

Introduction to Comparative Agile Measurement SystemSM (CAMSSM)

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Executive Summary

Now when Agile software development is becoming very popular globally due to its proven effectiveness in reducing the cycle between idea generation and realization, minimizing risk of project goals' misunderstanding, decreasing costs of addressing mistakes in software development and so on, many businesses need to:

- Monitor own adherence to Agile practices
- Measure efficiency of their Agile teams (both onshore and nearshore / offshore)
- Calculate Return on Investment (ROI) on their Agile Scrum education, etc.

As de facto there are no industry standards for measuring Agile effectiveness, it does not matter how good companies think they are at Agile unless they compare themselves against their peers and competitors.

After several years of consulting with the Agile development and project management gurus and thorough analysis of Agile behavior patterns from more than 80 clients' own nearshore Agile software development teams, Ciklum has developed a unique tool to measure Agile effectiveness – the Comparative Agile Measurement System (CAMSSM).

The goal of this white paper is to introduce CAMSSM to a broad community of Agile practitioners and evangelists as well as Agile novices and to show on real-life cases how CAMSSM works in a distributed software development environment.

This white paper has a specific focus on:

- Explaining the needs for such an Agile gauge tool among Agile adopters
- CAMSSM usage for a distributed Agile development
- Key models of delivering CAMSSM results
- How CAMSSM is able to facilitate a significant improvement of the identified Agile adherence gaps





Is this White Paper right for you?

It is, if one or more of the following statements are true:

- ✓ You're an Agile evangelist
- ✓ You have a distributed Agile development team and want to know how to measure its productivity
- ✓ You're planning to set up a distributed development team and thinking proactively about how you'll be measuring your team's productivity
- ✓ You're wondering how good your software development team is at Agile software development
- ✓ You're an IT guru (or just a geek) interested in Agility measurement tools
- ✓ You're a journalist or a blogger writing about Agile development and project management (PM)
- ✓ You're an Agile Project Manager or a SCRUM Master
- ✓ You've invested some money and resources into Agile Scrum education within your company and need an effective tool to measure your ROI
- ✓ You're just a trend-watcher interested in Agile development and team productivity metrics

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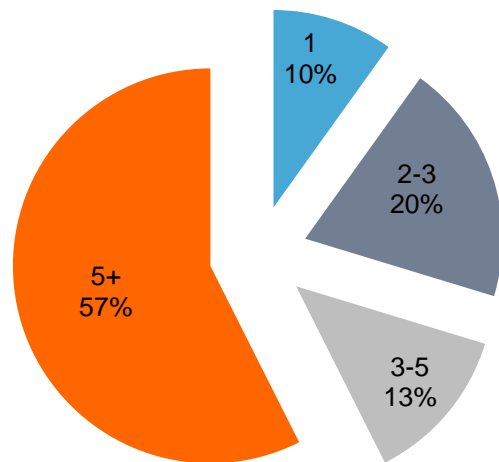


Introduction

In its early years [Agile](#) was closely associated with small software development teams working in the same room. In 2006 Agile was mainly adopted by companies of up to 20 people in size¹, and five years later half of all Agile adopters globally were already mid- to large organizations².

According to the 2011 State of Agile Development Survey by [VersionOne](#), 60% of companies already use Agile on half of their corporate projects and 27% - on 76% to 100% of their projects. With such an increasing popularity of Agile practices and a rapidly changing Agile environment,

Figure 1: Agile adoption across distributed teams of different size (est. 2011)



¹ [Version One Agile Survey](#), 2011

² [Ibid.](#), 2011

having an entire team in the same room or even in the same building is a luxury that not many companies can afford. As a result of this, a lot of Agile projects are currently distributed among two and more teams, both onshore and across borders (see Fig. 1).

While only 5% of organizations plan to start adopting Agile in order to improve their distributed teams management, 41% of those who actually implement it say Agile does help them to better manage their teams³.

Agile is becoming more popular among the outsourcing companies, too. The number of outsourcers using and/or planning to continue using Agile on their projects more than doubled in 2011, compared to 2010⁴ (see Fig. 2).

The Agile processes, having three times the success rate of the traditional Waterfall method and a much lower percentage of cost and time overruns, are more than likely to become **“the universal remedy for software development project failure”** in the years to come⁵.

However, implementing Agile does not necessarily mean being Agile. With the growing number of organizations that implement or plan to implement Agile in the future, the question arises – **How good are they at doing Agile?** And since de facto there are no industry standards for measuring

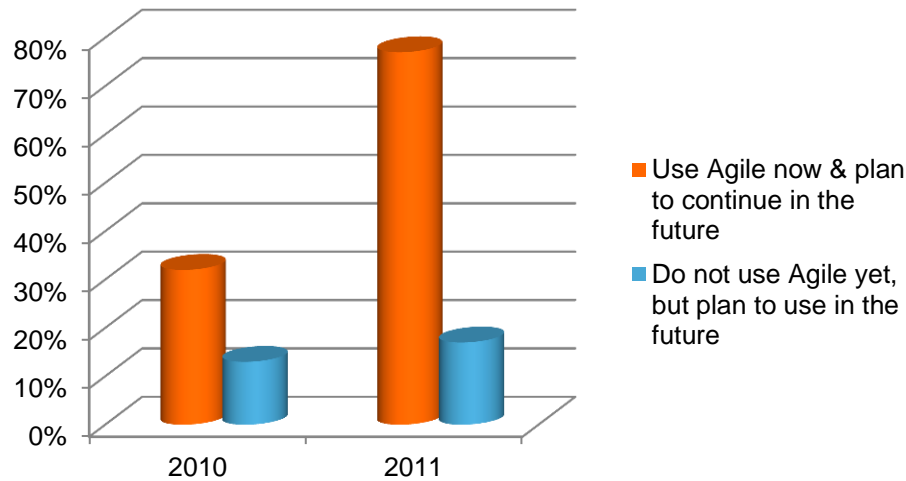
³ [Ibid.](#), 2011

⁴ [Ibid.](#), 2011

⁵ [Mountain Goat Software](#), 2011



Figure 2: Agile Adoption On the Outsourced Projects: 2010 vs. 2011



Agile effectiveness, it doesn't matter how good you think you are at Agile unless you compare yourself against your peers and competitors.

Ciklum has developed a unique way of comparing Agile teams against 80+ distributed (onshore + nearshore) teams. It is called **Comparative Agile Measurement System (CAMSSM)**.

CAMSSM: Background

Currently, Ciklum services 165+ clients' [own nearshore software development teams](#). Most of these teams do some kind of [SCRUM](#) and Agile development and are in fact the [distributed setups](#) with the nearshore teams being "organic" extensions of the onshore ones. Back in 2010 Ciklum realized how difficult it was for its clients to become Agile in multiple locations and decided to help them to:

- Determine whether their Agile software development and project management (PM) processes are effective enough to add a long-term value to their business, and
- Improve Agile teams' efficiency and flexibility

To be able to develop a working solution and create real value for clients, Ciklum had to:

- Visualize the productivity gains
- Identify Agile best practices from the same-size, same-industry and same-technology projects, and
- Structure knowledge sharing processes



To do the above, Ciklum had to answer the following questions:

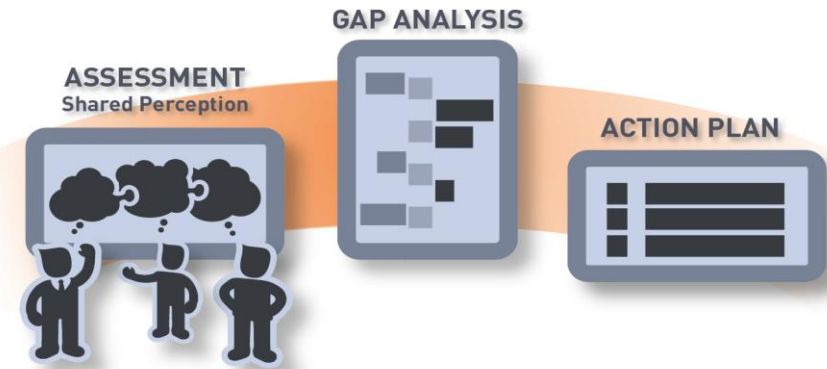
1. What is the ideal Agile adoption pattern to compare the clients' teams to?
2. What should be measured - **teams' adherence to plans and processes** or **productivity of techniques, tools and people**?

As Ciklum looked deeper at those questions, it realized that:

1. The ideal Agile adoption pattern is something fictional rather than real-life and, therefore, it is totally senseless and useless to compare one's team performance to the ideal pattern. It is much more rational to compare the team against its industry peers and/or competitors to determine if it is performing better or worse.
2. It is important to measure each client team's adherence to Agile processes / best practices **AND** velocity of project's execution to identify the productivity gaps of each distributed setup, collect the right data and put it into development of further guidelines for efficiency improvement (see Fig. 3).

Figure 3: Ciklum Comparative Agile Measurement System (CAMSSM) Basics

COMPARATIVE AGILE MEASUREMENT SYSTEM (CAMS)



As Ciklum began investigating the existing Agility metrics, it bumped into a very interesting and inspiring [Comparative Agility™](#) assessment system developed by Michael Cohn of [Mountain Goat Software](#) and Kenny Rubin of [Innolution](#). This assessment system is based on a concept “**determine how good you are compared to your competitors**” and is a set of more than 100 questions divided into 7 dimensions: **teamwork, requirements, planning, technical practices, quality, culture and knowledge creation**. These 7 dimensions represent broad classifications of changes to be expected of a team or organization as it becomes more Agile. However, after Ciklum ran a pilot assessment of 10 to 15 clients' distributed teams, identified the Ciklum average score and compared the



results against the Comparative Agility™ assessment system's database of around 4,000 teams, it has realized that the Comparative Agility™ was not the solution it could use effectively across numerous client teams.

Namely, Ciklum had two major concerns:

1. With the Comparative Agility™ system you can compare your team, project or organization against a total set of collected responses against responses filtered from organizations in the same industry, with the similar types of projects or the similar lengths of Agile experience. However, Ciklum realized that each person within a team might have his/her own perception of problems, which is quite natural, as people are different and have different mindsets. Thus, Ciklum had to figure out how to collect a wide array of different perceptions from all team members, puzzle them together and achieve a common team vision from various perspectives.
2. Comparative Agility™ is based on the online survey that anyone can access and fill out. As it is not known who exactly has completed the survey – whether it has been a Project Manager, a Scrum Master, an IT Manager or a junior team member – the quality of responses is very questionable and not fully reliable. Therefore, Ciklum realized it would need a “quality assurance” consultant to check the quality of the survey responses and double-check it with some leading questions, exercises and other tools.

After continuous direct discussions with Michael Cohn and Kenny Rubin, Ciklum Agile consultants have modified and adjusted the Comparative Agility™ framework with the considerations for the above concerns to focus specifically on distributed software development teams. That is how Ciklum's Comparative Agility Measurement SystemSM (CAMSSM) has been created.

[Ciklum Services & Consulting](#) started using CAMSSM back in 2010 in order to foster performance competition among Ciklum Client Own Development Teams. However, at first they did not involve the entire teams in the analysis and only asked Project Managers, SCRUM masters or Team Leads to fill out the CAMSSM questionnaire. It was eventually realized it might have some side effects. For instance, when certain gaps were identified and the CAMSSM analysis results were shown to all team members, most would not have a shared vision of issues or would disagree the results reflect the actual state of affairs within their team. Such a discrepancy between Ciklum analysis and team members' perceptions drove the adoption of a different, **more consultative approach** towards collecting various perceptions of issues and converting them into the workable action plans under the CAMSSM delivery models (see “[CAMSSM Delivery Models](#)” section). Since then Ciklum has begun involving entire teams in the Agility measurement with the Agile Process Consultants on its side to lead the effort and do the quality checks.



How CAMSSM Works

As the basis for comparison Cikulum uses Agile best practices collected from 80+ client own development teams. These practices are grouped up into 7 key dimensions within all aspects of the distributed software development:

1. Teamwork
2. Requirements
3. Planning
4. Technical practices
5. Quality
6. Culture
7. Knowledge

A detailed analysis of 80+ Cikulum clients' teams allows determining a **Cikulum average score**. Further, Cikulum Process Consultants analyze a client's distributed setup in terms of each of the 7 dimensions, depending on a chosen delivery model (see "[CAMSSM Delivery Models](#)" section).

A detailed analysis of each of the dimensions and Agility patterns of the client's distributed teams are then compared to the Cikulum average score (see Fig. 4).

Figure 4: Cikulum vs. Company Average Score



This allows benchmarking deviations in the way the company's Agile teams perform compared to the peer companies' teams (see Figs. 5 and 6). It also allows concluding whether or not each of the client's Agile teams is composed and managed in a right way as well as whether or not the teams have the right focus and sufficient internal and external communication (see Fig. 7).

Figure 5: Deviation Overview

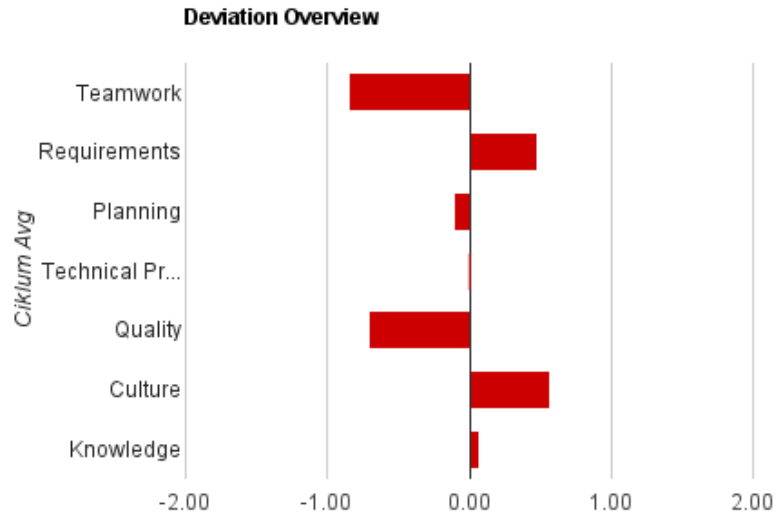


Figure 7: Sample CAMSSM Delivery Report

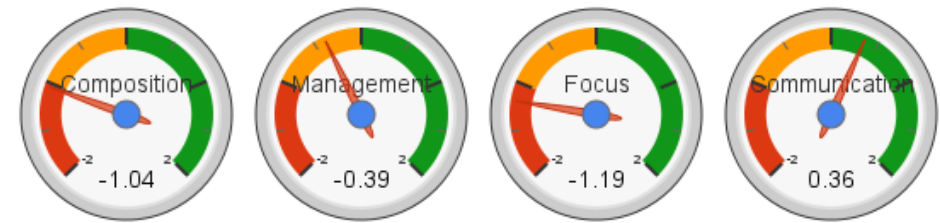
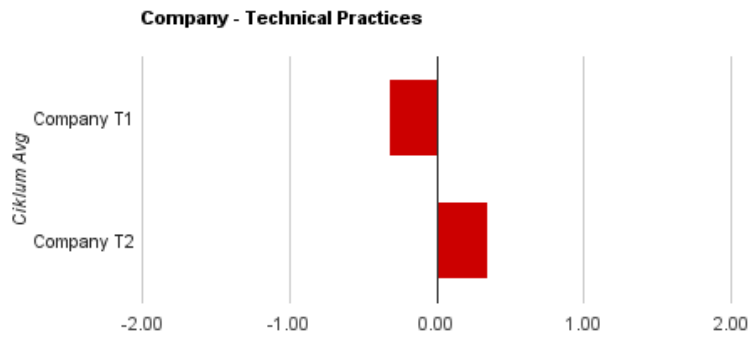


Figure 6: Deviation Within a Single Dimension
-Technical Practices (T = team)





CAMSSM Delivery Models

Depending on clients' business needs, Cikulum currently offers three models of CAMSSM delivery:

| | Perception-Based Delivery Models | | |
|------------------------------|---|--|--|
| | CAMS SM Lite | CAMS SM Team | CAMS SM Enterprise |
| DATA COLLECTION LEVEL | Individual - an online questionnaire is filled out by a PM or a Scrum Master alone | Whole Team – collection of different perceptions from all team members via an online questionnaire, face-to-face interviews, planning poker , open discussion of issues, etc. | Whole Company – collection of different perceptions from all company stakeholders (including top management and all existing Agile teams, both onshore and nearshore / offshore) |
| GOAL | Identify problems and communication gaps fast | Identify problems in an in-depth way and visualize them for the whole team until a compromise and a common vision of problems are achieved | Compare and contrast performance of a whole distributed setup (onshore and nearshore / offshore Agile teams), visualize problematic areas, develop a set of working tools and solutions, foster knowledge exchange and dialogue with business |
| WORKS BEST FOR | Just a single Agile team | Just a single Agile team | A whole distributed setup (2+ Agile development teams located onshore and nearshore / offshore) |



After the productivity gaps have been identified, Ciklum provides its clients with a number of consulting packages to facilitate improvements in respective areas. These packages include, but are not limited to:

- **Agile Process Injection** – team-focused coaching sessions aimed to achieve a shared understanding of Agile approaches, improved transparency of the development process, established practices from planning to review and retrospective and more.
- **Continuous Integration Injection** - a software development practice aimed to significantly reduce integration problems and allow a team to develop cohesive software more rapidly.
- **Team Infrastructure and Coaching** – programs aimed to teach how to effectively set up and monitor nearshore teams.
- **Leadership Coaching** – programs aimed to develop robust leaders within a team able to remove impediments for continuous improvement of team development, setup efficient routes to escalate working problems, nurture an Agile PM from a team lead and more.
- **Product Ownership Workshops** - a good mix of theory with practical exercises, aimed at clarifying the Product Vision and establishing Agile requirements analysis and development process.

After the suggested change has been implemented, Ciklum repeats Agility adherence measurement to see what has and has not worked well. Ciklum continues to improve its client own teams' Agility until the client is fully satisfied with the team productivity, velocity, quality of delivery, cross-functional collaboration and other Agile outcomes.

Conclusion

To wrap up, CAMSSM is a proprietary tool developed by Ciklum Services & Consulting Office (CSC) that aims to:

- Gauge productivity of distributed Agile teams in terms of teamwork, planning, knowledge, quality of delivery, technical practices, culture and requirements
- Visualize productivity gaps and detect roots of those gaps
- Develop solutions to improve teams' productivity based on Agile best practices collected from 80+ Ciklum Client Own Software Development Teams

CAMSSM identifies productivity gaps **on three levels**:

1. **Individual** – each nearshore team member fills out a questionnaire with multiple-choice questions and statements falling under 7 core dimensions of Agile software development



2. **Team** – Ciklum Process Consultants interview the entire client's Agile team in an open discussion style
3. **Company** – Ciklum Process Consultants interview all client's stakeholders, including top management and Agile teams distributed across multiple locations

Once the productivity gaps have been identified, Ciklum Consultants help clients:

- Determine primary areas for improvement (it can be, e.g., planning, product quality, communication or something else)
- Develop strategy and guidelines for the most effective change implementation
- Monitor the change implementation process

Agile practices are an important pillar of each company's overall business success. Assessing how well your distributed teams are at Agile adherence and identifying areas for improvement will provide you with even better business returns as well ability to outpace competitors and accumulate valuable knowledge and Agile experience.

CAMSSM CASE STORIES

1. Berlingske Media



Berlingske Media (www.berlingske.dk) is Denmark's largest news publishing group producing content for print, web, web-TV, radio, and mobile phones. Berlingske Media has a very long and proud history in the Danish society and has always had a big influence through all the national, regional and local titles. It reaches out to 2.5 million Danes through the broad package of media titles and services, including 11 national and regional dailies, 47 local weeklies, more than 60 websites, web services and a web shop, five mobile sites, several digital newsletters, and others. Berlingske established its own Agile software development team with Ciklum in Kiev, Ukraine in 2010 to support and add value to their in-house development department, and has grown it to 40 IT specialists since then.

CHALLENGE

In early spring 2011 Berlingske reviewed their project management tools and asked Ciklum Services & Consulting Office for assistance in identifying the right tool to optimize their development processes in the most effective way. As a result of this, Ciklum recommended Atlassian and delegated its Agile Consultants to support the tool's implementation and optimization for use with Jira, Greenhopper and Crucible in Berlingske development teams in Kiev (nearshore Ciklum hosted team) and Copenhagen (in-house team). In the process of the tool's implementation



Berlingske reviewed their Agile processes again in fall of 2011 and detected some critical gaps in the quality of their development outcomes.

SOLUTION

To do a more detailed processes' audit and develop solutions to resolve the product quality issues, Berlingske opted to use CAMSSM Enterprise to get a holistic view of how agile each of their development teams is in both locations, that is Ukraine and Denmark. In the process of CAMSSM implementation Ciklum Agile Consultants conducted a series of polls and face-to-face interviews with the Kiev and Copenhagen team leads and members. Both development teams were quite similar in terms of their work nature: they both were involved in Berlingske websites' support, bug fixing, releasing new features and functionality and R&D. The main difference underlay in the nature of Berlingske multiple websites. However, Ciklum Consultants found enough similarities in both teams to conclude on the key areas.

RESULTS

Some positive changes were seen right after the face-to-face interviews with the distributed teams. Both teams managed to arrive at the common conclusions regarding the factors preventing them from delivering higher quality results and a cross-team definition of "DONE". The CAMSSM Report "opened eyes" of Berlingske management to the root cause of their issue of bad quality and provided a set of suggestions on how to improve

internal corporate environment and processes to ensure higher employee morale and, as a result, better quality and timely delivery.

Besides pointing to the problem areas, the CAMSSM Report highlighted areas in which Berlingske was doing well. This knowledge blended with the detected roots of the issues allowed Berlingske to develop effective strategies to improve motivation and efficiency of both the management and distributed development teams.

Currently, Berlingske continues to use CAMSSM on a regular basis to ensure agility of their development processes, quality of delivery and quality of cross-team collaboration.

2. IntraNote A/S



IntraNote A/S (www.intranote.dk) is a Danish IT company that develops software used for knowledge sharing in private companies as well as public institutions. Intranote began outsourcing their software solutions to Ukraine in 2005 and currently employs 24 IT specialists with Ciklum in Kiev.

WHY CAMSSM?

IntraNote have been working with Ciklum for a number of years and as part of their continued interaction a Comparative Agility Measurement



System (CAMSSM) analysis was recommended as part of the regular monitoring checks for Ciklum clients.

RESULTS

The CAMS analysis managed to pinpoint a number of areas for improvement, and most specifically it identified that Scrum methodology was needed to be implemented as current practices had started to generate confusion in the development process. In addition, team collaboration was being impacted by the amount of documentation being produced. The workload for the Product/Project manager also needed to be balanced. The team needed a better process for dealing with emergencies and needed to appreciate how these can be integrated with Scrum.

IntraNote were actively seeking training in Scrum methodology to consolidate the approach with the option to train in Denmark, Ukraine or an alternative country but factoring in the whole team. The recommendation proposed by Ciklum was to proceed with training in Ukraine based on the cost advantage and the very impressive and highly recommended profile of the Ciklum trainer. The two days training was completed with the entire onshore and nearshore teams together, focusing on:

- Agile philosophy
- Scrum methodology in detail

- Collaborative teamwork
- Estimation and Planning
- Requirements handling in an Agile way with User Stories

RESULTS OF THE TRAINING ACHIEVED

- IntraNote A/S increased productivity from the first sprint dramatically as it became very easy to overview and plan the most critical parts of its 3 month release.
- The introduction of 2 week focused sprints gave visibility of achievable release goals enabling “Just- in-Time” decision making and reducing delays by focusing on critical tasks.
- The creation of task boards per location synchronized via Skype increased team collaboration on tasks and full team collaboration towards the sprint plan.
- The results above helped ensure self-organized teamwork from the very first day of implementation.

“The Scrum training performed by Ciklum [as a result of the CAMSSM Report] was an invaluable experience that has helped to improve efficiency and speed of response amongst IntraNote A/S’s staff,”
 says Thomas Kjærulff Knudsen, Manager of Development, Intranote A/S.



ABOUT CIKLUM

Ciklum (www.ciklum.com) is a Danish innovative IT outsourcing company specializing in nearshore software development in Eastern Europe, in Ukraine and Belarus. Ciklum's unique business model merges the human element with IT to not only help companies to grow, but provide ongoing resources that sustain growth with the flexibility to scale up or down as markets shift.

Established in 2002, Ciklum employs nearly 2,000 IT specialists with more than 165 global clients' own software development teams. Ciklum has six development offices in Ukraine, one in Belarus, and two in Pakistan, as well as representative offices in Denmark, Sweden, United Kingdom, Switzerland, Germany and the Netherlands. Ciklum is named the 2010 and 2011 Top 100 global services provider and is rated Best Larger IT Employer 2010 & 2011 in Ukraine by DOU.UA, the Ukrainian Community of Software Developers.

CIKLUM HQ

12 Amosova St.

03680, Kiev, Ukraine

Tel.: +38 044 545 77 45, +45 46 92 77 00

Email: ciklum@ciklum.com

Web: www.ciklum.com

ABOUT CIKLUM SERVICES & CONSULTING

[Ciklum Services & Consulting \(CSC\)](#) is an enabler of continuous improvement and business growth of clients' own nearshore development teams as well as a Ciklum knowledge center for Agile methods and tools. Its mission is to increase clients' businesses through increasing productivity and efficiency by applying best practice tools and processes within all aspects of developing software in multiple locations.

Ciklum IT & Business Consulting Services are offered both as a value-added service on top of all business models offered by Ciklum and as a separate service for companies wishing to improve / assess their Agile adherence and efficiency and transform their development roadmap into a structured, measurable and sustainable software development setup.

Current CSC portfolio includes:

- Agile Training, Injection and Coaching
- Team Infrastructure
- Continuous Integration Injection,
- Comparative Agility Measurement System (CAMSSM)
- Leadership and Product Ownership Programs

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