



BLOCKCHAIN FOR GOOD HACKATHON
AT ACCENTURE THE DOCK

Foodfast: a case study

A blockchain-based reputation system

30.09-01.10.2017 Blockchain For Good Hackathon in Dublin

~~Restaurant~~ Lounge

★★★★★ (2992)

Sushi

🚗 GRATIS | ⌚ ca. 30min | 🍽️ Min. 10,00 €

NEU

~~Restaurant~~ en- Asian Cuisine

★★★★★

Sushi, Vietnamesisch, Asiatisch

Ab 14:00 | 🚗 GRATIS | ⌚ ca. 30min | 🍽️ Min. 15,00 €

~~Restaurant~~ er

★★★★★ (106)

Italienisch, Sushi, Amerikanisch

Ab 20:00 | 🚗 1,00 € | ⌚ ca. 30min | 🍽️ Min. 29,00 €

~~Restaurant~~ Sushi

★★★★★ (643)

Sushi

Ab 14:30 | 🚗 GRATIS | ⌚ ca. 30min | 🍽️ Min. 12,00 €

~~Restaurant~~ Restaurant

★★★★★ (1389)

Sushi, Japanisch

🚗 GRATIS | ⌚ ca. 30min | 🍽️ Min. 12,00 €

~~Restaurant~~ e

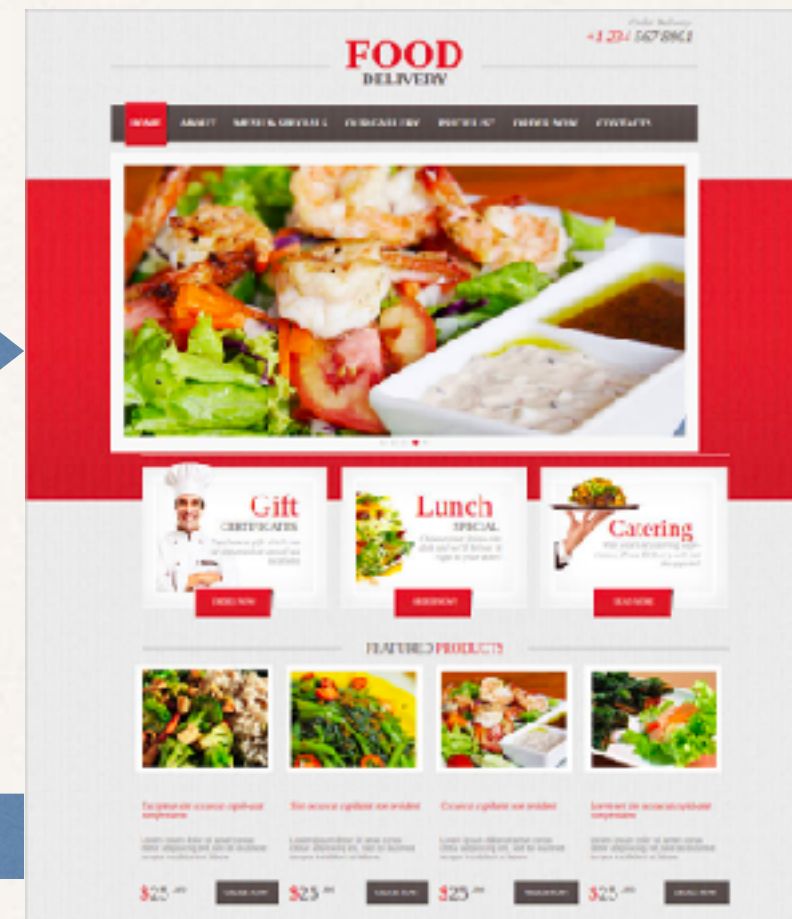
★★★★★

Sushi, Hähnchen, Asiatisch

Ab 14:00 | 🚗 GRATIS | ⌚ ca. 30min | 🍽️ Min. 15,00 €



Ratings are manipulated



~~Restaurant~~ Lounge

★★★★★ (2992)

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Sushi, Hähnchen, Asiatisch

Ab 14:00 | 🚗 GRATIS | ⌚ ca. 30min | 🍽️ Min. 15,00 €



<p>[Redacted] Lounge ★★★★★ (2992) <i>Sushi</i> 🚗 GRATIS ⌚ ca. 30min 💰 Min. 10,00 €</p>	<p>Actual Delivery Time +16 min</p>	<p>[Redacted] Sushi ★★★★★ (643) <i>Sushi</i> Ab 14:30 🚗 GRATIS ⌚ ca. 30min 💰 Min. 12,00 €</p>	<p>Actual Delivery Time +3 min</p>
<p>NEU [Redacted] - Asian Cuisine ★★★★★ <i>Sushi, Vietnamesisch, Asiatisch</i> Ab 14:00 🚗 GRATIS ⌚ ca. 30min 💰 Min. 12,00 €</p>	<p>-4 min</p>	<p>[Redacted] Restaurant ★★★★★ (1389) <i>Sushi, Japanisch</i> 🚗 GRATIS ⌚ ca. 30min 💰 Min. 12,00 €</p>	<p>-1 min</p>
<p>[Redacted] er ★★★★★ (106) <i>Italienisch, Sushi, Amerikanisch</i> Ab 20:00 🚗 1,00 € ⌚ ca. 30min 💰 Min. 20,00 €</p>	<p>+7 min</p>	<p>[Redacted] e ★★★★★ <i>Sushi, Hähnchen, Asiatisch</i> Ab 14:00 🚗 GRATIS ⌚ ca. 30min 💰 Min. 15,00 €</p>	<p>-12 min</p>

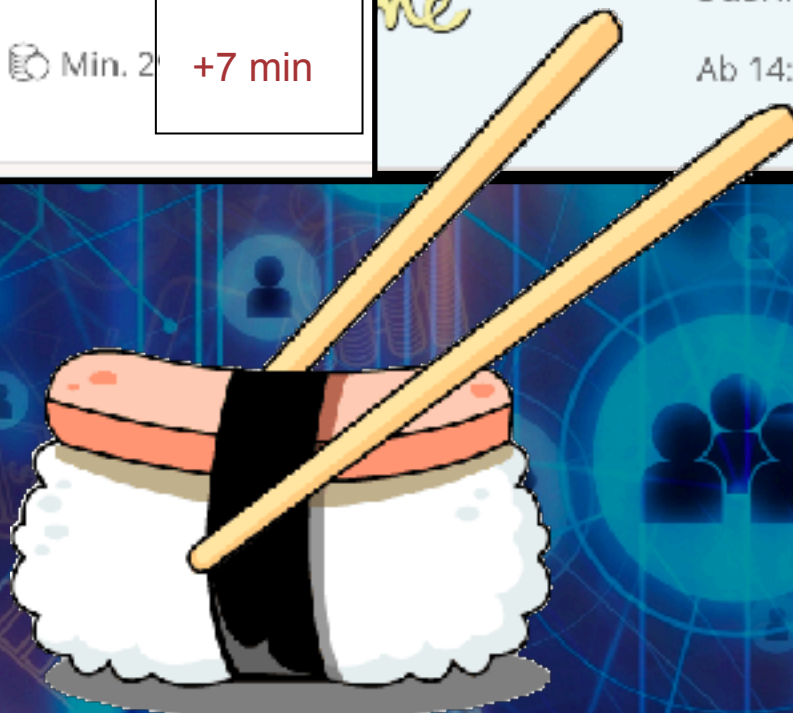
× Actual Delivery ⌚

14 days

7 days

3 days

All time



Blockchain-enabled delivery time

models/order.cto

```
/**
 * Sample business network definition.
 */
namespace org.foodorder.reputation

enum DeliveryState {
o RECEIVED
o DELIVERED
o CANCELLED
}

/**
 * The asset is the food order
 */
asset FoodOrder identified by orderId {
o String orderId
--> Restaurant owner
o Integer orderTime
o Integer deliveryTime
o DeliveryState deliveryStatus
}
```

```
/**
 * A participant is the restaurant
 */
participant Restaurant identified by restaurantId {
o String restaurantId
o String restaurantName
}

transaction FoodTransaction {
--> FoodOrder order
o Integer deliveryTime
o DeliveryState deliveryStatus
}

event FoodEvent {
--> FoodOrder order
o Integer t_deliveryTime
o Integer t_deliveryStatus
}
```


Blockchain-enabled delivery time

```
/**
 * Sample transaction processor function.
 * @param {org.foodfast.reputation.FoodTransaction} tx The sample transaction instance.
 * @transaction
 */
function sampleTransaction(tx) {

    // Update the asset with the new value.

    if (tx.order.deliveryStatus == 'DELIVERED')
        return;

    tx.order.deliveryTime = tx.deliveryTime;
    tx.order.deliveryStatus = tx.deliveryStatus;

    // Get the asset registry for the asset.
    return getAssetRegistry('org.foodfast.reputation.FoodOrder')
        .then(function (assetRegistry) {

            // Update the asset in the asset registry.
            return assetRegistry.update(tx.order);

        })
        .then(function () {

            // Emit an event for the modified asset.
            var event = getFactory().newEvent('org.foodfast.reputation', 'FoodEvent');
            event.order = tx.order;
            event.t_deliveryStatus = tx.deliveryStatus;
            event.t_deliveryTime = tx.deliveryTime;
            emit(event);

        });
}
```

```
orderId:1001
{
  "$class": "org.foodfast.reputation.FoodOrder",
  "orderId": "orderId:1001",
  "owner": "resource:org.foodfast.reputation.Restaurant#restaurantId:0001",
  "orderTime": 0,
  "deliveryTime": 27,
  "deliveryStatus": "DELIVERED"
}
```

```
"$class": "org.foodfast.reputation.FoodOrder",
"orderId": "orderId:1001",
"owner": "resource:org.foodfast.reputation.Restaurant#restaurantId:0001",
"orderTime": 0,
"deliveryTime": -1,
"deliveryStatus": "RECEIVED"
}
```

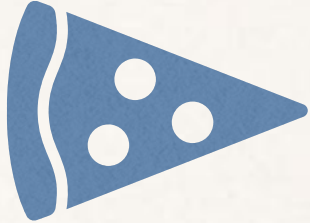

Submit a **FoodTransaction** transaction:

```
{
  "$class": "org.foodfast.reputation.FoodTransaction",
  "order": "resource:org.foodfast.reputation.FoodOrder#orderId:1001",
  "deliveryTime": 27,
  "deliveryStatus": "DELIVERED"
}
```

Reputation system on delivery time: as enabler

- ❖ New competition ground for new businesses
- ❖ Encourages businesses plan better
- ❖ Partnership ideas for poor performing businesses
- ❖ Increased economy, more jobs, fairer market share

Applicability: wherever choice affects time

- ❖ Food delivery  30 mins
- ❖ Building construction  18 months
- ❖ Graduate program offerings  6 years
- ❖ Software project delivery  3 months
- ❖ Campaign-promise delivery  4 - 24 years

Thank you

- ❖ Model and transaction implementations on GitHub:

<https://github.com/OnurErgin/foodfast>

