MEDIACODERS

We give meaning to the cloud!

Mission and services of MEDIACODERS Kiel GmbH

Our mission

Whether in startups or large companies, software is an essential part of many business processes in this day and age. Therefore, the question often arises as to how the efficiency of systems can be increased, for example, by the use of modern cloud technology or development based on microservices.

As certified Amazon Web Services (AWS) solution architects, we are happy to help you answer that question. Untapped potential often exists in software projects particularly with regard to the interplay of resilient architecture, cloud hosting, project and cost controlling.

However, there is often a fundamental misconception that the mere use of cloud technology would already result in cost savings or efficiency gains. However, this only applies if the components that the cloud services provides are also used correctly as part of the architecture. This is exactly where our mission begins.

We will analyze your project along with you using various methods such as evaluation of workflows, field studies, and analysis of data streams. Based on that, we will create an architectural concept with a focus on load capacity, scalability, security, and cost efficiency.

In keeping with the AWS-Well-Architected framework (see page 7), we will implement this structure in collaboration with an internal or external development team, continually reviewing progress and achievement as external project managers.

Thus, we are your reliable partner with regard to implementing software projects in cloud environments. Let us talk about your project without obligation and make plans. I look forward to working together with you; please do not hesitate to contact me at any time.

Dirk Ritters
Founder & CEO

Why the cloud at all?

We are often asked what distinguishes a "cloud" service from the offers of a local hosting partner or the servers in your own data center. First of all, the cloud primarily provides computing power in the form of (mostly virtual) servers.

There are, however, two very important differences. On the one hand, the customer does not have to bear any investment costs when using cloud services, the servers are simply paid for according to their usage time. On the other hand, the machines can be quite extensively adapted in terms of performance parameters such as CPU and memory, etc. This is something that would sooner or later require new investments in hardware components for your own data center. In addition, the capacity of cloud providers is currently quite inexhaustible.

And there is another reason. Cloud providers not only provide computing power, but also other services such as databases, message queues, content delivery networks, caching systems, and modules to support software deployment processes. The cloud thus becomes the "one stop shop" for the operation of modern software solutions. When used properly, these solutions allow for virtually limitless scaling and manageable cost risk as resources grow with demand.

In case of an online store, for example, this means that the number of servers scales with the number of customers. Costs and revenues are thus in a healthy relationship, without risks and growth limits. And all this without having any investments or step-fixed cost blocks attached to it. However, this setup only works if the software has been adapted to the cloud services options. It also makes things such as rapid prototyping by quickly replicating entire software environments easier, because resources are virtually unlimited.

The security aspect should also not go unmentioned. While considerable efforts have to be made to secure the software solutions in your own data center, cloud services already include security components by design such as firewalls or packet filters.

Growth on the cloud market

Worldwide Public IT Cloud Services Revenue by Region, 2012–2018 ($B)

22.8% CAGR

Year	Revenue ($B)
2012	36.6
2013	45.7
2014	56.6
2015	70.1
2016	86.4
2017	105.5
2018	127.5
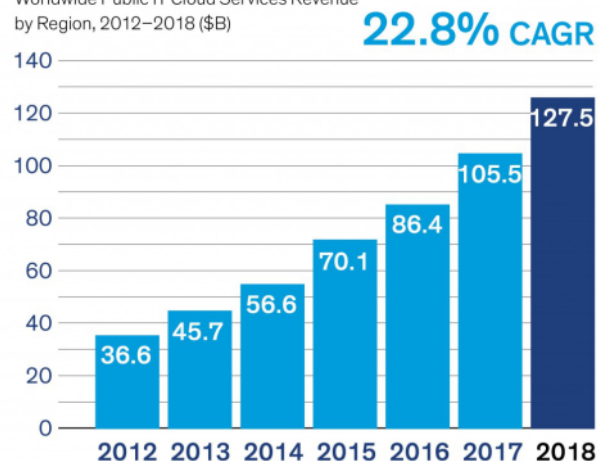
Source: IDC "Public IT Cloud Services"

Overview of our project process

1

First consultation

Our projects usually begin with a non-binding first consultation, wherein we try to understand your requirements and get an idea of the goals. Of course, we would be glad to enter into an NDA with you.

2

Requirements analysis

The next step is followed by a phase in which we collect data and requirements through a workshop, for example, or a small field study in your company, thus laying the foundation for the subsequent architecture phase. We use analysis and data tools for this purpose (see page 5).

3

System architecture

In the architectural phase, we create an optimal software and operating architecture for the solution you require. These two things go hand in hand from our perspective. We improve our planning through iterations.

4

Implementation

During implementation, we coordinate closely with internal or external developers or solution providers and take over the project and cost monitoring including testing and roll-out, if desired. We are also happy to find suitable development service providers for you.

5

Operation & optimization

In operation we take over the optimization of the cloud environment and the monthly operating costs. Amazon Web Services, for example, offers different price ranges depending on the purpose of the system. We are also happy to arrange training for your employees with AWS training partners.

Our tools and frameworks

Our project workflows (see flow chart on the opposite page) are always adapted to your project. We prefer to use some aids and tools which we would like to introduce to you here. Depending on the project, whether it is a new development, adaptation or migration, one or more of these software tools and management frameworks will be utilized.

Data from web analytics and data management platforms

In order to get started in Phase 2 of our project process, we like to bring in extensive data from users of existing systems, such as web analytics and data management platforms. In our experience, this data provides insight into the strengths and weaknesses of existing systems and makes it easier to correctly target a new development or customization.

OKR for workflow adjustments and target definition

Management frameworks, such as Objectives and Key-Results (OKR) can be utilized in the next phases. Company-wide "visions" are transformed into specific measurable goals for departments and employees. Thus, manual workflows can be optimally designed for new or customized software.

Dashboards for performance visualization

In the last phase, "operation & optimization" we like to use dashboards to visualize key performance indicators (both technical and economic). This can be done with tools such as Google Data Studio or Klipfolio. Project success can be monitored and additional development can be planned with these dashboards.

Dashboard-Example Google Data Studio

Dashboard-Example Klipfolio

Why Amazon Web Services?

The rapid growth of the cloud market (see chart on page 3) attracts more and more providers. Some, even well-known ones, disappear after a short time because they are not competitive, for example, in terms of customer requirements, growth, and range of services.

Over time, it will be difficult to keep track of things in this regard. The market research company "Gartner" provides a good guide each year with its Magic Quadrant for the cloud market (chart below).

Amazon Web Services was chosen as the leading provider in the market with the most complete range of services several times already. This is another reason why we rely on the services of this provider and open up the possibilities of AWS to our customers in projects. Some of the excellent options: With services such as DynamoDB (key/value store), Aurora (a MySQL clone) or Lambda (serverless computing), Amazon now offers all the components needed to build fully scalable software no longer being confined by the limits of servers or database licenses. There are also possibilities for using artificial intelligence, such as in text analysis, which can be helpful in assigning user queries to departments or teams automatically.

Last but not least, Work Mail also provides a service nowadays that can be used to replace existing Microsoft Exchange environments in small and medium-sized workgroups.

All services can be controlled via a programming interface (a so-called API) so that even complex administration and development tasks can be handled.

This "completeness of vision," as Gartner calls it in its assessment, led us to the decision to opt for a partnership with Amazon Web Services in 2013, a decision we have not regretted thus far.

What does good software design look like?

In addition to the individual concept of software, there are some issues such as security that have a huge impact on the planned architecture. With the so-called "Well-Architected Framework," Amazon Web Services provides a basis for taking these crucial points into account in the early project phase. Here's an overview:

1 High operating quality

By this we mean the ability to fully monitor the application in the future, so as to detect malfunctions early and quickly fix them with updates. This allows the business process for which the software is utilized to continue undisturbed.

2 Comprehensive security

This refers to the ability of the application to protect the data. These may be, for example, user or transactional data that arise during operation of the application. AWS security-based architecture minimizes the risk of data loss or theft.

3 Scalable and efficient

Bottlenecks in the use of cloud resources should be automatically detected and also automatically remedied, for example, by scaling server clusters or read/write capacities of databases. To do this, the application must allow such horizontal or vertical scaling. In addition, the most suitable services of the cloud provider should always be used, since more than just one possible solution will definitely exist over time.

4 Cost-optimized

Finally, we always use every opportunity to optimize the monthly operating costs. Thus, short-term resource requirements at peak loads can be handled with options such as bid-based Spot Instances, some of which are well below the price of standard servers.