

***CLOUD ROBOTICS IS THE
MOST LIKELY KILLER APP FOR 5G***

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and not a “science fiction guy”

A world
filled
with
robots

capable
of
human-
like skills

is just
around
the
corner.

Cloud Robots are machines that . . .

- do things we **don't** want to
- do some things **better** than we can
- add **skills** like smartphones download apps
- **learn** from the experiences of other cloud-connected robots

*The term “Cloud Robotics” was coined
in 2010 by James Kuffner*

*Associate Professor, Carnegie Mellon University
CEO, Toyota Research Institute - Advanced
Development (TRI-AD)*

In
Human
vs.
Machine:

Your Brain . . .

- weighs ~3.5 pounds
- runs on ~40 watts.

Equivalent in Silicon . . .*

- ~2,000 tons!
- ~running on 40,000,000 watts!

the
physics
says

Physics forces a cloud-based architecture

- the weight & energy **can't be with** the robot body
- likewise for other factors (i.e. size, heat dissipation)

go
cloud,
or go
home.

5G provides the bandwidth & speed

- fastest part of human brain deals with **vision**
- networks achieve benchmark with 4K & 8K

****Observations of Bill Huang, Founder, CloudMinds
from "Robots with their Heads in the Clouds"
Scientific American, August 2, 2017***

Cloud
Robot
Services

will **call**
the shots

for 5G &
beyond.

*Of course all this
could be wishful
thinking; but when
you chat with bots,
see self-driving
cars . . .
Kind of makes you
wonder . . .
doesn't it ?!*

Cloud Robot bandwidth demand will exceed that of humans for 5G and beyond

- multiple vision streams of data
- online and working 24 x 7 x 365 - *while we sleep!*
- bi-directional learning interface with the cloud brain

Owners will highly value their Cloud Robot

- valuation comparable to multiple unskilled and skilled laborers

maid	chef	nurse
guard	hostess	nanny
secretary	concierge	gatekeeper

The economics of cloud-connected robot services will drive future mobile network design and operations