

# Имплементация паттерна *MICROFRONTENDS* 2 года за 30 минут

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# ИМПЛЕМЕНТАЦИЯ ПАТТЕРНА MICROFRONTENDS

2 года за 30 минут





# Проблематика

Как сделать так, чтобы,  
совершенно разные

## МИКРОСЕРВИСЫ

бесшовно соединились  
в одну систему?

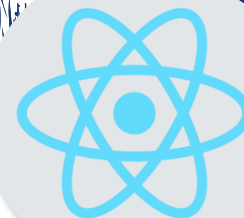


# Проблематика



# Проблематика

## MICROFRONTENDS

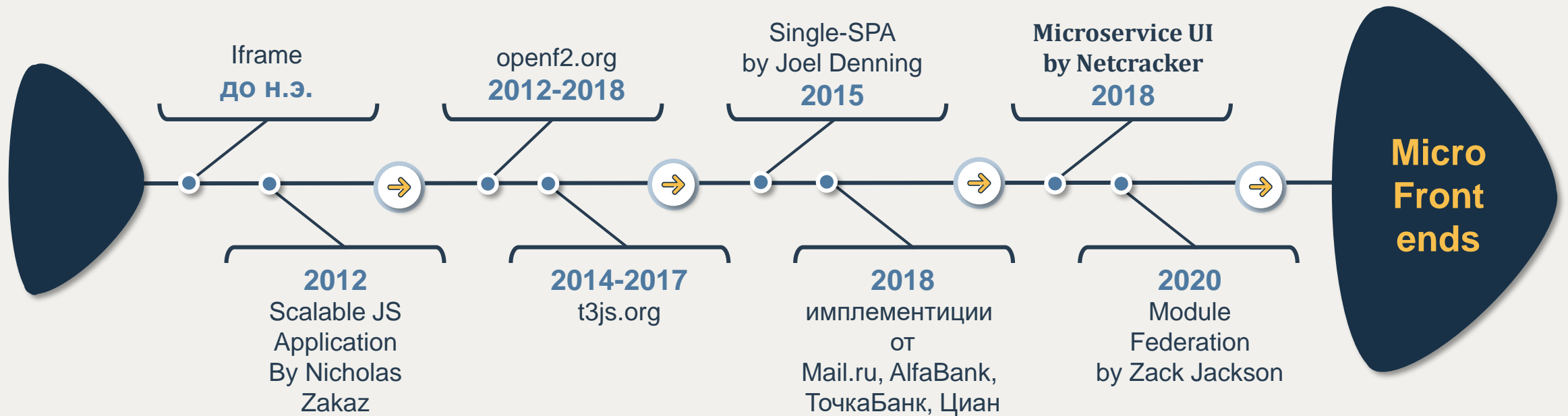


- это методы, стратегии и рецепты для создания современного веб-приложения несколькими командами, которые могут работать независимо.

<https://micro-frontends.org/>



# История Microfrontends





# Кто использует Microfrontends сегодня



- ✓ NETCRACKER
- ✓ Alfabank
- ✓ Mail.ru
- ✓ ТочкаБанк
- ✓ Циан
- ✓ Ерам

Источник: Luca Mezzalana (Solution Architect | Google Developer Expert)  
<https://blog.bitsrc.io/state-of-micro-frontends-9c0c604ed13a>

# Задачи, которые решает Microfrontends:

1. ?????????? ???? ????????????
2. ?????????? ?????????? ??? runtime
3. ?????????? agnostic
4. ????????? ????????????????
5. ?????????? ?????????? ??????? ?????
6. ?????????? ?????????????????? enterprise UI ??? ??????? ??????????



# Задачи, которые решает Microfrontends:

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# Задачи, которые решает Microfrontends:



Независимый цикл разработки



Возможность обновить код runtime



Фреймворк agnostic



Низкая связанность

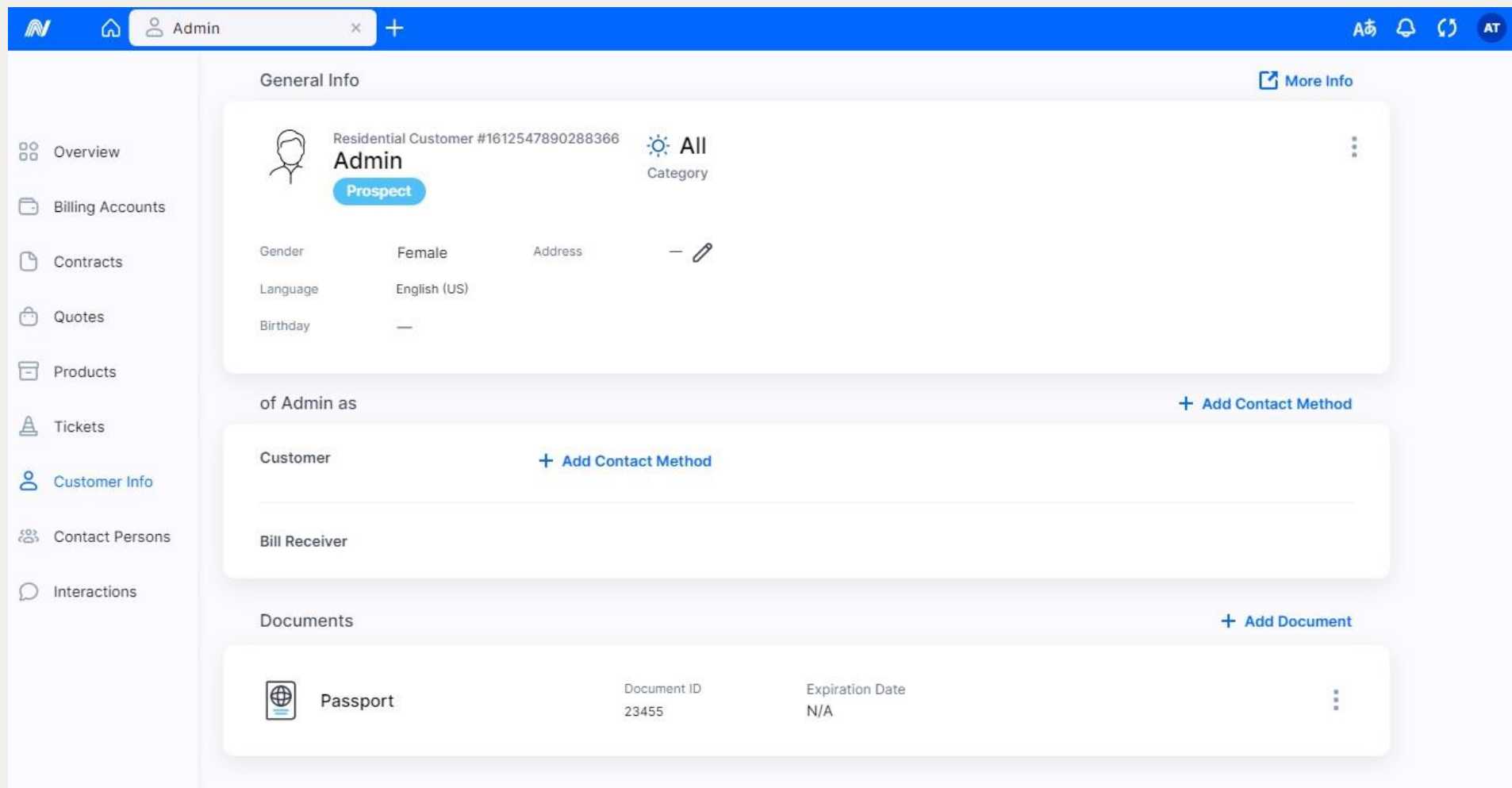


Уменьшение скорости эрозии кода



Простота кастомизации enterprise UI под разных клиентов

# Пример приложения с Microfrontends





# Пример приложения с Microfrontends

The screenshot shows a web application interface for managing billing accounts. The top header is blue and contains a logo, a home icon, a user profile dropdown for 'Admin', and several utility icons. The left sidebar is light blue and lists navigation options: Overview, Billing Accounts (highlighted), Contracts, Quotes, Products, Tickets, Customer Info, Contact Persons, and Interactions. The main content area is white and titled 'Billing Accounts' with a '+ Add Billing Account' link. It displays a table with one row of data for a 'Postpaid' account.

Billing Accounts				+ Add Billing Account	
Postpaid	CA16125478921391	Billed Debt	N/A	Current Balance	N/A
Active		Unbilled Debt	N/A		

# Пример приложения с Microfrontends

The screenshot displays a web application interface for managing quotes. The top header is blue and contains a logo, a home icon, a user profile labeled 'Admin', and several utility icons. A sidebar on the left lists navigation options: Overview, Billing Accounts, Contracts, Quotes (highlighted), Products, Tickets, Customer Info, Contact Persons, and Interactions. The main content area, titled 'Quotes', shows a list of three quote cards. Each card includes a quote icon, the quote number, its status, creation and acceptance dates, total price, and monthly price. Below each quote card are buttons for 'New Products' and 'Show Details'.

Quote #	Status	Created	Accepted	Total Price	Monthly Price
Quote #2283	Submitting For Delivery	2021/02/12 17:10	2021/02/12 17:11	\$1,109.90	\$0.00 / mo.
Quote #2109	Submitting For Delivery	2021/02/10 22:42	2021/02/10 23:09	\$33.00	\$71.50 / mo.
Quote #1691	Delivered	2021/02/05 21:58	2021/02/05 21:59	\$0.00	\$2.20 / mo.

# Пример приложения с Microfrontends

The screenshot displays the NetCracker Tenant Admin interface. The top navigation bar is blue and contains the NetCracker logo, a home icon, a user profile dropdown for 'Tenant Admin', and several utility icons (language, notifications, refresh, and a user icon labeled 'AT'). A left sidebar lists navigation options: Overview (selected), Billing Accounts, Contracts, Quotes, Products, Tickets, Customer Info, Contact Persons, and Interactions. The main content area is titled 'Products' and shows details for a tenant with ID 'CA16125478921391'. At the top right of the main area, a box identifies the user as 'Admin Tenant' with email 'cpq-admin@netcracker.com' and a 'Log Out' button. The product list includes:

Postpaid	CA16125478921391	Billed Debt	Unbilled Debt	Balance	
Active		\$0.00 ⓘ	—	—	⋮
<hr/>					
	TV Satellite TV ● Planned	Location	Heroiv Stalinhrada Ave, Kyiv, Ukraine, 02000		⋮
		Activation Date	—		
		Monthly Charge	\$71.50		
<hr/>					
	● Active	Mobile Plan	Lego-go	Monthly Charge	\$2.20
		Activation Date	2021/02/05		⋮
<hr/>					
	Smartphones Samsung Galaxy Note 10.1 64Gb Black ● Planned	Sale Type	N/A		⋮
		Date of Purchase	2021/02/12		
		Model	gt-n8013		

At the bottom of the product list, there is a link: [Show All Products](#).

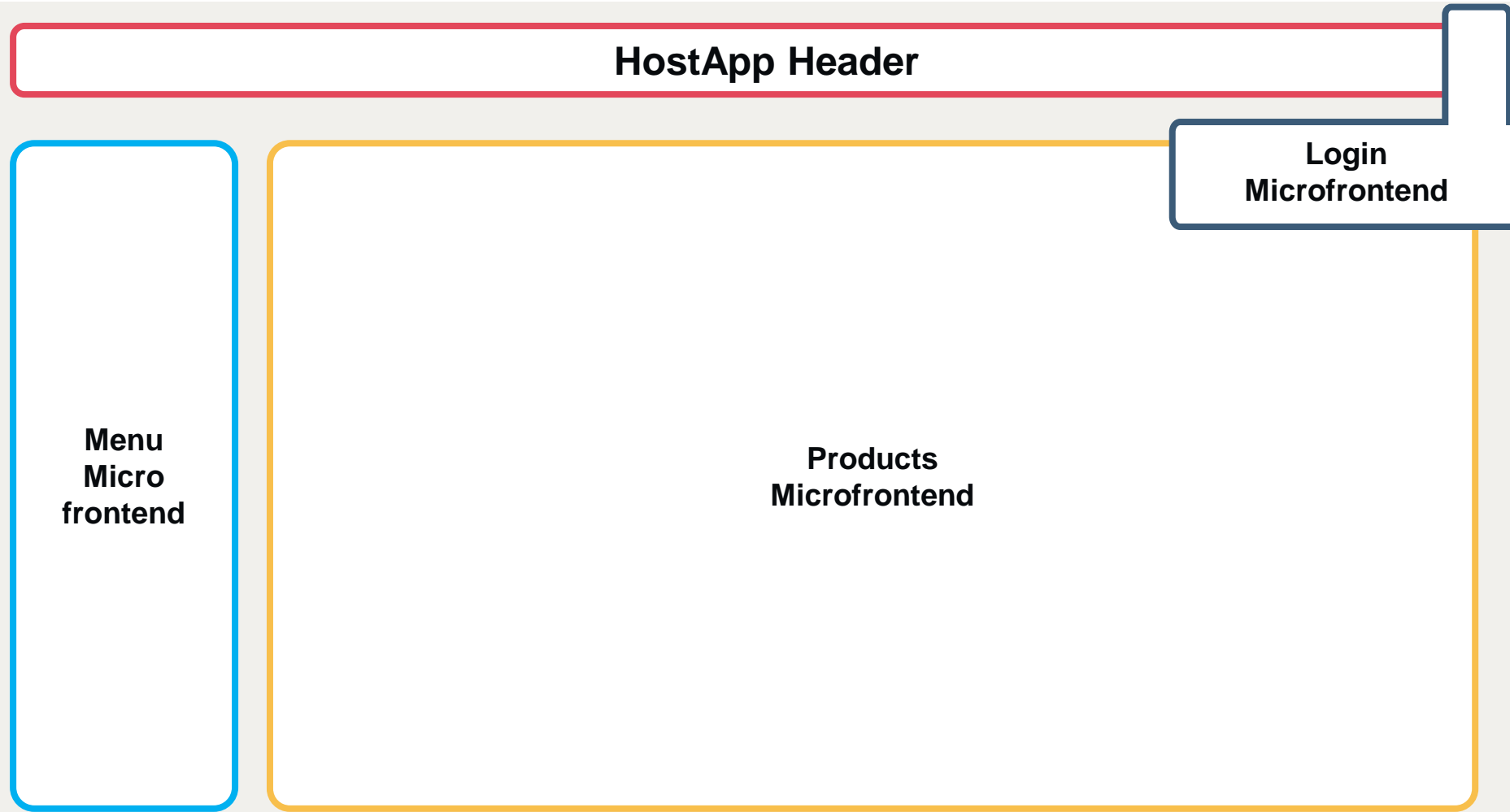


# Разделение на UI блоки

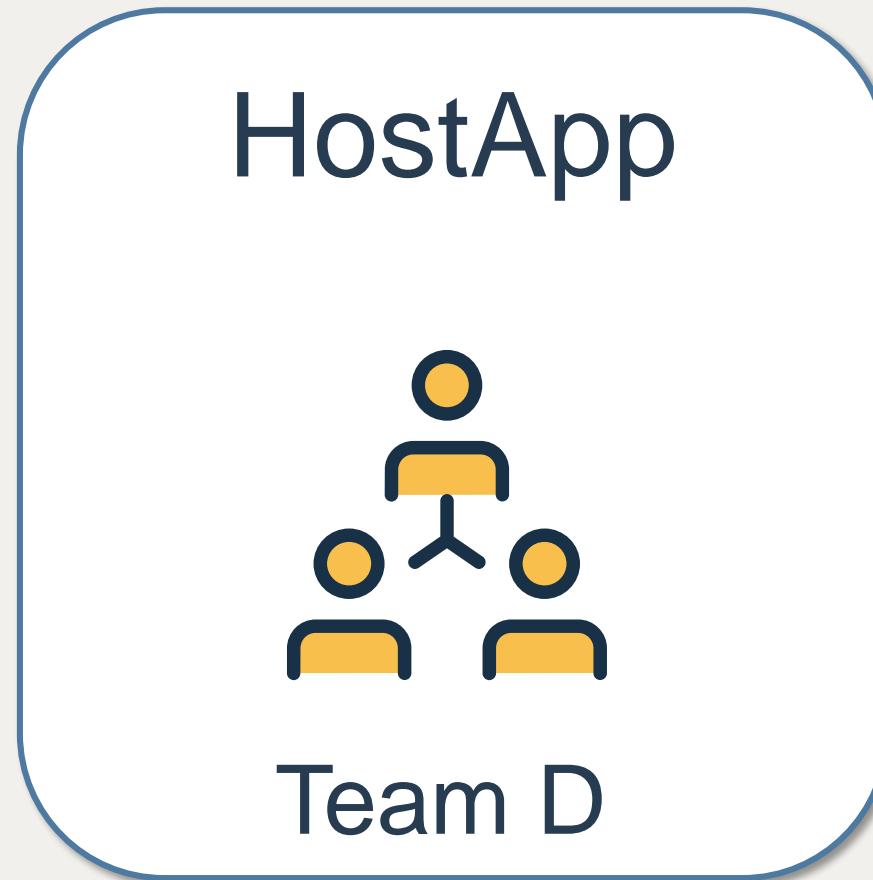
The screenshot displays a web application interface for a Tenant Admin, divided into several UI blocks:

- Top Navigation Bar:** Contains the NetCracker logo, a home icon, a user profile dropdown labeled "Tenant Admin", and utility icons for search, notifications, and refresh. A red box highlights the entire top bar.
- User Profile Dropdown:** A white box with a blue border that appears when the user profile is clicked. It displays "Admin Tenant", the email "cpq-admin@netcracker.com", and a "Log Out" button. A blue box highlights this dropdown.
- Left Sidebar:** A vertical menu with icons and labels for "Overview", "Billing Accounts", "Contracts", "Quotes", "Products", "Tickets", "Customer Info", "Contact Persons", and "Interactions". A blue box highlights the entire sidebar.
- Main Content Area:** The primary workspace for the tenant admin, outlined with a yellow border. It contains:
  - Products Section:** A header for the product list.
  - Postpaid CA16125478921391:** A summary card showing "Active" status, "Billed Debt" of \$0.00, and "Unbilled Debt" and "Balance" as empty.
  - TV Satellite TV:** A product entry with "Planned" status, location "Heroiv Stalinhrada Ave, Kyiv, Ukraine, 02000", and a "Monthly Charge" of \$71.50.
  - Mobile Plan:** A product entry with "Active" status, plan "Lego-go", activation date "2021/02/05", and a "Monthly Charge" of \$2.20.
  - Smartphones:** A section header for mobile devices.
  - Samsung Galaxy Note 10.1 64Gb Black:** A product entry with "Planned" status, sale type "N/A", purchase date "2021/02/12", and model "gt-n8013".
  - Show All Products:** A link at the bottom of the product list.

# Разделение на UI блоки

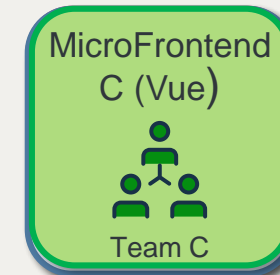
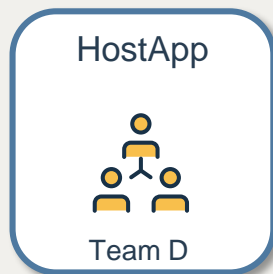


# Архитектура приложения с Microfrontends

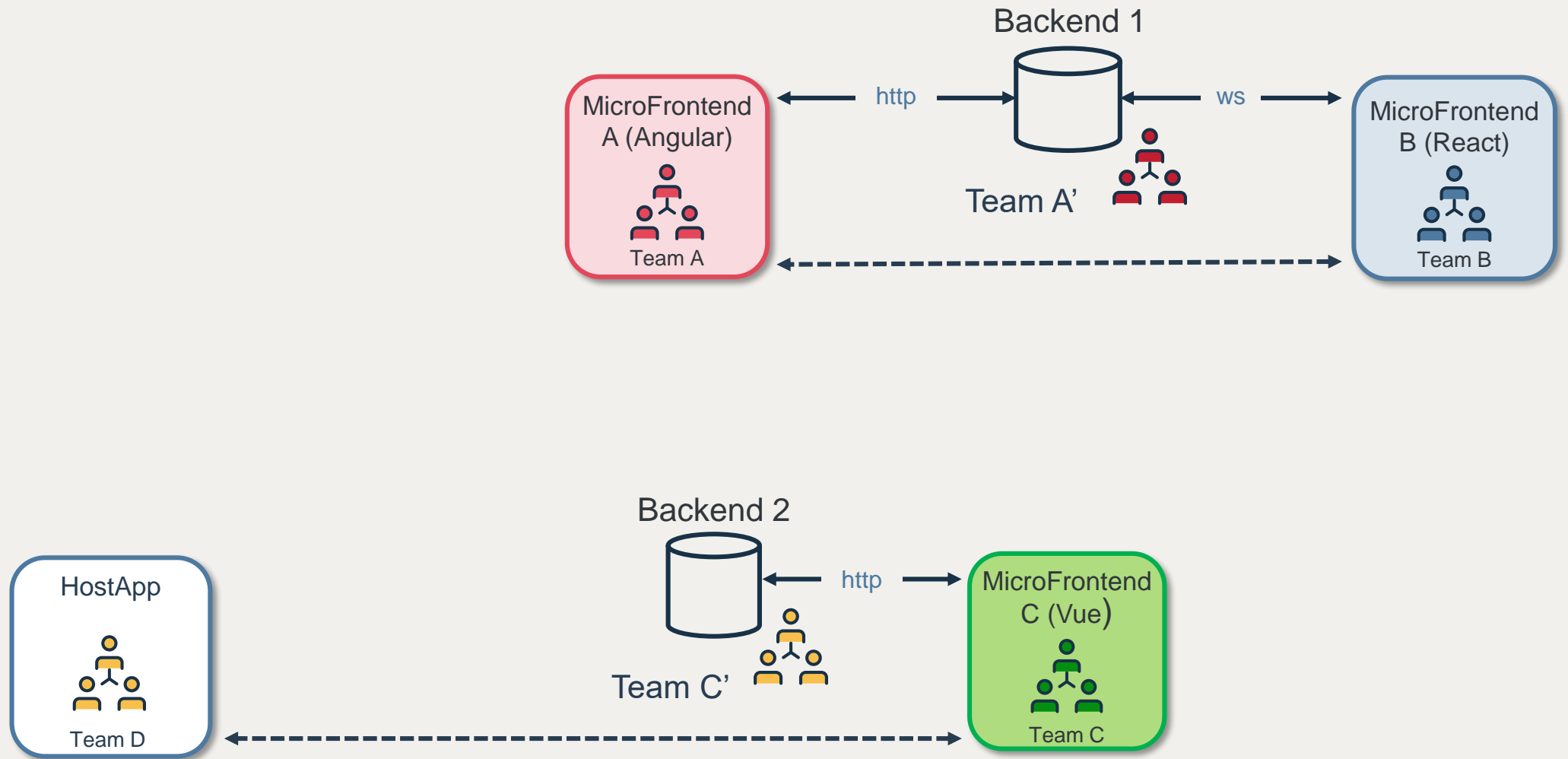




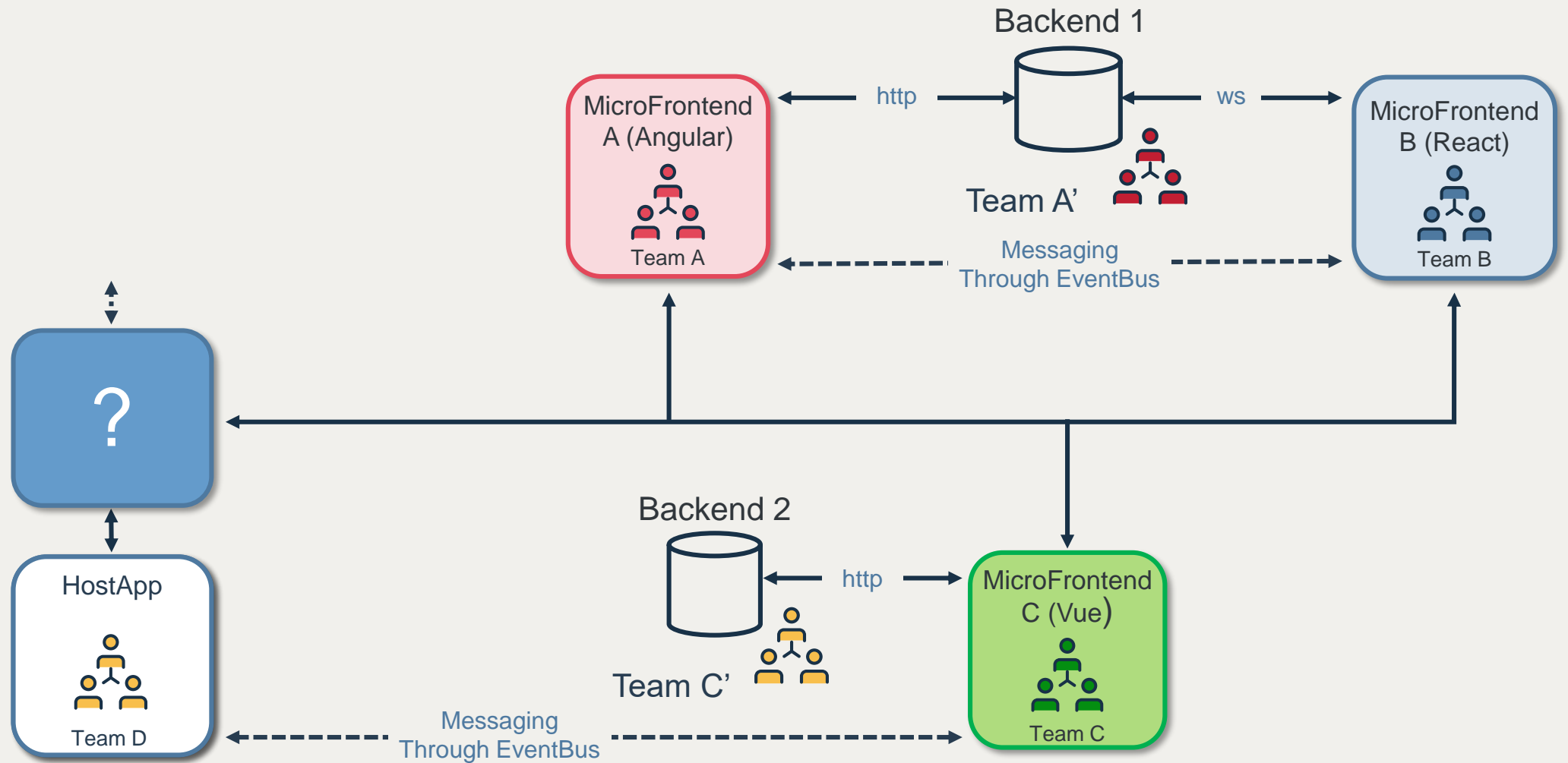
# Архитектура приложения с Microfrontends



# Архитектура приложения с Microfrontends

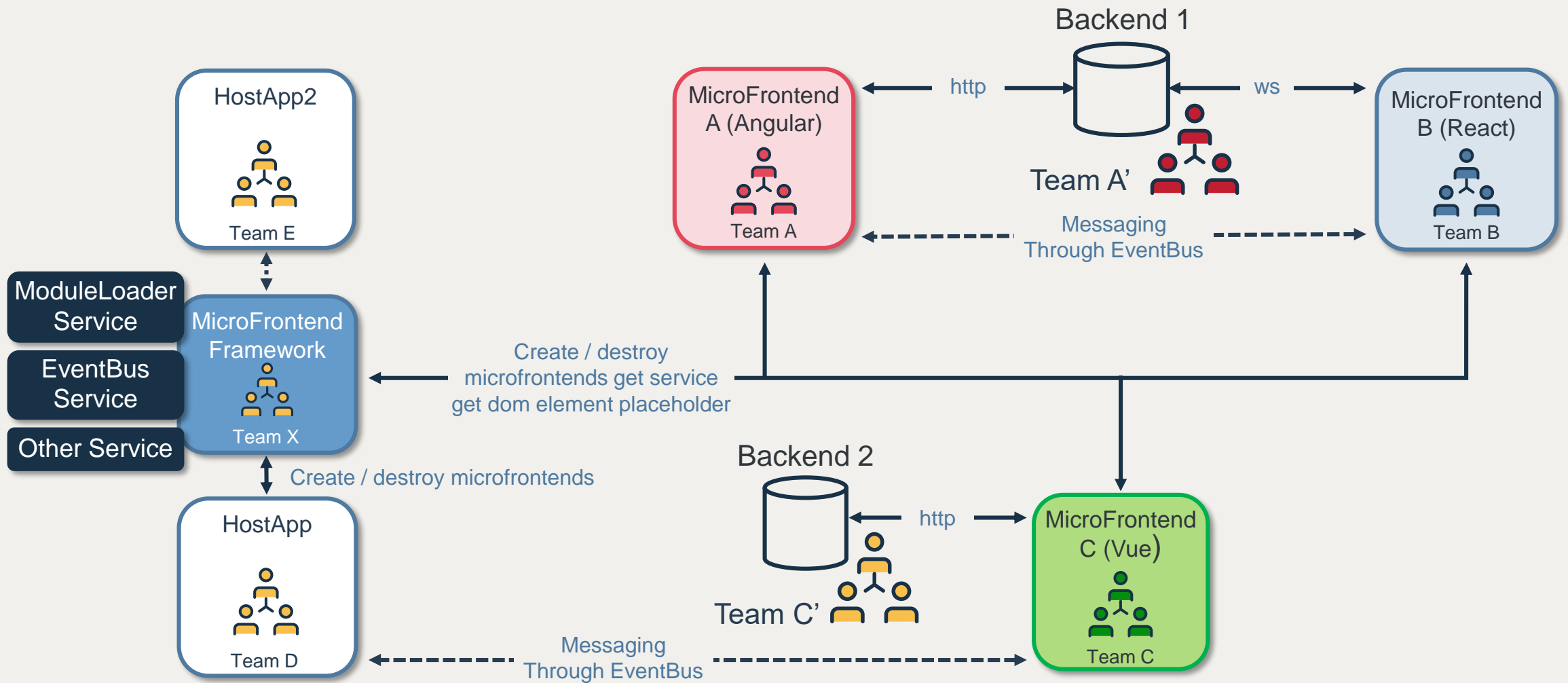


# Архитектура приложения с Microfrontends





# Архитектура приложения с Microfrontends





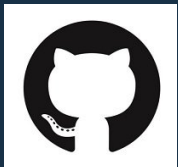
# DEMO: Mini-MUI coding



# Перемирие в Framework битве (и даже между версиями!)



# Q&A



<https://github.com/stswoon/minimui.git>

Анатолий Нехожин

Lead Software Engineer, Netcracker

# Thank You

