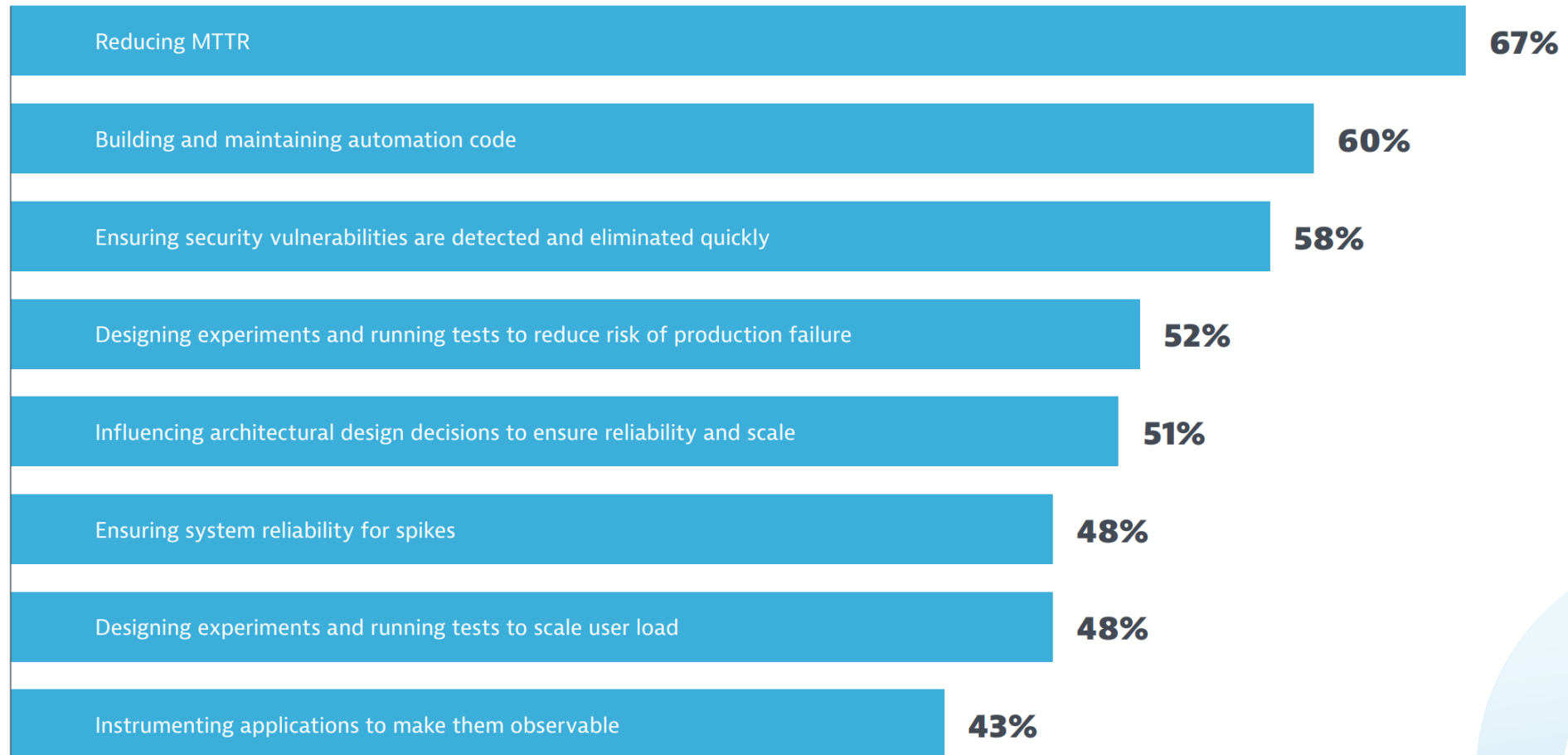
- Google

- LinkedIn

- Netflix

- Dropbox

Why do we have so many opportunities here ?

At what stage in the site reliability engineering (SRE) journey
is your organization currently?

| 6% | 32% | 42% | 20% |

Immature
We do not have SRE implemented formally, but adhere to SRE principles as much as possible

Emerging
We've established an SRE practice within the last two years, so it's at the beginner stage

Maturing
We have an SRE practice that has been in place for more than two years and are continually advancing our approach

Advanced
We have a mature SRE practice that has been in place for more than five years and are using advanced SRE principles

Some important information regarding SRE adoption

Which of the following tasks do SREs in your organization dedicate
the largest amount of their time to in an average week? (All responses)

Task	Percentage
Reducing MTTR	67%
Building and maintaining automation code	60%
Ensuring security vulnerabilities are detected and eliminated quickly	58%
Designing experiments and running tests to reduce risk of production failure	52%
Influencing architectural design decisions to ensure reliability and scale	51%
Ensuring system reliability for spikes	48%
Designing experiments and running tests to scale user load	48%
Instrumenting applications to make them observable	43%

Some important information regarding SRE adoption

Rising expectations and demands on SREs stretches their time increasingly thinly

Which of the following tasks do SREs in your organization dedicate the largest amount of their time to in an average week?

23%
Reducing MTTR

12%
Influencing architectural design decisions to ensure reliability and scale

12%
Building and maintaining automation code

11%
Designing experiments and running tests to reduce risk of production failure

11%
Ensuring security vulnerabilities are detected and eliminated quickly

10%
Designing experiments and running tests to scale user load

10%
Ensuring system reliability for spikes

9%
Instrumenting applications to make them observable

Some important information regarding SRE adoption

How does your organization evaluate service levels
for its applications and infrastructure?

81% We set **objectives and key results (OKRs) and key performance indicators (KPIs)**

75% We set **service level objectives (SLOs)**

65% We use **service level agreements (SLAs)** from service providers

58% We use **DevOps Research and Assessment (DORA) metrics**
(e.g., time to recovery and deployment frequency)

38% We use **simple monitoring tools** that are available

Some important information regarding SRE adoption

What are the biggest challenges your teams experience to **define and create SLOs?**

Data overload stands in the way of setting SLOs

Despite the growing use of SLOs 99% of SREs say there are challenges to defining and creating them. However, these challenges are mostly tactical, and therefore are relatively easy to solve with the right solutions in place.

For their more strategic challenges, SREs should invest time in keeping up to date with industry best practices through sources such as Google's SRE Handbook. Continually reviewing what competitors and peers are using as their benchmarks can help to develop a deeper understanding of SLOs.

99% of SREs say they encounter challenges when defining and creating SLOs.

64% Too many data sources, difficulty in synthesizing disparate data

54% Too many metrics, difficulty in finding the most relevant ones for a particular service

36% Monitoring tool doesn't allow me to easily define and track SLO performance history

22% Don't know what makes a good SLO

18% Don't know what metrics to track

18% Don't know how to evaluate an SLO

16% Don't know how/where to get started

Some important information regarding SRE adoption

Common SLOs to consider

Business SLOs (End User Centric)

Availability
Is the service available for users?

Engagement
How engaged are the users?

Conversion
What is the rate of users reaching my business goals?

User Satisfaction (ApDex)
What is the satisfaction level on the performance of my app from 0 - 1

Performance SLOs

Utilization
Average time resources are busy servicing work

Success Rate
Ratio of success vs total requests

Response Time
Time it takes to service a request

Saturation
Resources that are most constrained

Traffic
Measure of how much demand is being placed on your system

Recommended SLOs for mobile apps

Let's look at an example for getting started with SLOs for mobile apps. SREs should combine a mix of business and performance SLOs to ensure they get the balance right and are measuring the things that matter most to the success of their app and its outcomes for the business.

App Adoption
Ratio of daily users vs total users

Availability
Rate of requests with a valid response

App Rating
Ratings based on Android or iOS Store

Response Time
Rate of login requests faster than 100ms

Crashes
Crash rate on officially supported devices

Success Rate
Rate of successful requests with HTTP 500

Some important information regarding SRE adoption

How do you identify the targets for each of your SLOs?

26% We estimated what felt like the right target **based on end user experience**

24% Our solution guides us toward smart SLO thresholds **based on historical data and industry standards**

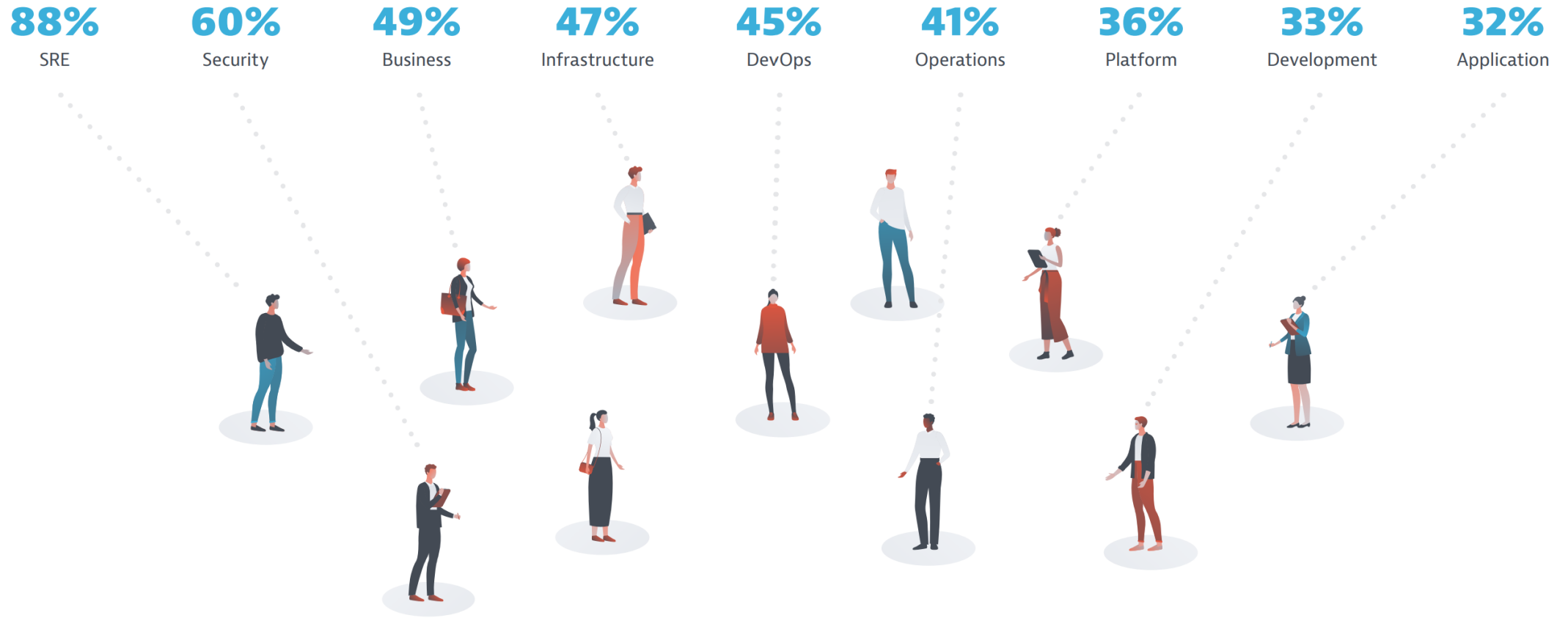**20%** We base them on **whatever our system is doing today**

18% They are **dictated by a senior manager** in the IT department

11% We estimated what felt like the right target to be aiming for **based on gut feel**

1% **We don't know** where the targets came from, we just need to adhere to them
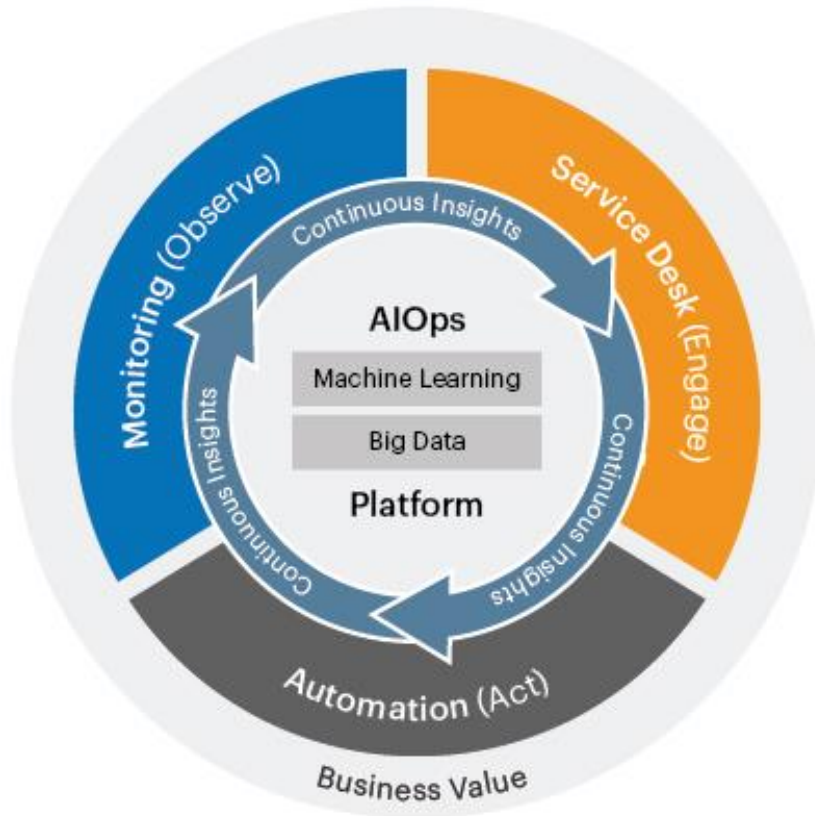
Some important information regarding SRE adoption

Which team/s take responsibility for driving SLO adoption
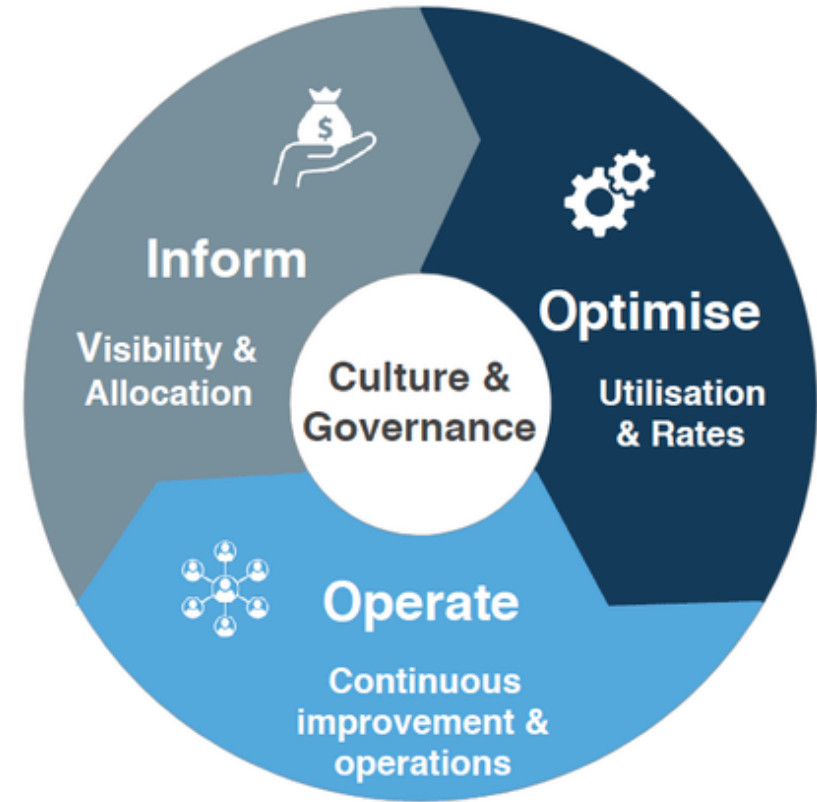and managing SLOs across your organization?

| **88%** | **60%** | **49%** | **47%** | **45%** | **41%** | **36%** | **33%** | **32%** |
| SRE | Security | Business | Infrastructure | DevOps | Operations | Platform | Development | Application |

Other opportunities

AIOps

FinOps

Key takeways

- SRE increase commitment and morale of the team

- Beside the obvious qualitative benefities, SRE generates quantitative returns

- Increase agility

- For Consulting firms, it is a differentiantion

- Define and work for achieving SLOs should be the main objetive in adoption