

# C++ in the telecom industry

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# The purposes of this talk are:

- To give an overview of the telecom industry processes
- To highlight the importance of C++ in this area

# C++ is mostly used in

- Driver development
- Embedded software
- Games
- Banking
- Desktop applications

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- Telecommunications

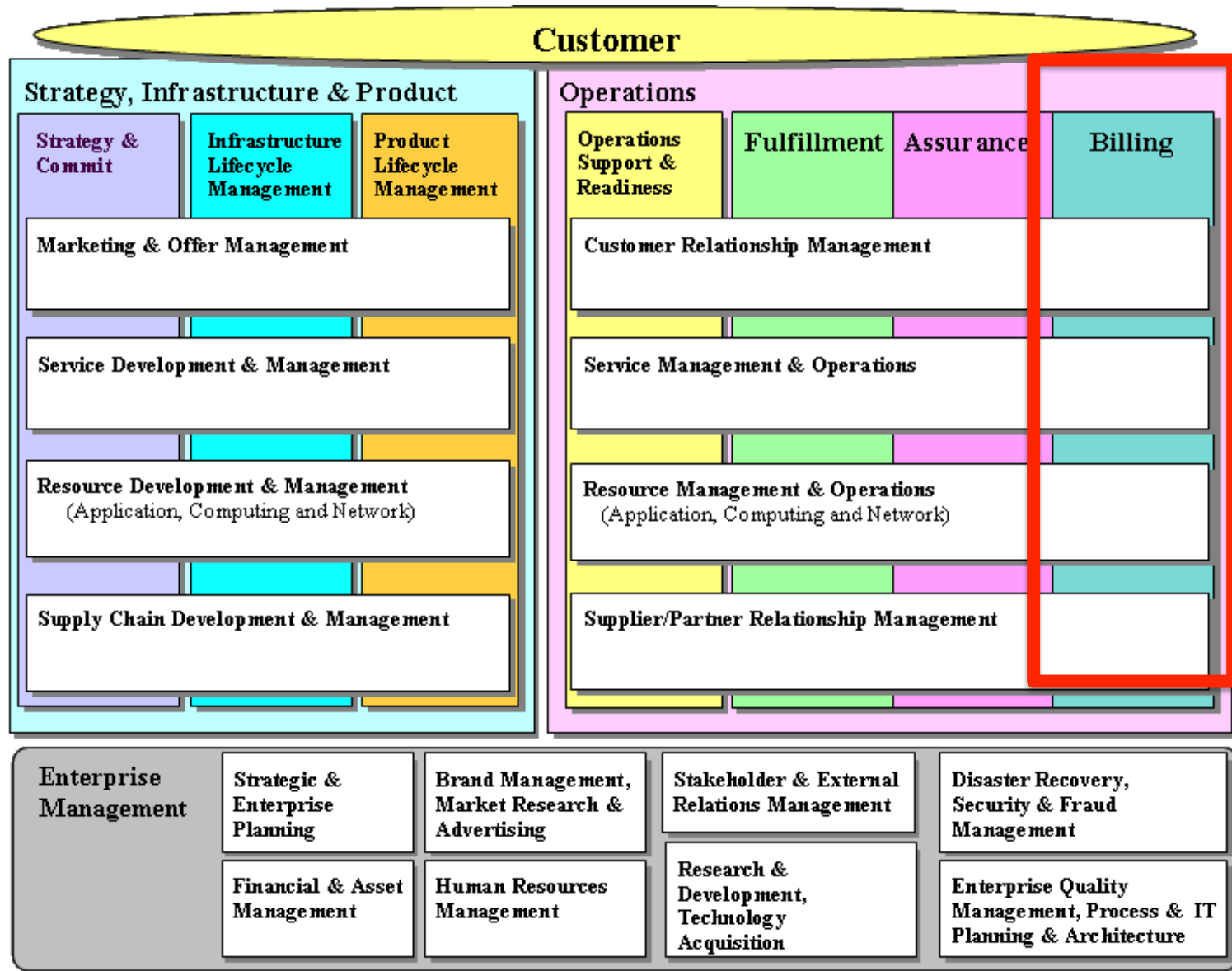
Software for telecom is different in contrast with common management and revenue solutions. In the telecom industry, operations are different.

# eTOM

- Enhanced Telecommunication Operation Map (eTOM)
- Is proposed and regulated by the TM Forum<sup>1</sup>
- Describes all the enterprise processes required by a service telecom provider

<sup>1</sup> TM Forum is an association that provides standards to delivery profitable services.

# eTOM



Source: Enhanced Telecommunication Operation Map, TM Forum

# The billing process

- Main process of any communications service provider: mobile networks, telephone, internet service providers, satellite TV, VoIP, cable, etc.
- Massive process; a service provider should to bill 40M, 50M, 60M of subscribers in the shortest possible time!



# Steps of the billing process

- **Configuration** - all related to commercial offer
- **Provisioning** - related to infrastructure
- **Mediation** - collects and transform CDR files
- **Rating** - prepaid or postpaid
- **Billing**

# Top telecom billing systems:

- **Enabler** from Amdocs
- **BRM (Billing and Revenue Management)** from Oracle Corporation

All these written in C++

# Why C++?

- High performance
- High reliability
- Small footprint
- Low energy consumption
- “...nothing that can handle complexity runs as faster as C++...”

# Summary

- Billing systems require processing large volumes of data in short time
- Only C++ can archive this performance. Most billing systems are written in C++

Thank you!