

区块链在IoT中的实践

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Blockchain of Things

案例

IoT Case



IoT带来的变革

IoT Brings The Change





Why blockchain?

价值网络

- 信息网络占99%，但价值网络价值更大
- 价值的流转，交换要保证一致性而非效率
- 信息网络提升生产力，价值网络改变生产关系
- 物联网中价值网络潜力更大



去中心化的意义

- 保证一致性，安全性，不可篡改
- 最终一致性可牺牲效率
- 解决信息孤岛



共识算法的选择

- POW, POS, PDBFT , DPOS, DAG
- CAP原理
- 取得安全性、效率之间的平衡

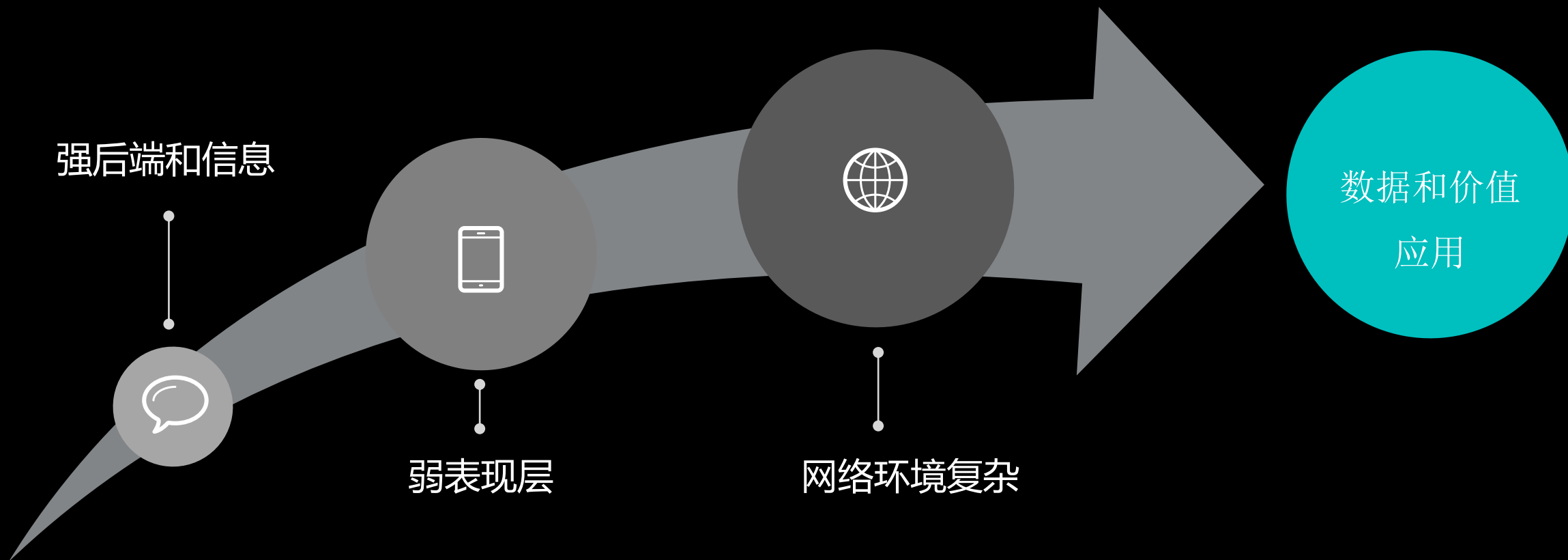




选择基于应用需求

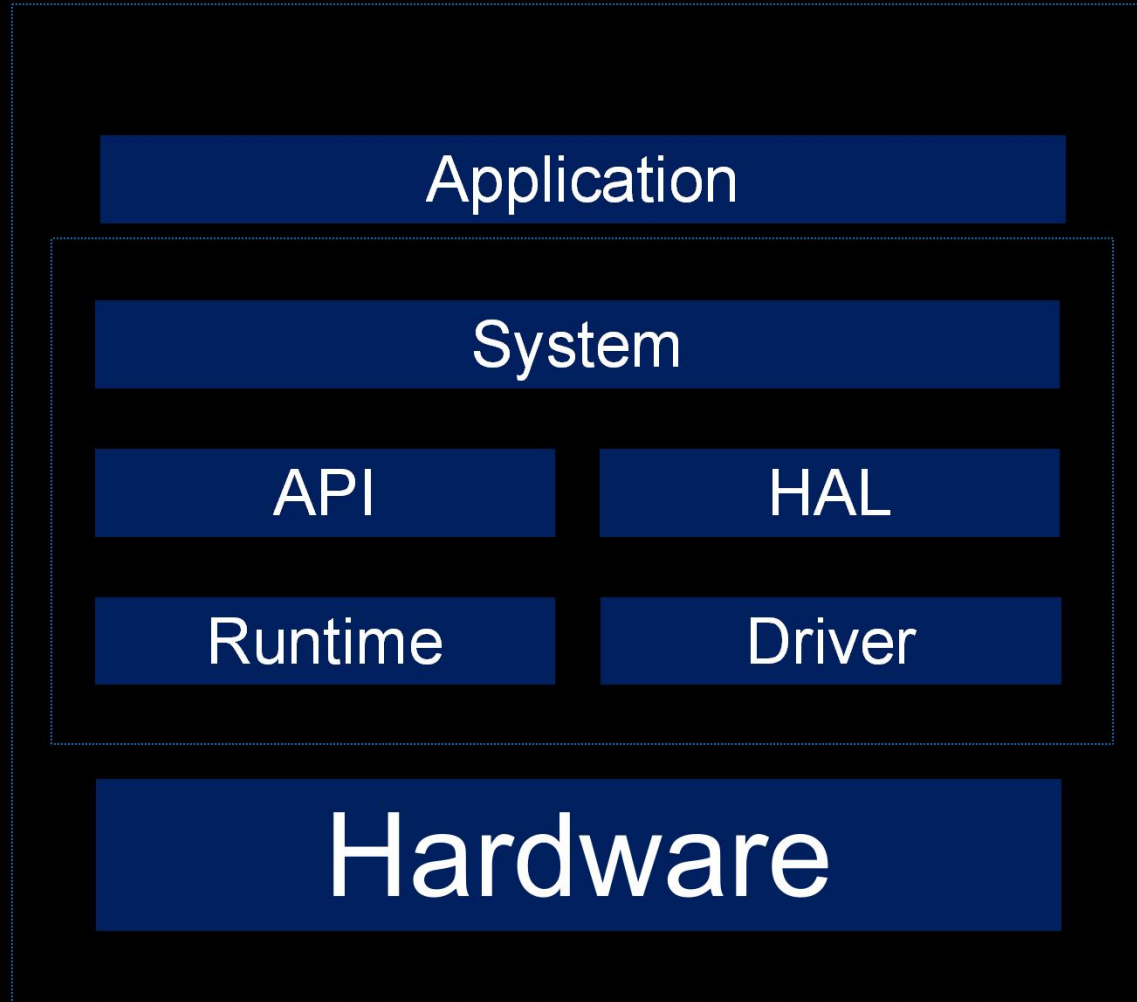
IoT应用特点

Internet of things apps



Ruff OS

What is Ruff OS?



Trivia

```
#include <stdio.h>
#include "stm32f10x.h"
#include <stm32f10x_gpio.h>
GPIO_InitTypeDef GPIO_LED;
void Delay(int times)
{
    int i = 0;
    while(times--)
    {
        for (i=0; i<0xffff; i++);
    }
}
int main(int argc, char **argv)
{
    SystemInit();
    RCC_APB2PeriphClockCmd(RCC_APB2Periph_GPIOB, ENABLE);
    GPIO_LED.GPIO_Pin = GPIO_Pin_1 | GPIO_Pin_11 | GPIO_Pin_14 | GPIO_Pin_15;
    GPIO_LED.GPIO_Mode = GPIO_Mode_Out_PP;
    GPIO_LED.GPIO_Speed = GPIO_Speed_50MHz;
    GPIO_Init(GPIOB, &GPIO_LED);
    while(1)
    {
        GPIO_SetBits(GPIOB, GPIO_Pin_1);
        GPIO_SetBits(GPIOB, GPIO_Pin_14);
        Delay(10);
        GPIO_ResetBits(GPIOB, GPIO_Pin_1);
        GPIO_ResetBits(GPIOB, GPIO_Pin_14);
        Delay(10);
        return 0;
    }
}
```

```
'use strict';

$.end(function() {
    $('led-red').off();
    $('led-green').off();
});

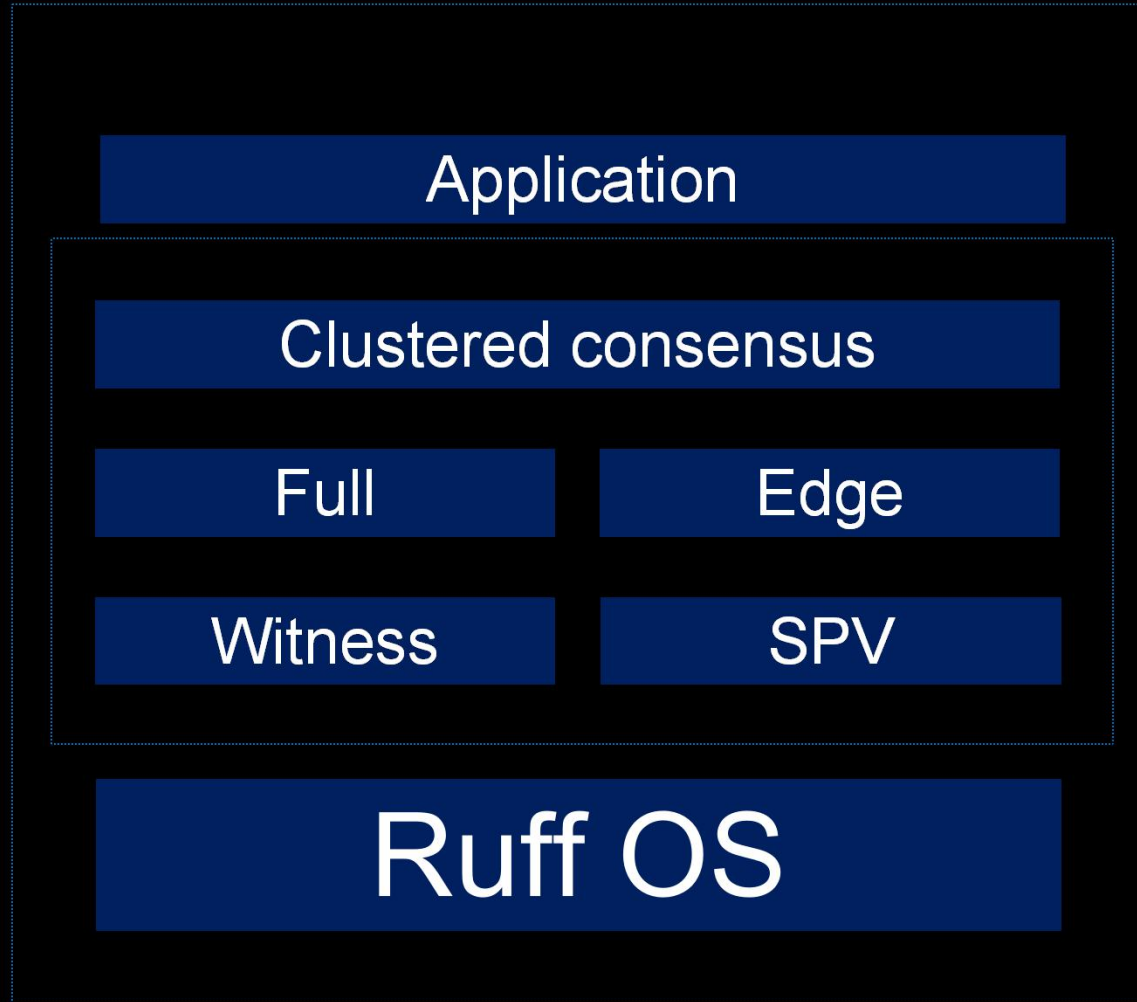
function redOn() {
    $('led-red').on();
    $('led-green').off();
}

function greenOn(){
    $('led-green').on();
    $('led-red').off();
}

$.ready(function (error) {
    if (error) {
        console.log(error);
        return;
    }
    var sr501 = $('sr501-0');
    sr501.on('nearBy', redOn);
    sr501.on('away', greenOn);
});
```


Ruff Chain

What is Ruff Chain?



Case study

Internet Of Things and blockchain



An aerial, dark-toned photograph of a city skyline, likely New York City, with numerous skyscrapers. A thick plume of white smoke or steam rises from the center-left of the image, partially obscuring some buildings. A thin white vertical line with a small circle at its base extends from the top edge of the frame down to the text.

Code easier, change faster

@  RuffChain