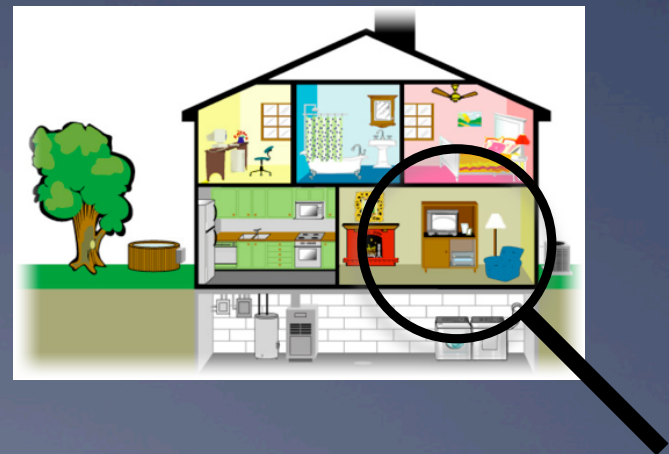


# Do-it-for-me home network management

Dina Papagiannaki  
Intel Labs Pittsburgh

UW/MSR summer institute, July 2009



**The Home of 2020**

# The Grouse CONTROL CENTER

Thursday, July 3rd



## SYSTEM STATUS:

	19) Garage Door	SECURE
	20) Garage Back Door	SECURE
	21) Patio Door	SECURE
	22) Upstairs Sliding Door	SECURE
	23) Master Bedroom Deck Door	NOT READY
	24) Safe Door	SECURE
	25) Mechanical Room Door	SECURE
	26) Wine Door	SECURE

UP      DOWN

## SYSTEM STATUS: OK

Security Mode: Off  
Phone Line: OK

KWh: 1.400  
AC Power: OK (122.1v)

## WEATHER

High: 76°      **60°**      Low: 58°  
 SUNRISE: 5:18 AM      Thunderstorm      SUNSET: 9:04 PM

FRI	SAT	SUN	MON
72° 56°	76° 56°	76° 54°	76° 54°

## STOCKS

DIS	30.90	+ 0.19	MSFT	25.98	+ 0.10
AAPL	170.12	+ 1.94	GOOG	537.00	+ 9.96
AMZN	72.00	+ 0.56	SBUX	15.56	- 0.12

## CAMERAS



MESSAGES: Garbage Day



# The reality in 2009

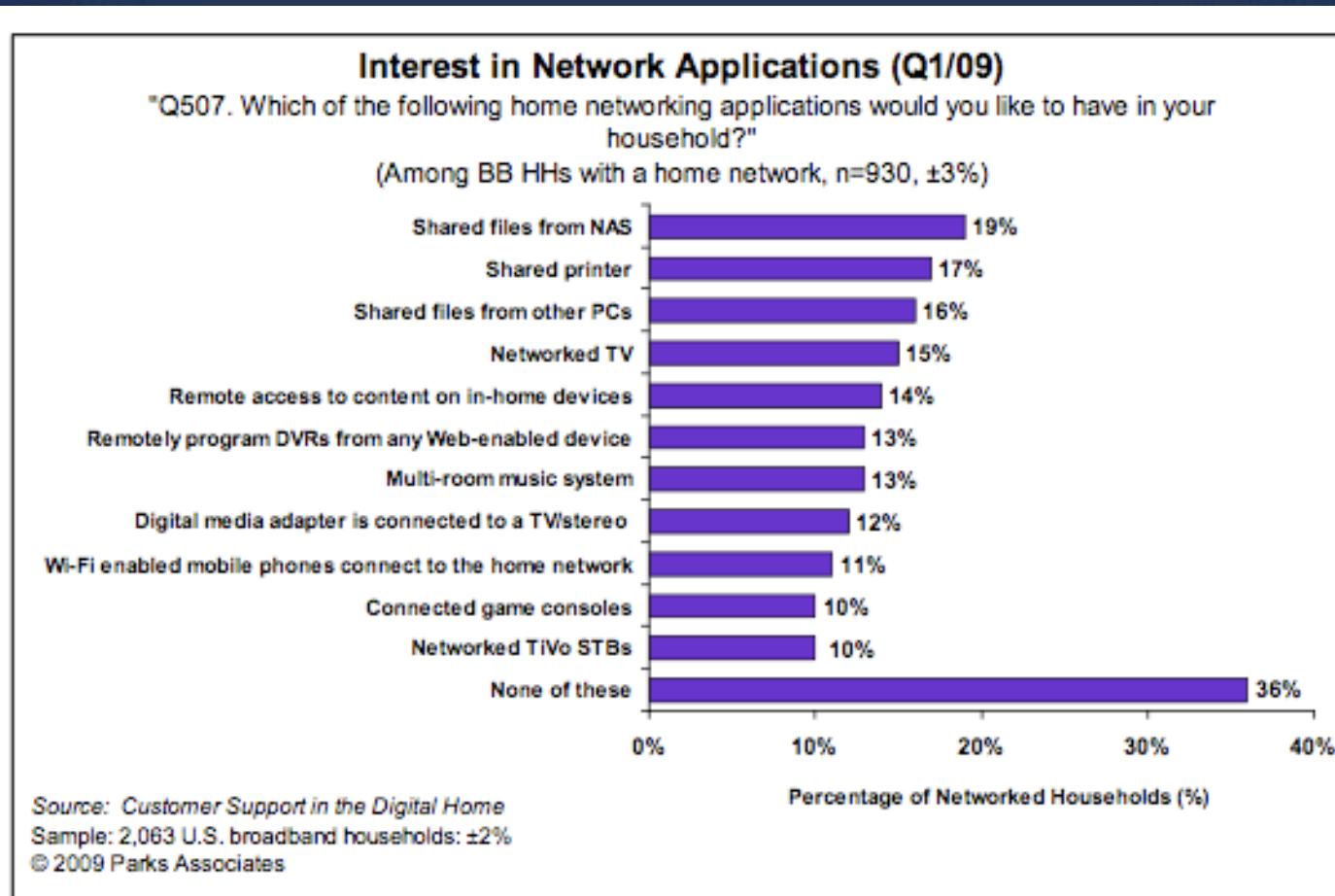
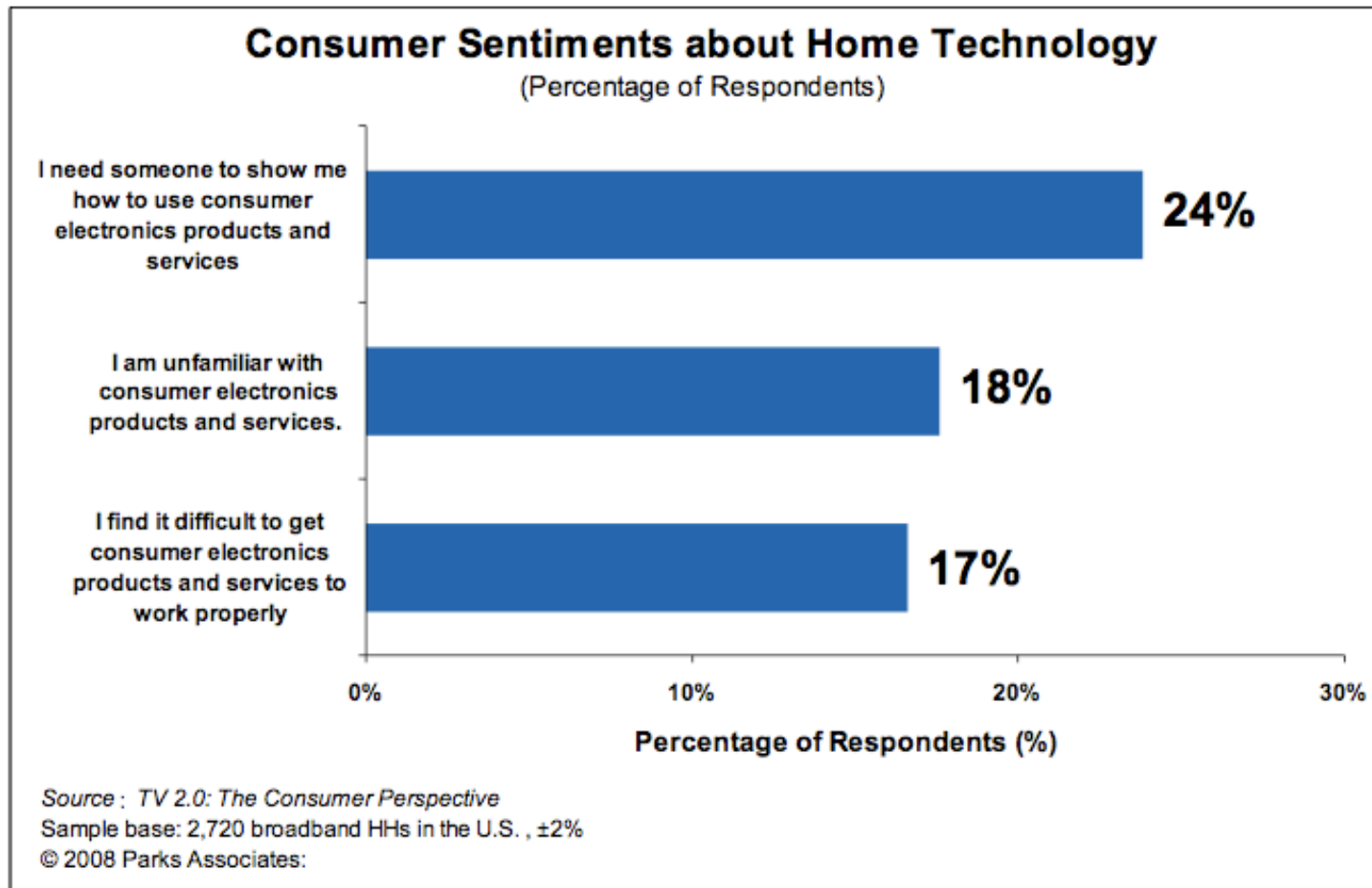


Figure 15 Interest in Networked Applications

# Consumers and Home Technology



**Figure 2 Consumer Sentiments about Home Technology**



# A Simple Past



Individually & together, maintenance & repair is growing more complicated with an often confusing support system



# Providers interested in support services

- \* 20-50% broadband customer support calls today are unrelated to the broadband service!
- \* Each call last 9-25 minutes at \$0.75-0.85/minute.
- \* Total U.S. revenues for digital home support services are projected to grow from \$3.9 billion in 2009 to \$6.4 billion by year-end 2013.

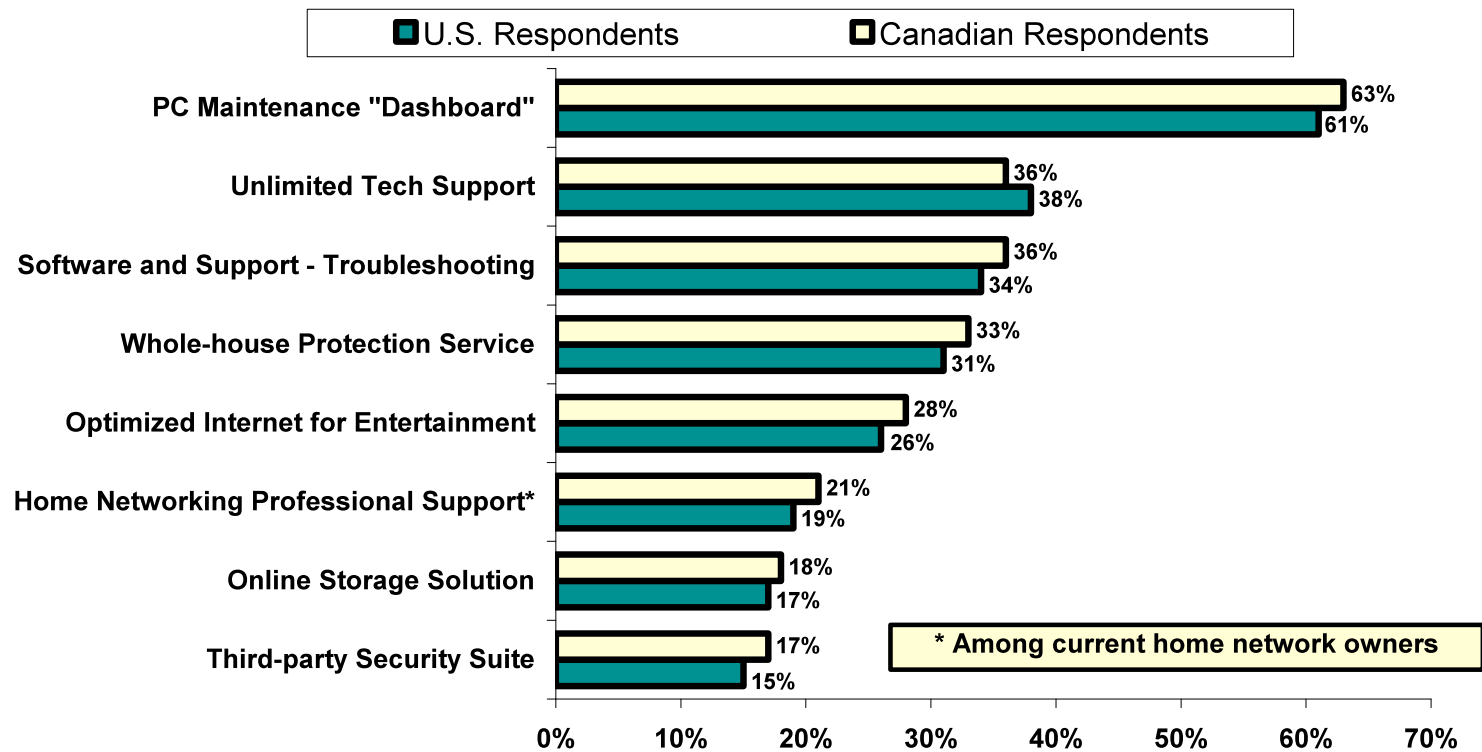
Digital Home Tech Support: Analysis and Forecasts, Parks Associates, May 2009



# Consumer Interest in Managing the Digital Home

## Overall Interest in Digital Home Management Services & Solutions, U.S. and Canadian Respondents

(Rating of 5-7 on a 7-point scale, where "7" means "extremely interested")



Source: *Managing the Digital Home*, a survey of 6,116 U.S. and Canadian home Internet users  
© 2006 Parks Associates

# Software or a Service?

- \* Products
  - \* SingleClick Systems HomeNet Manager (\$40)
  - \* Network Magic by Cisco and Linksys (\$50)  
[http://newsroom.cisco.com/dlls/2009/prod\\_051209.html](http://newsroom.cisco.com/dlls/2009/prod_051209.html)
  - \* (focused on outage and configuration – not performance)
- \* AT&T ConnecTech/Verizon ExpertCare/  
Plumchoice/GeekSquad

# Home computing as a utility (and for the utilities)



Water



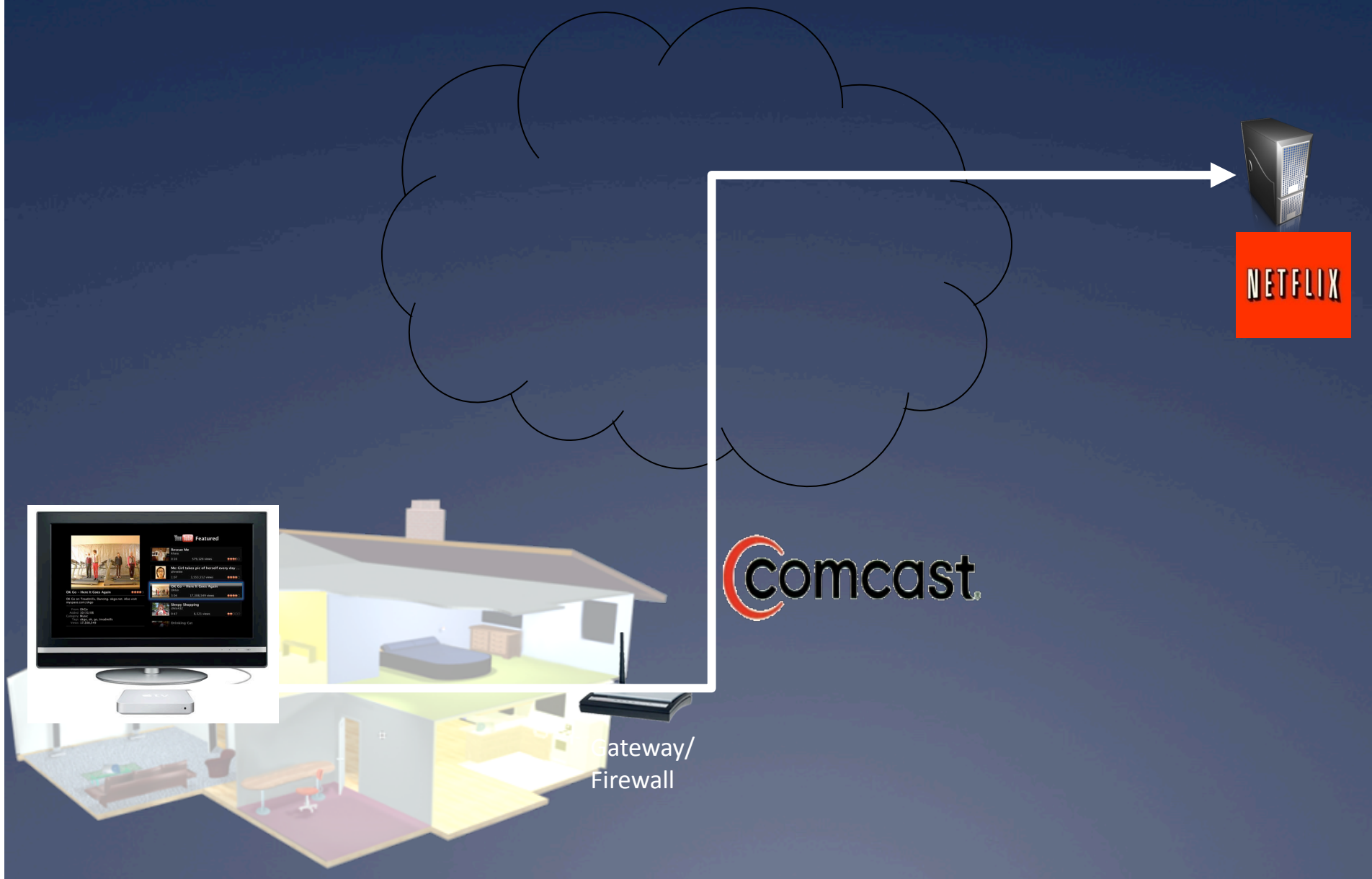
Gas



Electricity

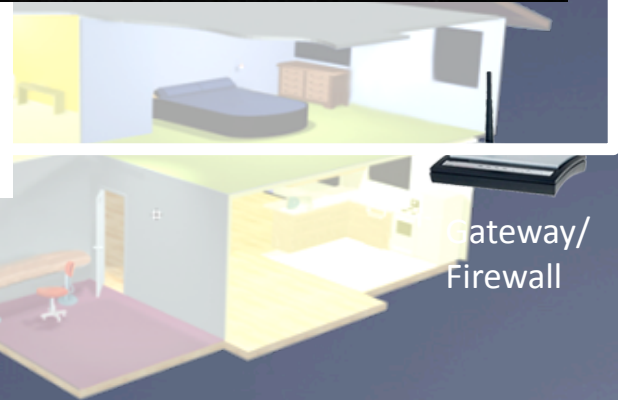
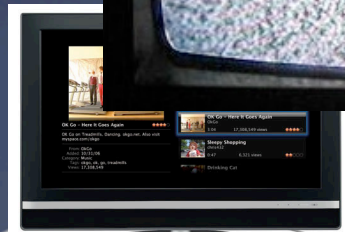
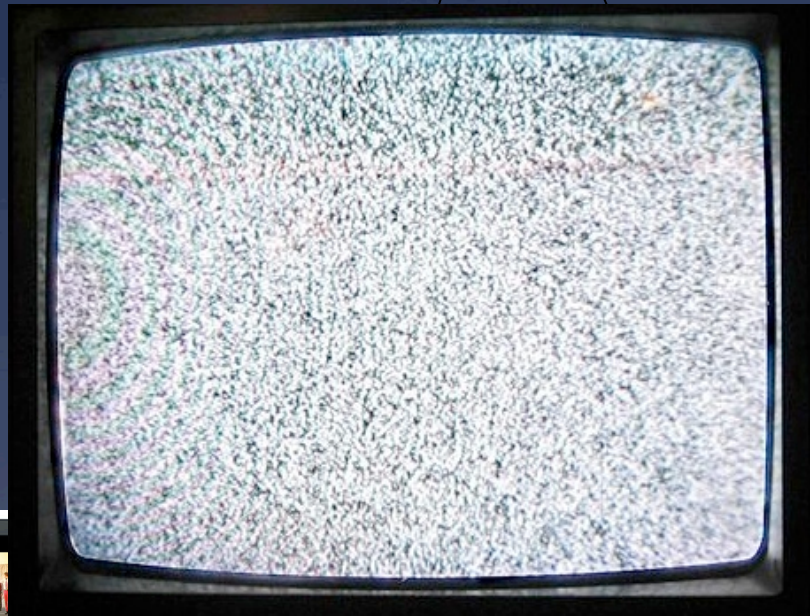
Requires the same level of robustness and support.

# E2E View of Modern TV Services



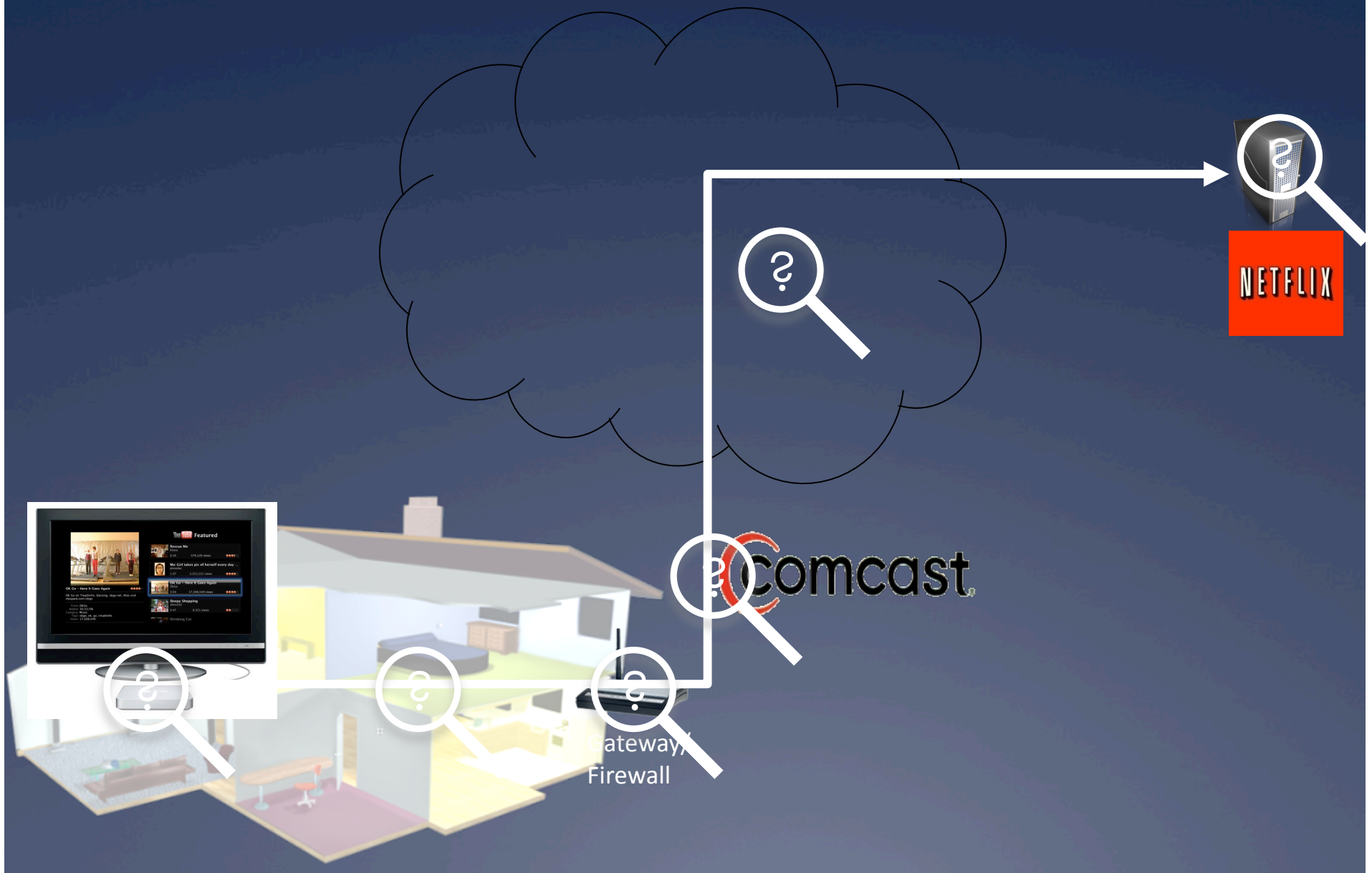


# User experience



Gateway/  
Firewall

# Troubleshooting problems



# Choosing a New TV

- \* Will it work?
- \* What will the picture look like?
- \* Does it have the right network interface?
- \* Do I have the right home network?
- \* Do I have the right Internet Service plan?
- \* Do I have the right level of service from the content provider?

## Recommendations:





# Components to Ease of Use



configure



maintain



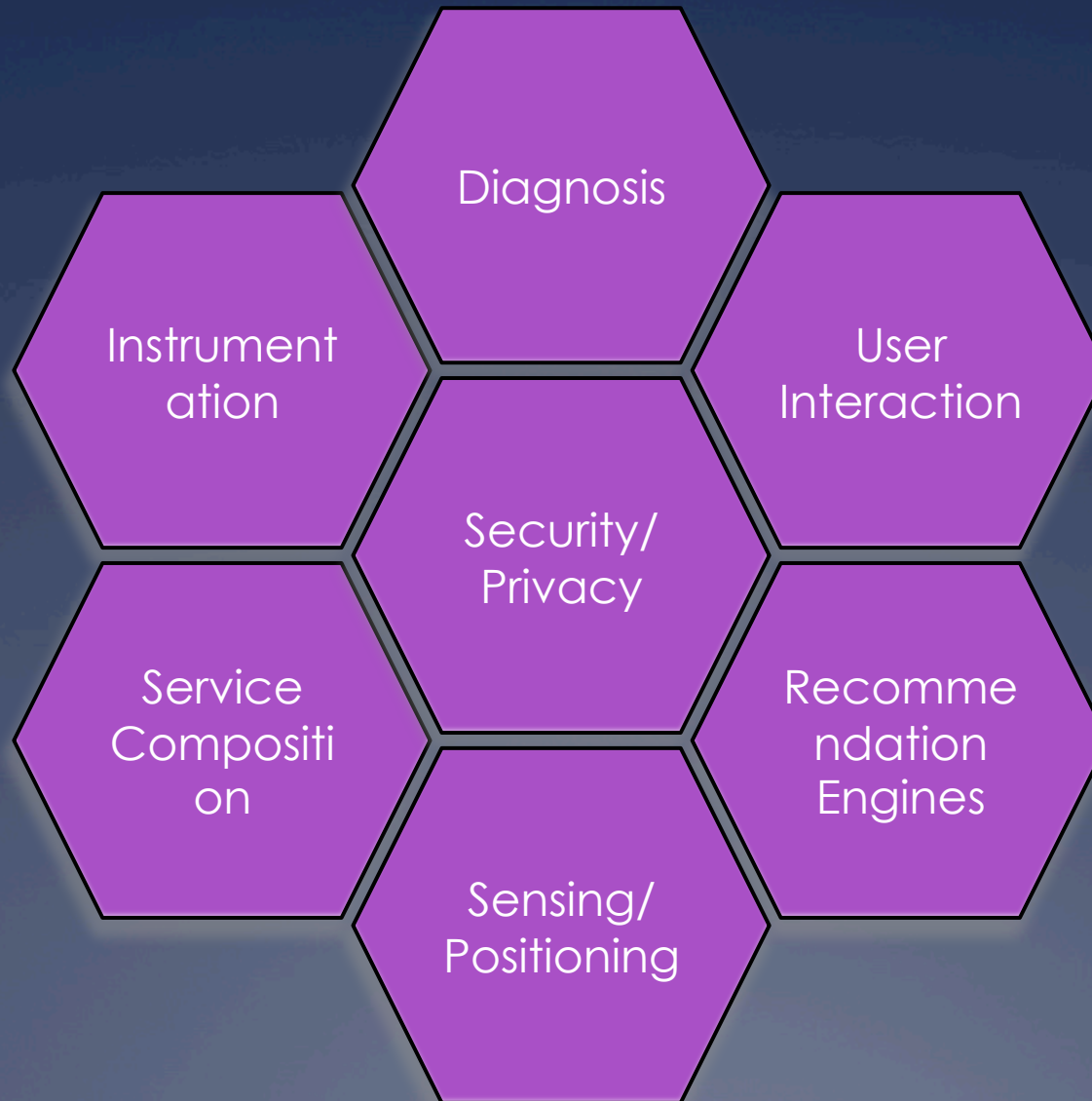
secure



control



# Research areas



Backup