DFT Vs Quantum FT.

(4)

In QFT we don't get the whole vector as output

But we get only one value in the vector with

some probability.

we get $|0\rangle$ with a Prob. $\left(\frac{-1}{\sqrt{2}}\right)^2 = \frac{1}{2}$

or $|1\rangle$ with a Prob $\left|\frac{1-i}{2\sqrt{2}}\right|^2$

or $|3\rangle$ with a Prob $\left|\frac{1+i}{2\sqrt{2}}\right|^2$

So QFT is called Quantum Fourier Sampling