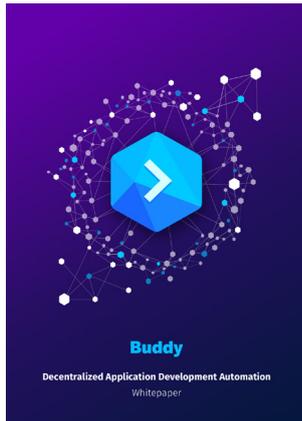# Buddy

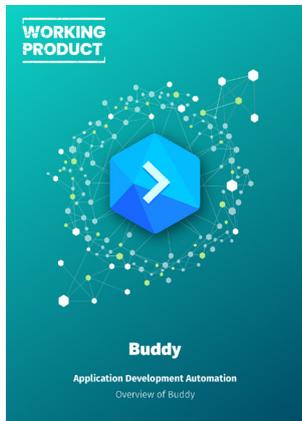## Application Development & Deployment Software

Market Analysis

Recommended reading

Whitepaper

How Buddy with Automation GRID, DevOps Marketplaces & BlockchainOps wants to puts application & Blochckain development on autopilot and makes building apps scalable

About Working Product

Why Buddy is a winning development automation platform that serves over 7,000 developers every day across 120+ countries. Featured customers: INC. Magazine, CGI.com, ING Bank.

App Development Automation: a DevOps Outline

Application development automation & deployment, here called DevOps, is a set of practices and cultural values proven to help organizations of all sizes improve their software release cycles, software quality, security, as well as the ability to get rapid feedback on product development.

DevOps practices lead to a higher IT performance that delivers improved business outcomes, as measured by productivity, profitability and market share. Teams can test, deploy and change their systems without depending on other teams for additional work, resources, or approvals, and with less back-and-forth communication.

| Benefits | > | Market & ROI | > | Problems & solutions | > |

Benefits of DevOps

The benefits of DevOps reach far beyond the definition of IT, bringing a positive impact to many organizations' domains:

Technical

- Automated testing and deployments
- Quicker feedback from clients
- Elimination of bottlenecks & faster resolution of problems
- Code changes deployed faster
- Quicker recovery from downtimes
- Less complexity to manage

Cultural

- Increased collaboration between development and operations teams
- Happier, more productive teams
- Higher employee engagement
- Opportunities for professional development
- Transparency in sharing knowledge and skills

Business

- Faster delivery of features & better customer satisfaction
- Stable operating environments
- Improved communication and collaboration
- More time innovating and less fixing and maintaining
- Quality of products or services provided
- Better employee loyalty, as measured by employee Net Promoter Score (eNPS)
- Easier achievement of organizational and mission goals

Hard data shows that the impact of DevOps on an organization's operations is tremendous:

46×	**96×**	**5×**
MORE FREQUENT DEPLOYS	FASTER RECOVERY TIMES	LOWER CHANGE FAILURE RATES

- High-performing organizations deploy 46× times more frequently with 440× times faster lead times, recover 96 times faster, and have 5× lower change failure rates[1].
- Container users found that, on average, it took 20% less time to recover than organizations that do not use containers[2].
- High-performing organizations spend 22% less time on unplanned work and rework. They are able to spend 29% more time on new work, such as new features or code[3].
- DevOps teams increased from 16% in 2014 to 19% in 2015 to 22% in 2016 to 27% in 2017[4]
- IT with enabled DevOps (increased performance) doubles the chances of exceeding own goals for profitability, market share and productivity[5]
- Case study: the HP LaserJet Team with DevOps increased the available time for developing new features by 800% (from 5% to 40%)[6]

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[1] Dora – State of DevOps Report 2017
[2] DZone members survey
[3] Dora – State of DevOps Report 2017
[4] Dora – State of DevOps Report 2017
[5] Widener, S.K. (2007). An empirical analysis of the levers of control framework. Accounting, Organizations and Society
[6] https://itrevolution.com/the-amazing-devops-transformation-of-the-hp-laserjet-firmware-team-gary-gruver/
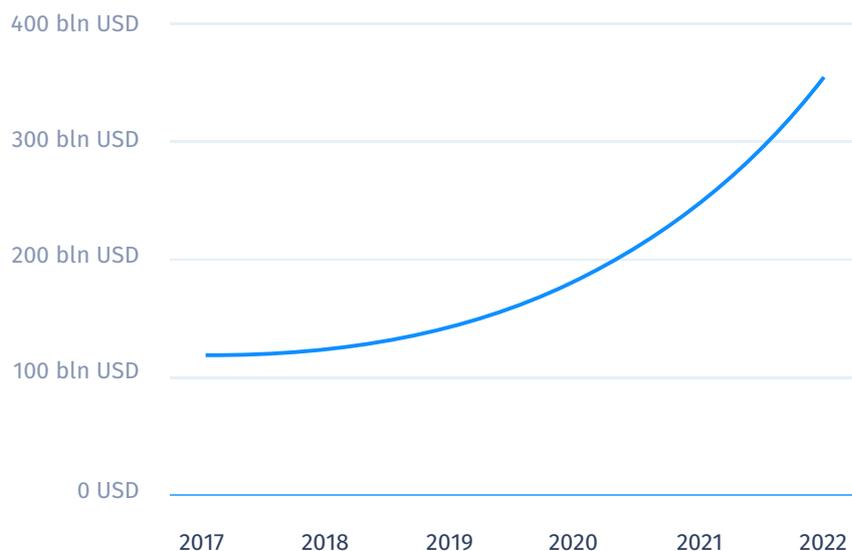
Market

Size

From 2017 until 2022, intensive growth in the demand for application development and deployment software is forecasted at a phenomenal CAGR of 25.6%, reaching **$346 billion**[7].

Market Growth

Recently the development operations reached *escape velocity* as the year 2017 was acclaimed *The Year of DevOps*, with 50% of organizations adopting deployment automation.
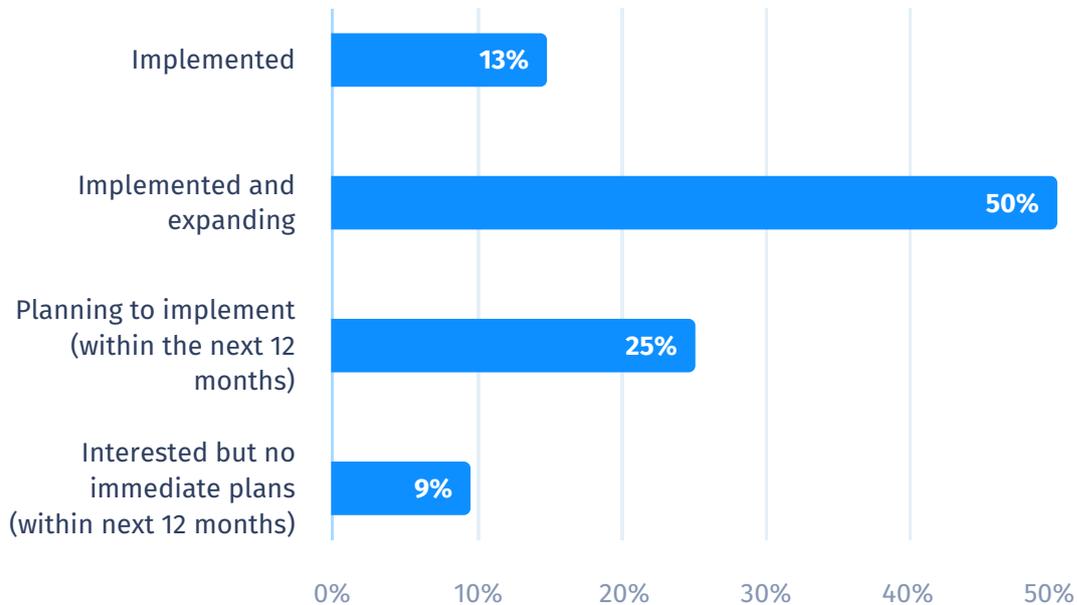
7 https://www.transparencymarketresearch.com/application-development-deployment-software-market.html
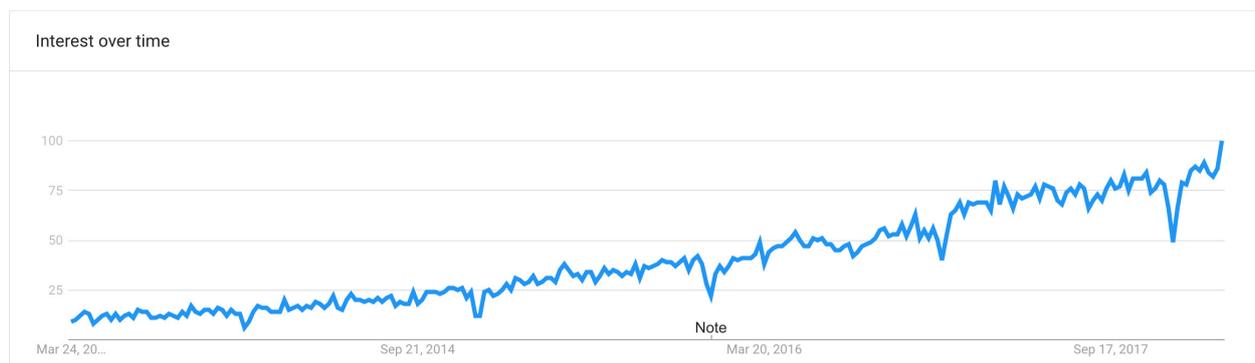
What we observe now is that discussions with clients have shifted: from "What is DevOps?" to "How do I implement it at scale?"

"Has your organization implemented DevOps? Where does it stand in relation to DevOps"

Category	Value
Implemented	13%
Implemented and expanding	50%
Planning to implement (within the next 12 months)	25%
Interested but no immediate plans (within next 12 months)	9%

The DevOps momentum is occurring within all industry sectors. Healthcare, banking, insurance and manufacturing sectors are leading the charge – all are leveraging DevOps to support their business transformation towards agility and speed.

— Forrester Research

Although many large organizations are in the experimentation stage with single or multiple pilots – they are all transitioning toward DevOps across their entire enterprise, making 2018 *The Year of Enterprise DevOps.*

Market Predictions

Application Development & Deployment

- The Application Development & Deployment Software market will increase to $346 billion by 2022[8]
- DevOps Engineers will be the highest paid in the market and 60% of all IT jobs will be cloud-based by 2020[9]
- By 2020, half of the CIOs who have not transformed their teams' capabilities will be replaced from their teams[10]
- Automation and continuous testing will be even more important as companies turn from cloud adoption to cloud optimization
- "Containerization" will be in the spotlight joining the "A" list
- Multi-cloud strategies will become the norm[11] for reducing downtime and risk

Blockchain-related Technology

- The global Blockchain technology market size is expected to grow from $411.5 million in 2017 to $7.7 billion by 2022[12] and $9.6 Billion[13] by 2024, at a CAGR of 79.6%
- Blockchain-as-a-Service to fuel the growth of this market
- Blockchain will be more and more often embedded in applications serving as the trust layer
- The **private** Blockchain segment will lead the global Blockchain market, holding more than half of the total market share[13]

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[8] https://www.transparencymarketresearch.com/application-development-deployment-software-market.html
[9] https://www.forbes.com/sites/louiscolumbus/2017/04/29/roundup-of-cloud-computing-forecasts-2017/#1897dbd531e8
[10] https://www.gartner.com/binaries/content/assets/events/keywords/infrastructure-operations-management/iome5/gartner-predicts-for-it-infrastructure-and-operations.pdf
[11] https://blog.heptio.com/perspective-on-multi-cloud-part-3-of-3-availability-and-multi-cloud-5018762d2702
[12] https://www.researchandmarkets.com/research/3kmxwc/blockchain_market
[13] https://www.esticastresearch.com/press-release/blockchain-market-forecast

ROI of DevOps

The ROI in DevOps can be counted on the basis of expected savings in time achieved by but not limited to reducing unplanned work, reducing service downtime, and finally reducing time spent on bug-fixing. Gaining considerable revenue is practically impossible without continuously developing new features and improving product quality.

It has been estimated that DevOPS teams spend about 4.9 hours/week more time per employee on delivering new features when compared to a standard IT team. They also spend an estimated additional 2.3 hours/week on improvements which brings it to 7.2 hours in total.

When discussing DevOps and the revenue they can generate, 3 types of teams can be distinguished[14]:
High-performing teams spend the least amount of time on unplanned work and rework (21%). This way they have more time that can be devoted towards developing new features (49%) that might prove beneficial to business.

Low-performing teams also spend less time on rework (27%) and more on new features (38%). This is probably because they tend to disregard critical updates in favor of pushing new features, which, in the long-term, may disrupt the balance between reliability and product competitiveness.

Medium performing teams, on the other hand, rework and deploy more frequently (32%). They deliver fewer new features than low-performing teams (34%), but a rapid deployment cycle allows them to experiment more often and get quicker feedback in cases of failure.

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[14] Dora – State of DevOps Report 2017

Main Obstacles in Revenue Generation in IT-Oriented Business

Downtime

Cost of downtime = Deployment frequency × Change failure rate × Mean time to recover × Hourly cost of outage.

Still, if you keep controlling your business and work on reducing the downtime, you can gain savings at the following rate:

	HIGH PERFORMERS	MEDIUM PERFORMERS	LOW PERFORMERS
Large technical organization (40,000 engineers)	40,000 staff $105,000 salary 1.5 benefits 11% excess rework **= $693M**	40,000 staff $105,000 salary 1.5 benefits 22% excess rework **= $1.386B**	40,000 staff $105,000 salary 1.5 benefits 17% excess rework **= $1.071B**
Large organization that relies on in-house software (8,500 engineers)	8,500 staff $105,000 salary 1.5 benefits 11% excess rework **= $147.3M**	8,500 staff $105,000 salary 1.5 benefits 22% excess rework **= $294.5M**	8,500 staff $105,000 salary 1.5 benefits 17% excess rework **= $227.6M**
Medium-to-large technical organization (2,000 engineers)	2,000 staff $105,000 salary 1.5 benefits 11% excess rework **= $34.65M**	2,000 staff $105,000 salary 1.5 benefits 22% excess rework **= $69.3M**	2,000 staff $105,000 salary 1.5 benefits 17% excess rework **= $53.55M**
Small-to-medium businesses & non-technical enterprises (250 engineers)	250 staff $105,000 salary 1.5 benefits 11% excess rework **= $4.33M**	250 staff $105,000 salary 1.5 benefits 22% excess rework **= $8.66M**	250 staff $105,000 salary 1.5 benefits 17% excess rework **= $6.69M**

Unplanned/Excess Work

Cost of excess rework = Technical staff size × Average salary × Benefits multiplier x Percentage of technical staff time spent on excess rework

Where the excess work includes reworking of the code, unplanned work and system failures.

Eliminating excess work can bring these kinds of savings:

	HIGH PERFORMERS	MEDIUM PERFORMERS	LOW PERFORMERS
Deployment frequency	1,460 deploys yearly	32 deploys yearly	7 deploys yearly
Change failure rate	7,5%	38%	23.5%
Mean time to recover	1 hour	24 hours	24 hours*
Outage cost	$500,000/hr	$500,000/hr	$500,000/hr
Total cost of downtime per year	$54.75M	$145.92M.	$19.74M
Downtime cost per deployment	**$37.5K**	**$4.56M**	**$2.82M**

*   Note: Low performers take longer on average to recover (at a statistically significant level), but had the same median MTTR as the medium performers.
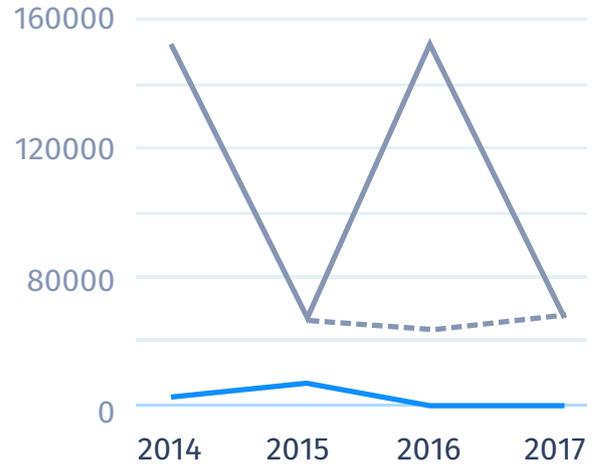
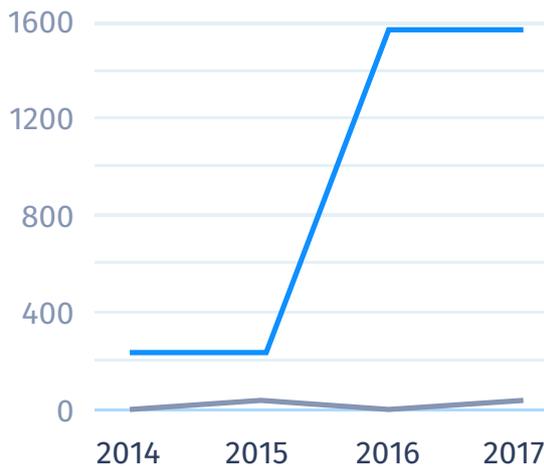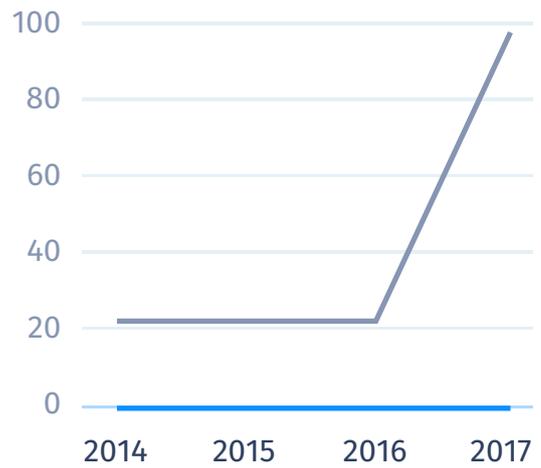# DevOps High vs. Low Performers

Change failure rate (percentage)
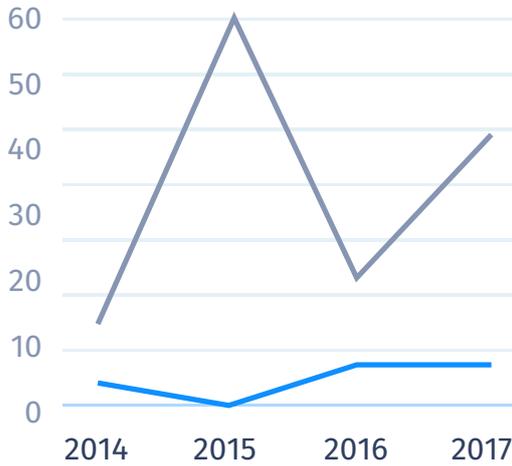
Change lead time (minutes)

Deployment frequency (# of deploys per year)

Mean time recovery (hours)

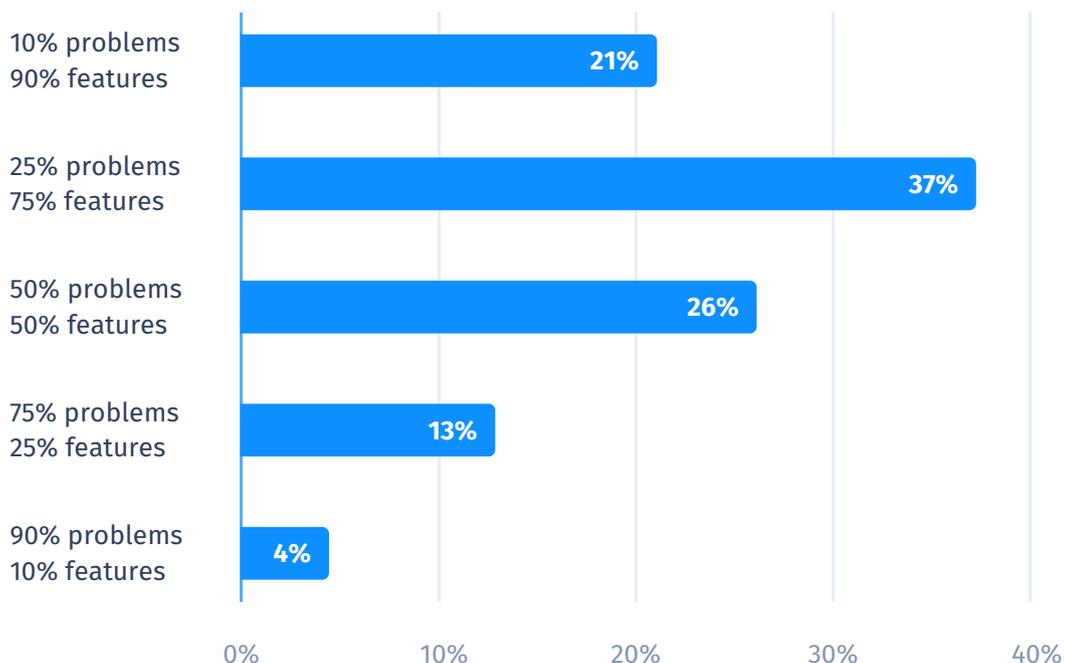— High performers ——— Low performers ------- Error

Time Wasted on Problem-Solving

This concerns advanced problems with production. The 2013 Zend Developer Pulse survey showed that a majority of developers (around 80%) spend about 25% of their time on solving problems. It has also been estimated that most developers spend around 30-40% of their time on fixing problems instead of implementing new functions[15]. Without a doubt, this kind of waste of time can lead to great losses.

The graph below illustrates dependencies between the time spent on problem-solving and delivering new features.

How much of your time is spent on problem resolution and maintenance vs. developing new functions?

10% problems 90% features	21%
25% problems 75% features	37%
50% problems 50% features	26%
75% problems 25% features	13%
90% problems 10% features	4%

0%   10%   20%   30%   40%

It can be seen that nearly 80% of developers spend 25% or more of their time on solving problems. This time could be devoted to delivering new features instead, which will certainly bring greater benefits.

[15]   http://static.zend.com/topics/Zend-Developer-Pulse-report-Q2-2013-0523-EN.pdf

In general, DevOps leads to compelling ROI and brings greater value across all areas of business operations, thanks to:

- Reduction in downtime and unplanned work
- Re-thinking and prioritizing of development processes
- Faster delivery of new features
- Releases with fewer bugs
- Experimenting
- Improvements in data collection and analysis
- Improvements to websites
- Improvements to services
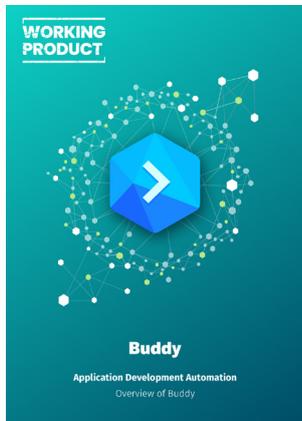- Greater customer retention
- More referrals

Recommended reading
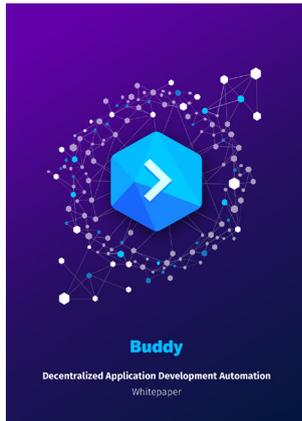
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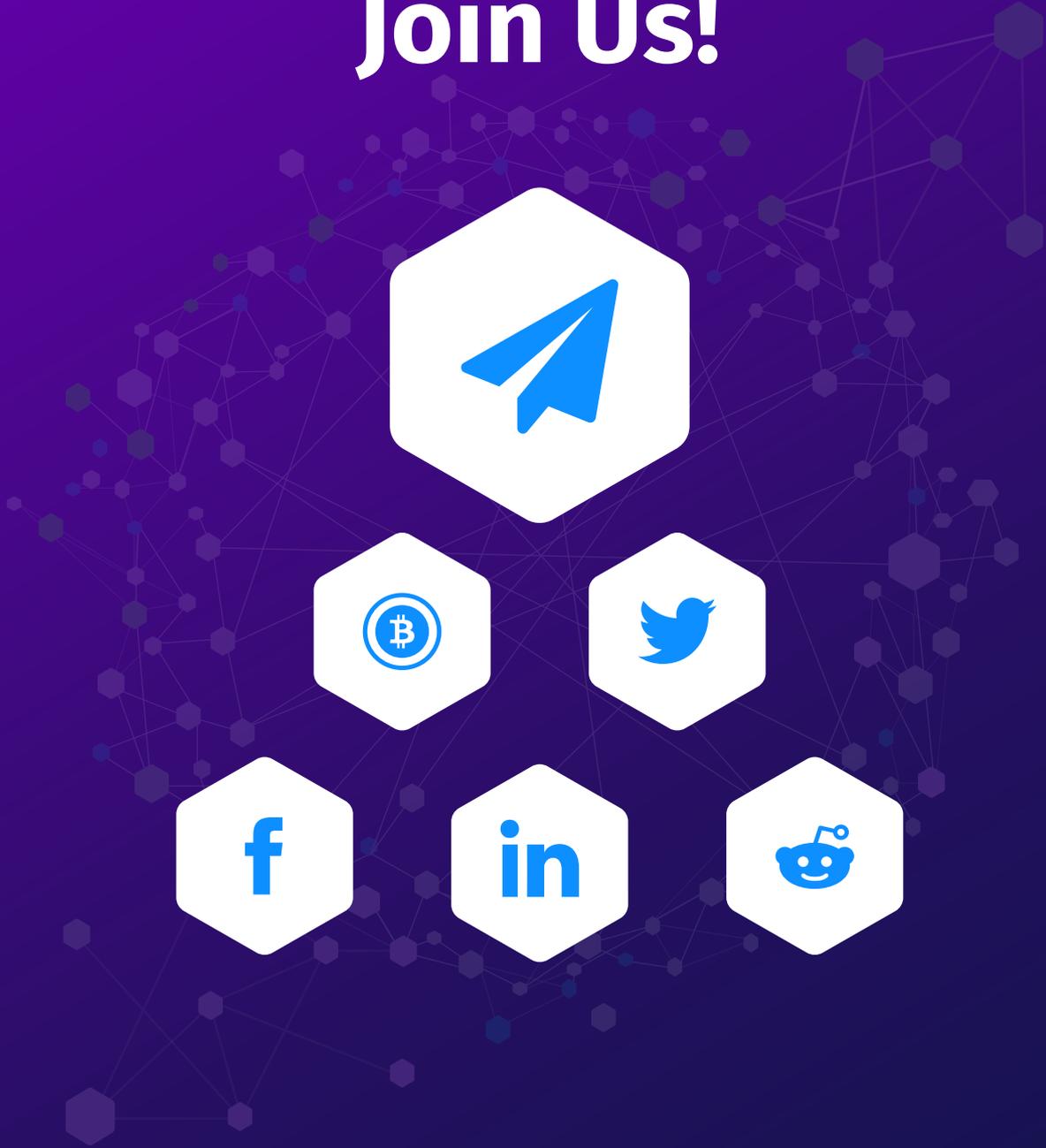
About Working Product

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Thank you!